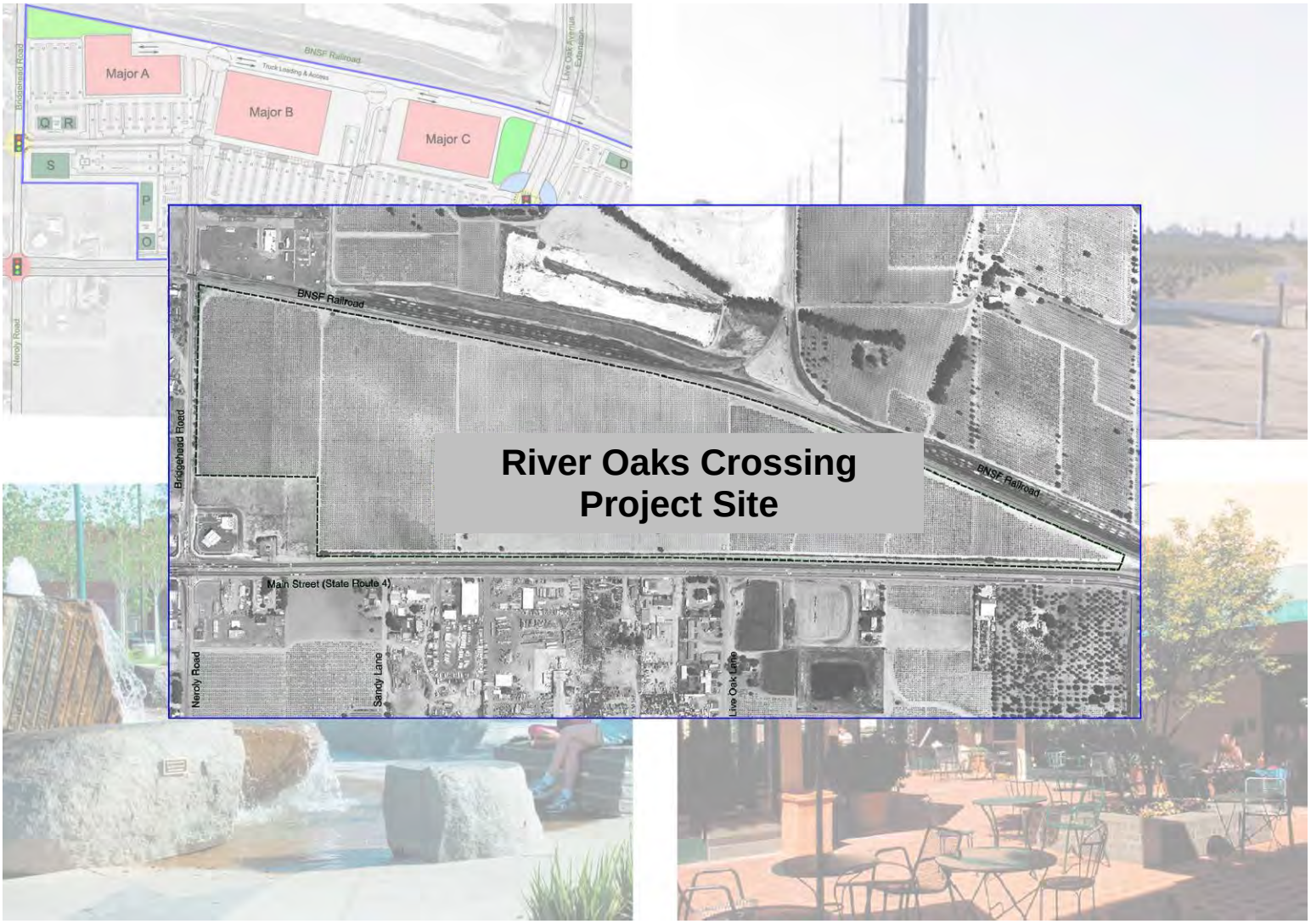
River Oaks Crossing Specific Plan
Draft Environmental Impact Report

(Previously known as the Cline Specific Plan Draft EIR)
State Clearinghouse # 2003112042



September 2007

City of Oakley
A Place for Families in the Heart of the Delta

DRAFT ENVIRONMENTAL IMPACT REPORT
RIVER OAKS CROSSING SPECIFIC PLAN PROJECT

State Clearinghouse # 2003112042

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1. INTRODUCTION and SUMMARY

Introduction

The City of Oakley and Oakley Redevelopment Agency sponsored the preparation of the accompanying River Oaks Crossing Specific Plan to guide future development of the 76.4-acre Project site, located along the north side of Main Street, east of Bridgehead Road at the City's westerly entrance from Highway 160. Pursuant to policies, programs and maps adopted as part of the City of Oakley 2020 General Plan, the Specific Plan establishes a set of approved commercial uses for the property, provides standards for site development and future building improvements, and identifies roadway and infrastructure improvements to serve the Project area.

The River Oaks Crossing Specific Plan includes a Development Plan, which identifies planned commercial building envelopes, internal site circulation and parking areas. The Development Plan and related Specific Plan policies and standards have been prepared to implement all applicable policies, programs and maps contained in the Oakley 2020 General Plan calling for community-serving retail uses at this key community entrance. A range of initial land use concepts was developed in the planning process, and reviewed by the City / Redevelopment Agency at a series of public workshop meetings held on December 8, 2003, April 26, 2004 and October 22, 2004. These initial concepts were refined through further technical analysis, and through additional comments received during the Initial Study review process, including a public scoping meeting held on November 12, 2003.

Because the Specific Plan is consistent with and designed to implement established General Plan policies, the City and Redevelopment Agency have determined that the Specific Plan EIR should tier from the certified program-level November 2020 Oakley General Plan EIR (SCH # 20020421134), hereinafter referred to as General Plan EIR. CEQA Guidelines Section 15152(f) provides that "a later EIR shall be required when the initial study or other analysis finds that the later Project may cause significant effects on the environment that were not adequately addressed in the prior EIR." This project-level Draft EIR therefore relies upon and incorporates the analysis and findings adopted as part of the certified General Plan EIR, and provides expanded analysis of additional issues specific to the proposed Project, as determined through the Initial Study and as subsequently determined through the analysis.

The 2020 Oakley General Plan EIR is available for review by the public at the Oakley City Hall, located at 3231 Main Street, Oakley CA, 94561, (925)625-7006. In addition the General Plan EIR is also available for review on the City's website at www.ci.oakley.ca.us.

New Effects Identified in the Specific Plan Initial Study

The Initial Study determined that the following potential areas of impacts associated with the proposed Specific Plan Project were not adequately addressed in the Oakley 2020 General Plan EIR in order to be applied to the Specific Plan at a project-level of review:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Public Services
- Transportation and Traffic
- Utilities and Service Systems

Additional Potentially Significant Effects

In addition to those areas identified in the Project Initial Study, subsequent analysis has led to identification of the following additional potentially significant effects associated with implementation of the Specific Plan Project:

- Agricultural Resources
- Potential for Urban Decay
- Energy Consumption
- Greenhouse Gasses (GHG) and Global Climate Change (GCC)

Effects Found to be Not Significant in the Initial Study

The Initial Study (Appendix A) prepared for the River Oaks Crossing Specific Plan Project as a part of this Draft EIR includes a detailed environmental checklist addressing a range of technical environmental issues. For each technical environmental issue, the Initial Study identifies the level of impact for the proposed Project. The Initial Study identifies the environmental effects as either “no impact,” “less-than-significant,” or “potentially significant.” The following impact categories are described in the Initial Study and were deemed either “no impact” or “less-than-significant without mitigation.” Pursuant to Public Resources Code Section 21100(c), these impacts are not addressed further in this analysis. All remaining issues are identified in the Initial Study as potentially significant and are discussed in this Draft EIR. It should be noted that a number of the impacts determined to have no impact or result in a less-than-significant in the Initial Study are also included in the DEIR. These topics were included in the DEIR in

response to concerns raised by the community during the NOP process or by the City itself to ensure that these topics were addressed in sufficient depth.

No Impact

Impacts identified for the proposed Project in the Initial Study as having no impact and, therefore, not requiring mitigation, are presented below.

Agricultural Resources

- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural uses.

Biological Resources

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filing, hydrological interruption, or other means.

Geology and Soils

- Soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Hazards and Hazardous Materials

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Safety hazards for people residing or working in the Project area 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.
- Safety hazards for people residing or working in the Project area for a project within the vicinity of a private airstrip.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Hydrology and Water Quality

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Boundary or Flood Insurance Rate Map or other flood hazard delineation.
- Inundation by seiche, tsunami, or mudflow.

Land Use/Planning

- Physical division of an established community.

Mineral Resources

- Result in a loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Noise

- Exposure of people residing or working in the Project area to excessive noise levels 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.
- Exposure of people residing or working in the Project area to excessive noise levels for a project within the vicinity of a private airstrip.

Population and Housing

- Displacement of substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- Displacement of substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Recreation

- Include recreational facilities or require the construction or expansion of recreational facilities.

Traffic and Circulation

- Changes in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks.

- Conflict with adopted policies, plans, or programs supporting alternative transportation.

Less-Than-Significant Impact Without Mitigation

Impacts identified for the proposed Project in the Initial Study as being less-than-significant without the implementation of mitigation are presented below. Please note that items found to be less-than-significant without mitigation by the Initial Study but are also discussed in further detail in the body of the DEIR are omitted from this list.

Biological Resources

- 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.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native nursery sites.

Geology and Soils

- Expose people or structures to a potential substantial adverse effect including the risk of loss, injury or death involving landslides.

Hazards and Hazardous Materials

- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Population and Housing

- Introduce substantial population growth in an area, either directly or indirectly.

Scope of EIR

This document has been prepared in accordance with the requirements of the California Environmental Quality Act of 1970 (CEQA), as amended, January 1, 2005. As further discussed in Chapter 1.1, the analysis tiers from that conducted in the Oakley General Plan EIR, and has been performed at a project-level of specificity, based on the standards outlined in Guidelines Sec. 15161. This Draft EIR serves the following primary functions:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities authorized by the Specific Plan;
- Identify the ways that potential environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in the Project through the use of alternatives or mitigation measures where the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why the City of Oakley and the Oakley Redevelopment Agency contemplate approval of the proposed Specific Plan, if significant environmental effects are involved.

A program-level EIR was prepared in accordance with Guidelines Section 15168, and certified in 2002 for the Oakley 2020 General Plan (SCH #2002042134 see Resolution 76-02, Appendix I, incorporated herein by reference). The City's General Plan calls for development of the subject 76.4-acre Project site with commercial land uses; the General Plan EIR analyzed the cumulative effects of such development over the build-out horizon of the Plan (2020). The General Plan EIR consists of two documents, a Draft Environmental Impact Report dated September 2002 and a Final Environmental Impact Report dated November 2002. The General Plan EIR is incorporated herein by reference and may be examined at the Planning Department, Oakley City Hall at 3231 Main Street Oakley, CA 94561, during normal business hours. The General Plan programmatic EIR was also intended as a first-tier EIR in accordance with Guidelines sections 15152 and 15385(b), anticipating additional tiered documents for specific plans, among other things. See pages 1-1 to 1-6 of the General Plan Draft EIR for more discussion on the first-tier program EIR.

The River Oaks Crossing Specific Plan DEIR tiers from the General Plan EIR pursuant to Guidelines Section 15152(d) by focusing on the localized and on-site specific development related effects of the Specific Plan, by incorporating background information and findings involving planned roadway and infrastructure improvements, and by relying on mitigation measures tied to long-term development within the community. Future development of the Project site must comply with all applicable mitigation requirements from the General Plan program, as referenced in Chapter 3.

The Lead Agency and principal contact person for the proposed Specific Plan Project and this environmental analysis are:

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Telephone: (925) 625-7000

The Project proponent for the River Oaks Crossing Specific Plan is:

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Oakley, CA 94561
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Redevelopment and Economic Development Director
Telephone: (925) 625-7016

Chapter 3 of this document analyzes the potential environmental effects of the site-specific development and future land uses proposed in the River Oaks Crossing Specific Plan Project. An Initial Study was prepared in October 2003 for the Cline Property Specific Plan, pursuant to the process set forth in Guidelines Section 15063. Based on the standards described in Section 15064, the City of Oakley subsequently issued a Notice of Preparation (NOP), outlining the basis for its decision to prepare a project-level EIR for the Specific Plan, and the scope of the EIR. Pursuant to Guidelines Sections 15081 and 15082, the NOP included the Initial Study, with a location map and description of the Specific Plan Project. See Appendix A. The NOP was circulated to the State Clearinghouse and all responsible and trustee agencies on October 31, 2003.

Written notice of a public scoping meeting was concurrently circulated, and the meeting was held on November 12, 2003 at the Delta Vista Middle School library. This meeting provided an early opportunity for agencies and the public to receive information about the Project and to offer comments for consideration and evaluation in the DEIR preparation phase. As summarized in Appendix B, a number of local business representatives and area residents attended the Scoping Meeting. Their comments are outlined in a memo dated November 14, 2003, and have been incorporated into this DEIR Analysis. A complete copy of the NOP, Initial Study and comments received on the NOP are included in Appendix A. Appendix B includes the scoping meeting notice and agenda and the November 14, 2003 memo.

The Cline Specific Plan was renamed “River Oaks Crossing” at the request of the Redevelopment Agency in August 2007.

Summary of Impacts and Mitigation Measures

Specific Plan Overview

The uses diagrammed in the Development Plan (Figure 2-18) are further summarized in Table 2-1, the Summary of Specific Plan Land Uses, and Table 2-2, the Summary of Specific Plan Parking, Circulation and Development Standards. The Project includes a range of approved building square footages, as reflected in Specific Plan Alternative 1 (the Increased Intensity Alternative) and Alternative 2 (the Reduced Intensity Alternative). The Development Plan design is based on the objectives of accommodating a land use mix that maximizes retail sales and employment opportunities while minimizing adverse environmental effects. The Development Plan includes a design option, as reflected in Alternative B, to adjust the internal circulation, parking and building envelopes, in the event that Live Oak Avenue is not extended north into the DuPont Property. This design option is intended exclusively to address internal site planning issues, and may only be implemented if it is subsequently determined through a General Plan-level analysis that the extension of Live Oak is not necessary. It should be noted that the Development Plan Alternative B could also be built out with either Specific Plan Alternative 1 or Alternative 2.

The Specific Plan includes policies approving phased development within the range of approved building square footages. The Project incorporates several site planning options, as well as a range of permitted uses further described in Section 3 of the Specific Plan. The Specific Plan also authorizes a building square footage range of from 630,000 GFA to 770,000 GFA. The DEIR analysis is based on the maximum building area of 770,000 GFA.

Potentially Significant Effects

Section 15382 of the CEQA Guidelines defines a significant effect on the environment as a substantial or potentially substantial adverse change in any of the physical conditions within the areas affected by the Project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. This Draft EIR identifies the potential for significant effects of approving and implementing the proposed Specific Plan, and mitigation measures to reduce potential adverse impacts to less than significant. An impact that remains significant after mitigation is considered an unavoidable adverse impact of the proposed Project. The mitigation measures presented in the Draft EIR will form the basis of the Mitigation Monitoring and Reporting Program.

Scoping and Areas of Potential Controversy

The Project site was classified in the Oakley 2020 General Plan for development of commercial uses. This project-level EIR analysis tiers from that presented in the certified General Plan EIR. A public scoping meeting was conducted for the

Specific Plan Project in November 2003 (please see Appendix B for details), and was attended by eight local residents and property owners. Areas of potential controversy identified during this meeting and in response to the NOP included: (1) concern over financial responsibilities for roadway improvements that might be placed on other area property owners; (2) possible effects of added Project traffic on Bridgehead Road and access from adjoining properties; (3) potential noise and glare effects from parking and traffic adjoining Bridgehead Road in relationship to residential uses on the west side of the street; and (4) adequacy of traffic carrying capacity of Main Street east of the Project site. These issues are addressed in Chapter 3 of the DEIR.

Impacts and Mitigation Measures

Table EIR 1-1 provides a summary of the proposed Project's potential impacts, their level of significance before mitigation, the nature of applicable mitigation measures to be implemented with the Project, and the resultant significance of impacts after application of mitigation measures. A detailed discussion of the Project's impacts and mitigation measures is provided in Chapter 3 of this EIR. Those impacts of the Project which are cumulatively considerable, significant, and unavoidable are also discussed by environmental factor in Chapter 3, and summarized in Chapter 4.

The analysis in Chapters 3 and 4 shows that implementation of the Specific Plan Project would result in additional traffic to and from the site, which would result in new air pollutant emissions within the air basin in excess of the significance threshold level established by the BAAQMD. Additional traffic to and from the site would also result in noise level increases that would be expected to exceed the threshold standards for significance. In addition, development of the Project site would result in the loss of 76.4 acres of vineyards, 25 acres of which are considered heritage vineyards (source: Fred Cline). The loss of the 25-acres of heritage vineyards is considered to be a significant impact due to the rarity and unique cultural value of the vineyards to the community. Mitigation Measures AR-2(a) and (b) would minimize impacts on the loss of old vines and would promote continued local agricultural production within the East Contra Costa County area; however, the implementation of these mitigation measures would not be able to fully mitigate the loss of this historic vineyard site. Furthermore, the addition of traffic related to the proposed Project to the intersection of Wilbur Avenue and the SR 160 southbound ramps would result in a significant near-term impact, and this addition of Project-related traffic to the SR 160 southbound and northbound ramps at Wilbur Avenue would result in a significant cumulative impact. Mitigation Measures CT-10 and CT-11 would reduce this impact to a less-than-significant level; however, because the improvements required under these measures are located in the City of Antioch and are outside the jurisdiction of the City of Oakley, implementation cannot be guaranteed with respect to development of the Project site.

Neither the Project alternatives as discussed in Chapter 5, nor the available mitigation measures would serve to avoid or reduce the above-mentioned effects to a less-than-significant level. Consequently, Table 1-1 indicates that these four impacts remain Significant and Unavoidable (SU).

Following is a brief summary of impacts, required mitigation measures and the level of impact significance before and after application of mitigation. Please refer to Chapter 3 for a detailed discussion of issues identified in this table.

Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Land Use and Planning (LU) Chapter 3.1			
Impact LU-1 - Physically Divide an Established Community	**LTS**	**None Required.**	**LTS**
Impact LU-2 - Conflict with Any Applicable Land Use Plan, Policy, or Regulation	**LTS**	**None Required.**	**LTS**
Impact LU-3 - Conflict with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan	**LTS**	**None Required.**	**LTS**
Cumulative Land Use Impacts	**LTS**	**None Required.**	**LTS**
Circulation and Transportation (CT) Chapter 3.2			
Impact CT-1 - Near Term (Existing + Project) Conditions at Main Street / Bridgehead Road / Neroly Road intersection	**PS**	**CT-1:** The Main Street / Bridgehead Road / Neroly Road intersection shall have a second exclusive left-turn lane added, to provide one exclusive right-turn lane, one through lane, and two left-turn lanes on the southbound approach. This improvement is part of the Main Street widening Project, which is included in the City's Five Year Capital Improvement Program and Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit.	**LTS**
Impact CT-2 - Near Term (Existing + Project) Conditions at Oakley Road / Live Oak Avenue Intersection	**PS**	**CT-2:** The Oakley Road / Live Oak Avenue intersection shall be signalized and provided with exclusive left-turn lanes on all approaches. The installation of a signal at the Oakley Road / Live Oak Avenue intersection is included in the City's Transportation Impact Fee Program, but is not	**LTS**

NI = No Impact; N/A = Not Applicable; LS = Less-than-Significant; PS = Potentially Significant; S = Significant; SU = Significant and Unavoidable

Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		currently included in the City's Five Year CIP. If the improvement is included in the City's Five Year CIP upon issuance of the first building permit then the Project shall contribute to the mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit. In the event the improvement has not been added to the City's Five Year CIP upon issuance of the first building permit then the Project shall install the improvement and be eligible for reimbursement from the Transportation Impact Fee Program.	
Impact CT-3 - Near Term (Existing + Project) Conditions at Neroly Road / Live Oak Avenue Intersection	**PS**	**CT-3:** The Neroly Road / Live Oak Avenue intersection shall be signalized and provided with exclusive left-turn lanes on the northbound and southbound approaches. The installation of a signal at the Neroly Road / Live Oak Avenue intersection is included in the City's Transportation Impact Fee Program, but is not currently included in the City's Five Year CIP. If the improvement is included in the City's Five Year CIP upon issuance of the first building permit then the Project shall contribute to the mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit. In the event the improvement has not been added to the City's Five Year CIP upon issuance of the first building permit then the Project shall install the improvement and be eligible for reimbursement from the Transportation Impact Fee Program.	**LTS**
Impact CT-4 - Near Term (Existing + Project) Conditions at Wilbur Avenue / SR 160 Southbound	**LTS**	**None Required.**	**LTS**

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Ramps			
Impact CT-5 - Development Plan Circulation Impacts	**LTS**	**None Required.**	**LTS**
Impact CT-6 - Inadequate Emergency Access	**LTS**	**None Required.**	**LTS**
Impact CT-7 - Parking Supply	**LTS**	**None Required.**	**LTS**
Impact CT-8 - Impacts to Bicycle and Pedestrian Facilities	**LTS**	**None Required.**	**LTS**
Impact CT-9 - Impacts to Public Transportation	**LTS**	**None Required.**	**LTS**
Impact CT-10 - Cumulative Plus Project (2030) Impacts to Wilbur Avenue / SR 160 Southbound Ramps	**PS**	**CT-10:** The Wilbur Avenue / SR 160 southbound ramps intersection shall be signalized. Due to its proximity to the Wilbur Avenue / SR 160 northbound ramps and the Wilbur Avenue / Bridgehead Road intersections, the three intersections shall be signalized at the same time and signal timings and phasings shall be coordinated. The SR 160 ramp intersections are located in the City of Antioch, and the need for this improvement is dependent on the timing of other cumulative projects in Oakley and Antioch. In order to facilitate the construction of improvements on those transportation facilities within the control of Antioch, the City will collect, through development agreements, a fair share payment with the issuance of each building permit associated with the project. The City will hold the payments until such time improvements are installed at the subject intersection at which time the City will use the held payments to reimburse the applicable entity. The fair share amount shall be a fee payment based on the project's proportionate contribution of traffic to the subject intersection, which has been estimated to be approximately 36%. This amount has been estimated	**SU**

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		assuming maximum build out of the shopping center (770,000 square feet).	
Impact CT-11 - Cumulative Plus Project (2030) Impacts to Wilbur Avenue / SR 160 Northbound Ramps	**PS**	**CT-11:** The Wilbur Avenue / SR 160 northbound ramps intersection shall be signalized. Due to its proximity to the Wilbur Avenue / SR 160 southbound ramps and Wilbur Avenue / Bridgehead Road intersections, the three intersections shall be signalized at the same time and signal timings and phasings shall be coordinated. The SR 160 ramp intersections are located in the City of Antioch, and the need for this improvement is dependent on the timing of other cumulative projects in Oakley and Antioch. In order to facilitate the construction of improvements on those transportation facilities within the control of Antioch, the City will collect, through development agreements, a fair share payment with the issuance of each building permit associated with the project. The City will hold the payments until such time improvements are installed at the subject intersection at which time the City will use the held payments to reimburse the applicable entity. The fair share amount shall be a fee payment based on the project's proportionate contribution of traffic to the subject intersection, which has been estimated to be approximately 28%. This amount has been estimated assuming maximum build out of the shopping center (770,000 square feet).	**SU**
Impact CT-12 - Cumulative Plus Project (2030) Impacts to Wilbur Avenue / Bridgehead Road	**PS**	**CT-12:** The Wilbur Avenue / Bridgehead Road intersection shall be signalized and provided with exclusive left-turn lanes on the northbound and westbound approaches. Due to its proximity to the	**LTS**

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Wilbur Avenue/SR 160 northbound ramps and Wilbur Avenue/ SR 160 southbound ramps intersections, the three intersections shall be signalized at the same time and signal timings and phasing shall be coordinated. The installation of a signal at the Wilbur Avenue/Bridgehead Road intersection is included in the City's Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit.	
Impact CT-13 - Cumulative Plus Project (2030) Impacts to Main Street / Neroly Road / Bridgehead Road	**PS**	**CT-13:** Should the connector ramps not be funded prior to the issuance of building permits, mitigation of the unacceptable conditions at Main Street / Neroly Road / Bridgehead Road intersection will be achieved by converting the second exclusive left-turn lane to a share left-turn/through lane on the northbound approach. The above improvement to the Main Street / Neroly Road / Bridgehead Road intersection is included in the City's Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit.	**LTS**
Impact CT-14 - Cumulative Plus Project (2030) Impacts to Main Street / Live Oak Avenue	**PS**	**CT-14:** Should the connector ramps not be funded prior to the issuance of building permits, mitigation of the unacceptable conditions at Main Street / Live Oak Avenue intersection will be achieved by adding an exclusive right-turn lane on the southbound approach. The proposed Project shall include the construction of this improvement prior to issuance of the Certificate of	**LTS**

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Occupancy.	
Impact CT-15 - Cumulative Plus Project (2030) Impacts to Oakley Road / Neroly Road	**PS**	**CT-15:** The Oakley Road / Neroly Road intersection shall be signalized and provided with exclusive left-turn lanes on all approaches. The installation of a signal at the Oakley Road / Neroly Road intersection, which is designed with exclusive left-turn lanes on all approaches, is included in the City's Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit.	**LTS**
Impact CT-16 - Cumulative Plus Project (2030) Impacts to Oakley Road / Live Oak Avenue	**PS**	**CT-16:** Mitigation of the unacceptable conditions at the Oakley Road / Live Oak Avenue intersection will be achieved by implementing Mitigation Measure CT-2.	**LTS**
Impact CT-17 - Cumulative Plus Project (2030) Impacts to Main Street / Empire Avenue	**PS**	**CT-17(a):** Add a second exclusive left-turn lane on the westbound approach of the intersection. The widening of Main Street at Empire Avenue is included in the City's Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit. **CT-17(b):** Convert the exclusive southbound right-turn lane at the Oakley Road/ Empire Avenue intersection to a shared through/right-turn lane. The widening of Main Street at Empire Avenue is included in the City's Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's	**LTS**

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Transportation Impact Fee with the issuance of each building permit. **CT-17(c):** Coordinate signal phasing and timing at the Main Street / Empire Avenue and Oakley Road / Empire Avenue intersections. The coordination of signals at Main Street / Empire Avenue and Oakley Road / Empire Avenue intersections is not currently included in the City's Transportation Impact Fee Program. If the improvement is included in the City's Transportation Impact Fee Program upon issuance of the first building permit then the Project shall contribute to the mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit. In the event the improvement has not been added to the City's Transportation Impact Fee Program upon issuance of the first building permit then the Project shall install the improvement and be eligible for reimbursement from the Transportation Impact Fee Program.	
Impact CT-18 - Cumulative Plus Project (2030) Impacts to Neroly Road / Live Oak Avenue	**PS**	**CT-18:** Mitigation of the unacceptable conditions at the Neroly Road / Live Oak Avenue intersection shall be achieved by implementing Mitigation Measure CT-3.	**LTS**
Impact CT-19 - Project (2030) Impacts to Laurel Road / Empire Avenue	**PS**	**CT-19:** A second exclusive left-turn lane and one exclusive right-turn lane shall be added on the eastbound approach, and an exclusive right-turn lane shall be added on the southbound approach to the Laurel Road / Empire Avenue intersection. This improvement is not currently included in the City's	**LTS**

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Transportation Impact Fee Program. If the improvement is included in the City's Transportation Impact Fee Program upon issuance of the first building permit then the Project shall contribute to the mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit. In the event the improvement has not been added to the City's Transportation Impact Fee Program upon issuance of the first building permit then the Project shall install the improvement and be eligible for reimbursement from the Transportation Impact Fee Program.	
Noise (N) **Chapter 3.3**			
Impact N-1 - Increase in Off-Site Traffic Noise Due to the Project	**LTS**	**None Required.**	**LTS**
Impact N-2 - Operational Noise Exposure at Existing Sensitive Receptors	**LTS**	**None Required.**	**LTS**
Impact N-3 - Noise Exposure to Proposed Hotel (Pad T)	**LTS**	**None Required.**	**LTS**
Impact N-4 - BNSF Railway Overpass	**LTS**	**None Required.**	**LTS**
Impact N-5 - Construction Noise	**PS**	**N-5:** All construction activities shall adhere to all applicable provisions of the City of Oakley Noise Ordinance and applicable Oakley 2020 General Plan mitigation measures. Construction activities shall be limited to 7 a.m. to 6 p.m., Monday-Friday and 8 a.m. to 5 p.m. on Saturdays. Construction shall not occur on Sunday. All internal combustion engines shall be fitted with factory specified mufflers, and should be in good working order. The Project contractor(s) shall	**LTS**

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		locate equipment staging areas as far as possible from existing noise-sensitive receivers to the east and west of the Project site.	
Impact N-6 - Railroad Noise	**LTS**	**None Required.**	**LTS**
Impact N-7 - Railroad-related Vibration	**LTS**	**None Required.**	**LTS**
Cumulative Noise Impacts	**SU**	**None Available.**	**SU**
Biological Resources (BR) **Chapter 3.4**			
Impact BR-1 - Tree Removal	**PS**	**BR-1:** Prior to the issuance of grading permits that would result in the removal of Heritage Trees, the Project developer shall apply for a tree removal permit and submit a tree replacement plan for the review and approval of the Community Development Department. The plan shall be in compliance with the City of Oakley Zoning Ordinance. The plan shall include but not be limited to: • A map showing where the replacement and new trees will be located; and • Tree removal shall be mitigated at a minimum 3:1 ratio or other ratio acceptable to the City of Oakley, or an in-lieu fee shall be paid on a per-inch basis as determined by the Community Development Department.	**LTS**
Impact BR-2 - Passerines	**PS**	**BR-2(a):** The removal of any trees or shrubs shall occur outside of the avian nesting season. If removal of buildings, trees, emergent aquatic vegetation, or shrubs occurs, or construction begins between February 1 and August 31 (nesting season for passerine or non-passerine land birds), a nesting bird	**LTS**

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		survey shall be performed by a qualified biologist within one week prior to the removal or disturbance of a potential nesting structure, trees, or shrubs, or the initiation of other construction activities. During this survey, a qualified biologist shall inspect all potential nesting habitat (trees, shrubs, structures, grasslands, pastures, etc.) in and immediately adjacent to the impact areas for nests. If a nest is not found, mitigation is not required. If a nest is found onsite, then Mitigation Measure BR-2(b) shall be implemented. **BR-2(b):** All vegetation and structures with active nests shall be flagged and an appropriate non-disturbance buffer zone shall be established around the nesting tree. The size of the buffer zone shall be determined by the Project biologist in consultation with CDFG, shall be submitted to the City for review and will depend on the species involved, site conditions, and type of work to be conducted in the area. Typically, if active nests are found, construction activities shall not take place within 500 feet of the raptor nests and within 75 - 100 feet of other migratory birds until the young have fledged. A qualified biologist shall monitor active nests to determine when the young have fledged and are feeding on their own. The Project biologist and CDFG shall be consulted for clearance before construction activities resume in the vicinity.	
Impact BR-3 - Burrowing Owls	**PS**	**BR-3(a):** Prior to issuance of a grading permit, pre-	**LTS**

Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		construction surveys of all potential burrowing owl habitat shall be conducted by a qualified biologist within the Project area and within 250 feet of the Project boundary. Presence or sign of burrowing owl and all potentially occupied burrows shall be recorded and monitored according to CDFG and California Burrowing Owl Consortium guidelines. If burrowing owls are not detected by sign or direct observation, construction may proceed. **BR-3(b):** Prior to issuance of a grading permit, focused over-wintering surveys of all potential burrowing owl habitat shall be conducted by a qualified biologist within the River Oaks Crossing Specific Plan area. Presence or sign of burrowing owl shall be recorded and monitored according to CDFG and California Burrowing Owl Consortium guidelines. **BR-3(c):** If potentially nesting burrowing owls are present during pre-construction surveys conducted between February 1 and August 31, grading shall not be allowed within 250 feet of any nest burrow during the nesting season (February-August), unless approved by the CDFG. **BR-3(d):** If burrowing owl is detected during pre-construction surveys outside the nesting season (September 1-January31), passive relocation and monitoring may be undertaken by a qualified biologist following CDFG and California Burrowing Owl Consortium guidelines, which involve the placement of	

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		one-way exclusion doors on occupied and potentially occupied burrowing owl burrows. Owls shall be excluded from all suitable burrows within the Project area and within a 160-foot buffer zone of the impact area. A minimum of a week shall be allowed to accomplish this task and allow for owls to acclimate to alternate burrows. These mitigation actions shall be carried out prior to the burrowing owl breeding season (February 1- August 31) and until construction begins, the site shall be monitored weekly by a qualified biologist to ensure that burrowing owls do not re-inhabit the site. **BR-3(e):** The City is in the process of approving an ordinance to enforce mitigation fee payment schedules based upon the recently approved East Contra Costa County Habitat Conservation Plan (HCP). The River Oaks Crossing Specific Plan area is within the HCP inventory area. The HCP development fee is based on the Project location. The HCP includes three Fee Zones, defined by a map that determines the fee paid by development (Figure 9-1 of the HCP), regardless of the land cover type within them. The River Oaks Crossing site is within the HCP Development Fee Zone I: Cultivated and Disturbed Lands. The development fee in Zone I is approximately $12,000 per acre. The HCP fee will apply to the entire 76.4-acre site, which would is approximately $916,800 in present day dollars (76.4 acres times $12,000).	

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		BR-3(f): Before construction activities begin, all construction personnel shall receive training that includes photos of burrowing owl for identification purposes, habitat description, limits of construction activities in the Project area, and guidance regarding general measures being implemented to conserve burrowing owl as they relate to the Project. **BR-3(g):** A monitoring report of all activities associated with pre-construction surveys, avoidance measures, and passive relocation of burrowing owls shall be submitted to the City and CDFG no later than two weeks before initiation of grading.	
Cumulative Biological Resources Impacts	**LTS**	**None Required.**	**LTS**
Cultural Resources (CR) Chapter 3.5			
Impact CR-1 - Disruption of Known Historic and Prehistoric Artifacts	**PS**	**CR-1(a):** All construction personnel shall be trained regarding the recognition of possible buried cultural remains, including prehistoric and historic resources during construction, prior to the initiation of construction or ground-disturbing activities. The Project sponsor shall complete training for all construction personnel. Training shall inform all construction personnel of the procedures to be followed upon the discovery of archaeological materials, including Native American burials. **CR-1(b):** Any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend training so they are aware of the potential for inadvertently exposing buried	**LTS**

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Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		archaeological deposits. **CR-1(c):** The Project sponsor shall provide a background briefing for supervisory construction personnel describing the potential for exposing cultural resources and anticipated procedures to treat unexpected discoveries. **CR-1(d):** Should unanticipated finds be uncovered during construction, work in the immediate vicinity must cease until an archaeologist is informed and an assessment of the historic or prehistoric resources is conducted.	
Impact CR-2 - Unearthing of previously unknown archaeological and paleontological resources, including human remains, as a result of Project grading	**PS**	**CR-2(a):** In the event that Native American human remains or funerary objects are discovered, the provisions of the California Health and Safety Code should be followed. Section 7050.5(b) of the California Health and Safety Code should be implemented in the event that human remains or possible human remains are located. The County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the Native American Heritage Commission within twenty-four hours. The Commission has various powers and duties to provide for the ultimate disposition of any Native American remains, as does the assigned Most Likely Descendant. Sections 5097.98 and 5097.99 of the Public Resources Code also call for "protection to Native American human burials and skeletal remains from vandalism and	**LTS**

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		inadvertent destruction." A combination of preconstruction worker training and intermittent construction monitoring by a qualified archaeologist will serve to achieve compliance with this requirement for protection of human remains. Worker training typically instructs workers as to the potential for discovery of cultural or human remains, and both the need for proper and timely reporting of such finds, and the consequences of failure thereof. Once the find has been identified, the archaeologist will make the necessary plans for treatment of the find(s) and for the evaluation and mitigation of impacts if the finds are found to be significant according to CEQA. **CR-2(b):** Archaeological monitoring shall be conducted by a qualified archaeologist familiar with the types of historic and prehistoric resources that could be encountered on site. Monitoring shall occur during ground disturbing construction within the Project area, or at the discretion of the consulting principal archaeologist. The qualifications of the principal archaeologist shall be approved by the City of Oakley.	
Cumulative Cultural Resources Impacts	**LTS**	**None Required.**	**LTS**
Air Quality (AQ) **Chapter 3.6**			
Impact AQ-1 - Construction Dust Emissions	**PS**	**AQ-1(a):** Consistent with guidance from the BAAQMD, and prior to issuance of a grading permit, the applicant shall incorporate the following mitigation measures into the construction contract documents,	**LTS**

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		which shall be submitted for the review and approval of the City Engineer: • Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers or dust palliatives; • Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard; • Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites; • Sweep daily (preferably with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality; • Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets; • Apply non-toxic soil stabilizers to inactive construction areas; • Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.); • Limit traffic speeds on unpaved roads to 15 mph; • Install sandbags or other erosion control	

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		measures to prevent silt runoff to public roadways; and • Replant vegetation in disturbed areas as quickly as possible. **AQ-1(b):** Consistent with guidance from the BAAQMD, and prior to issuance of a grading permit, the applicant shall incorporate the following mitigation measures into the construction contract documents, which shall be submitted for the review and approval of the City Engineer: • Use alternative fueled construction equipment (where available) • Minimize idling time (5 minutes maximum); • Use post-combustion controls to treat exhaust; • Maintain properly tuned equipment; • Use CARB-certified engines (i.e. three years old or less, and comply with CARB emission standards) • Limit the hours of operation of heavy equipment and/or the amount of equipment in use, such that heavy equipment is only operating between the hours of 7 AM and 6 PM, Monday through Friday, and 8 AM to 5 PM on Saturday. (No use of heavy equipment on Sunday.)	
Impact AQ-2 - Construction TAC Emissions	**LTS**	**None Required.**	**LTS**
Impact AQ-3 - Operational Air Quality Impacts	**LTS**	**None Required.**	**LTS**
Cumulative Air Quality Impacts	**PS**	**None Available.**	**SU**
Energy Conservation **Chapter 3.7**			

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Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact EC-1 - Project Impacts Concerning Wasteful, Inefficient, or Unnecessary Consumption of Energy by Commercial Uses	**LTS**	**None Required.**	**LTS**
Impact EC-2 - Increased Demand on Electric and Natural Gas Infrastructure	**PS**	**EC-2(a):** Each improvement plan shall show the location and method of connection to the existing natural gas supply line located along the Main Street frontage of the site. In addition, development of Major Building Envelope A and all nearby site improvements shall either require that the lines be realigned or the envelope for Building A be adjusted, in order to avoid construction and/or operational conflict. Plans shall be designed to the satisfaction of the City Engineer, pipeline owner(s) and utility provider. **EC-2(b):** Each improvement plan shall provide for underground installation of all onsite utilities, with the exception of high voltage lines, to the satisfaction of the City Engineer. In addition, improvement plans shall be prepared to provide for the undergrounding of existing overhead utility lines along Bridgehead Road, as required by the City and utility pole owners. **EC-2(c):** Each developer shall pay any and all connection fees to which the property may be subject prior to issuance of building permits. The type and amount of the fees shall be those in effect at the time the building permit is issued.	**LTS**
Cumulative Impacts Related to Increased Energy Consumption from the Proposed Project in Combination with other Foreseeable Projects in the Region	**LTS**	**None Required.**	**LTS**

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Greenhouse Gasses and Global Climate Change (GCC) Chapter 3.8			
A finding of significance was not made.			
Agricultural Resources (AR) Chapter 3.9			
Impact AR-1 - Loss of Agricultural Land	**LTS**	**None Required.**	**LTS**
Impact AR-2 - Loss of Old Growth Vineyard	**S**	**AR-2(a):** The Project's effects on agricultural resources shall be further reduced by contributing to the acquisition and permanent protection of property for habitat protection, including farming operations within East Contra Costa County through contribution to the East Contra Costa County HCP. No permit for development pursuant to the approval of the Development Plan shall be issued until the East Contra Costa County HCP fee, as adopted by the City of Oakley, has been paid. **AR-2(b):** A funding contribution of $50,000 shall be made to the City of Oakley concurrently with the issuance of initial permits for Project construction, to be used for the establishment of vineyard-related informational presentations at an Agricultural History Museum within the City.	**SU**
Cumulative Agricultural Resources Impacts	**LTS**	**None Required.**	**LTS**
Geology and Soils (GS) Chapter 3.10			
Impact GS-1 - Expose people or structures to potential substantial adverse effects, including groundshaking	**PS**	**GS-1(a):** Construction of the proposed Project shall conform to the seismic requirements stipulated in the current Uniform Building Code (UBC, 1997) for	**LTS**

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Seismic Zone 4, the zone of highest seismic risk. **GS-1(b):** A detailed geotechnical engineering design report for proposed building sites shall be submitted to the City Engineer to ensure sufficient foundation stability prior to issuance of building permits.	
Impact GS-2 - Substantial risk of liquefaction	**PS**	**GS-2:** Prior to issuance of a grading permit, the applicant/ developer shall incorporate the recommendations of a design-level geotechnical report into the improvement plans. The following measures include but are not limited to, the options available to reduce site liquefaction potential and/or adverse effects to structures located above potentially liquefiable soils. Once final grading plans are designed, the Project's geotechnical engineers shall determine the appropriate methods of mitigating the effects of liquefaction. These methods may include, but are not limited to the following measures: • Remove and replace potentially liquefiable soils; • Strengthen foundations (e.g., post-tensioned slab, reinforced mat or grid foundation, or other similar system) to resist excessive differential settlement associated with seismically-induced liquefaction; • Support the proposed struts on an engineered fill pad in order to reduce differential settlement resulting from seismically-induced liquefaction and post-seismic pore pressure dissipation; and • Densify potentially liquefiable soils with an in situ ground improvement technique such as deep dynamic compaction, vibro-compaction,	**LTS**

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		vibro-replacement, compaction grouting, or other similar methods. The specific design requirements, as identified by the Project geotechnical engineer and approved by the City Engineer, shall be incorporated into all construction documents.	
Impact GS-3 - Erosion and Sedimentation	**PS**	**GS-3:** Prior to issuance of a grading permit, the Project applicant shall submit, for the review and approval of the City Engineer, an erosion control plan that utilizes standard construction practices to limit the erosion effects during construction of the proposed Project. Measures could include, but are not limited to: • Hydro-seeding; • Placement of erosion control measures within drainageways and ahead of drop inlets; • The temporary lining (during construction activities) of drop inlets with "filter fabric" (a specific type of geotextile fabric); • The placement of straw wattles along slope contours; • Directing subcontractors to a single designation "wash-out" location (as opposed to allowing them to wash-out in any location they desire); • The use of siltation fences; and • The use of sediment basins and dust palliatives.	**LTS**
Impact GS-4 - Expansive soils that may result in shrink/swell conditions	**PS**	**GS-4:** Prior to approval of improvement plans, the Project developer shall conduct a design-level geotechnical study, which shall specifically address whether expansive soils are present in the	**LTS**

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		development area and include measures to address these soils where they occur. The recommendations from the geotechnical study shall be incorporated into the design of roadway and infrastructure improvements as well as foundation and building design for the review and approval of the City Engineer. Improvements, as directed by the soils engineer, may involve replacing the material under foundations and slabs-on-grade with "non-expansive" material, or modifying the expansive soil by compaction control, pre-wetting and the installation of moisture barriers.	
Cumulative Geology and Soils Impacts	**LTS**	**None Required.**	**LTS**
Hydrology and Water Quality (HWQ) Chapter 3.11			
Impact HWQ-1 - Violate Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Water Quality	**PS**	**HWQ-1(a):** Prior to any grading activities, the applicant shall provide a Storm Water Pollution Prevention Plan (SWPPP) for the entire Project site which shall include construction and post construction BMPs (including both physical and programs BMPs) to the satisfaction of the City Engineer. The SWPPP may include the following: • Straw Wattle; • Silt Fences; • Silt Slacks and Rock Bags for Drain Inlet Protection; • Hydro-Seeding; • Erosion Control Blankets; • Concrete Washouts; and/or • Wheel Washing Stations.	**LTS**

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		HWQ-1(b): Contra Costa County Flood Control and Water Conservation District Drainage fees for the Drainage Area shall be paid by the Project applicant prior to building permit issuance. **HWQ-1(c):** Improvement plans for Secondary building envelope D and any adjoining structures shall provide for protection or relocation of the existing storm drain pipeline at the easterly end of the site within an easement to the satisfaction of the City and CCCFCWCD authorities.	
Impact HWQ-2 - Substantially Alter Existing Drainage Patterns or Cause Runoff that Could Cause Sedimentation, Erosion, or Flooding	**PS**	**HWQ-2:** Prior to the issuance of grading permits for development within the Specific Plan Area, the developer shall obtain and comply with the NPDES general construction permit including the submittal of a Notice of Intent (NOI) and associated fee to the SWRCB, and the preparation of a Storm Water Pollution Prevention Plan (SWPPP) that includes construction BMPs, consistent with the Stormwater Control Plan, to be submitted to the City Engineer for review.	**LTS**
Impact HWQ-3 - Place Sensitive Land Uses within a 100-year Floodplain or Expose People or Structures to Significant Risks of Loss, Injury, or Death Involving Flooding	**LTS**	**None Required.**	**LTS**
Cumulative Hydrology and Water Quality Impacts	**LTS**	**None Required.**	**LTS**
Public Services (PS) **Chapter 3.12**			
Impact PS-1 - Adequate Fire Department Facilities	**PS**	**PS-1(a):** Prior to building permit issuance, each	**LTS**

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
and Infrastructure		developer shall comply with all applicable requirements of the Uniform Fire Code and the adopted policies of the East Contra Costa Fire Protection Districts. The Chief Building Official shall review the building plans to ensure compliance. **PS-1(b):** Prior to building permit issuance, each developer shall provide an adequate and reliable water supply for fire protection with a minimum fire flow of 2,000 gallons per minute (GPM). The required fire flow shall be delivered from not more than two fire hydrants flowing simultaneously while maintaining 20 pounds of residual pressure in the main. The City Engineer shall ensure the minimum fire flow requirements are satisfied. Flow requirements will be determined by the ECCFPD prior to issuance of encroachment and/or building permits. The developer shall provide the number and type of fire hydrants required by ECCFPD and the City Engineer. Hydrant locations will be determined by the ECCFPD and the City Engineer prior to building and/or encroachment permit issuance. All applicable connection fees shall be paid to DWD at the time of permit issuance. **PS-1(c):** Prior to construction involving use of flammable materials, the developer shall provide access driveways having all-weather driving surfaces of not less than 20' unobstructed width and not less than 13'6" of vertical clearance to within 150 feet of travel distance to all portions of the exterior walls of every building. Access driveways shall not exceed 16	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		percent grade, shall have a minimum outside turning radius of 42 feet, and must be capable of supporting imposed loads of fire apparatus (37 tons). Center divide medians on any access roadways shall leave a minimum remaining lane width of 16 feet on each side. Median length shall not exceed 150 feet when a 16-foot lane width is used. A rolled curb and an unobstructed drivable surface on the median may be used to assist with meeting apparatus turning radius requirements. The City Engineer shall ensure compliance. **PS-1(d):** Prior to encroachment and/or building permit issuance for improvements, the developer shall submit plans and specifications to the ECCFPD and the City Engineer for review and approval in accordance with codes, regulations, and ordinances administered by the ECCFPD and the State Fire Marshal's office.	
Impact PS-2 - Adequate Law Enforcement Facilities	**PS**	**PS-2:** Prior to building permit issuance for development within the River Oaks Crossing Specific Plan, the landowner shall participate in the provision of funding to maintain police services by voting to approve a special tax for the parcels within the specific plan. The tax shall be the per parcel annual amount (with appropriate future cost of living adjustment) as established at the time of voting by the City Council. The election to provide for the tax shall be completed prior to issuance of permits. Should the buildings be ready for occupancy prior to the City receiving the first disbursement from the tax bill, the	**LTS**

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Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Project proponent shall be responsible for paying the pro-rata share for the remainder of the tax year prior to the City conducting a final inspection.	
Impact PS-3 - Impacts relating to adequate funding for local schools	**PS**	**PS-3:** Prior to issuance of building permits, the proposed Project developer shall pay appropriate SB50 and AB16 school impact fees.	**LTS**
Impact PS-4 - Adequate provision of parks and recreation space	**PS**	**PS-4:** Prior to the issuance of building permits, the Project proponent shall pay applicable City of Oakley Public Facilities Impact Fees.	**LTS**
Impact PS-5 - Cumulative Impacts to Adequate Fire Department Facilities and Infrastructure	**PS**	**PS-5:** Prior to the issuance of building permits, the Project proponent shall pay a fair share of costs for new fire protection facilities and services, consistent with Ordinance 06-01 requiring fire impact fees, adopted by the City of Oakley.	**LTS**
Other Cumulative Public Services Impacts	**LTS**	**None Required.**	**LTS**
Utilities and Service Systems (USS) Chapter 3.13			
Impact USS-1 - Increased Demand on Existing Wastewater Facilities	**PS**	**USS-1:** Each improvement plan shall provide for connection to the existing ISD gravity trunk line located in Main Street. Improvement plans shall be prepared for each phase of development showing the proposed location and method of connection, to the satisfaction of the City Engineer and ISD. All applicable connection fees shall be paid to ISD at the time of permit issuance.	**LTS**
Impact USS-2 - Adequate Water Supply and Delivery for the Proposed Project Site	**PS**	**USS-2:** Prior to approval of improvement plans, the applicant shall be required to pay a fair share fee as determined by the DWD toward the CIP for water service infrastructure improvements.	**LTS**
Impact USS-3 - Need for Additional Waste	**LTS**	**None Required.**	**LTS**

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Disposal/Recycling Services			
Impact USS-4 - Cumulative Impacts to Increased Demand on Existing Wastewater Facilities	**PS**	**USS-4:** Prior to issuance of building permits, the applicant shall pay applicable trunkline and plant capacity fees to the ISD for the new WWTP.	**LTS**
Other Cumulative Utilities and Service Systems Impacts	**LTS**	**None Required.**	**LTS**
Aesthetics (AES) **Chapter 3.14**			
Impact AES-1 - Impacts to scenic vistas and natural resources along scenic highways	**LTS**	**None Required.**	**LTS**
Impact AES-2 - Degradation of the existing visual character or quality of the Project site or Project area	**PS**	**AES-2:** As part of the Architectural Review for the first Major tenant, the applicant shall submit a master Project Maintenance Program (PMP), to assure that all landscaping, water elements, pavement areas, buildings, mechanical systems, and other site and building improvements are properly cared for and will retain a high-quality appearance and proper operation. The PMP will include plans for maintenance of all building(s) and site improvements throughout the life of the Project. The PMP for each of the Major Retail pads may include provisions acceptable to the Community Development Director that address reuse of the building(s) in the event that the building(s) becomes vacant. The City may collect a Letter of Credit in an amount acceptable to the City Attorney, but not to exceed $25,000 per pad, from each of the Major Retail pads to guarantee adherence to the standards for maintenance and reuse as called for in the PMP. The City may draw upon these funds only in the event of violation of the PMP. This	**LTS**

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		requirement will help to assure long-term compliance with a range of aesthetic, acoustical, land use, water quality, and other mitigation measures from the Project EIR.	
Impact AES-3 - Impacts associated with new sources of light and glare	**PS**	**AES-3:** During construction, the developer shall install hooded and/or shielded streetlights to avoid excessive lighting on adjacent properties. The method for shielding of the lighting shall be subject to the review and approval of the Community Development Director.	**LTS**
Impact AES-4 - Alteration of the existing agricultural character of the Project site	**LTS**	**None Required.**	**LTS**
Cumulative Aesthetics Impacts	**LTS**	**None Required.**	**LTS**
Hazards and Hazardous Materials (HHM) Chapter 3.15			
Impact HHM-1 - Impacts Related to the Extension of Natural Gas Pipelines	**PS**	**HHM-1:** Implement Mitigation Measures EC-2(a) through EC-2(c).	**LTS**
Impact HHM-2 - Impacts to Storm Drainage Facilities	**PS**	**HHM-2:** Implement Mitigation Measures HWQ-1(a) through HWQ-1(c).	**LTS**
Impact HHM-3 - Impacts Related to Previous Pesticide Use	**LTS**	**None Required.**	**LTS**
Impact HHM-4 – Groundwater Monitoring Wells	**PS**	**HHM-4:** Any improvements associated with the River Oaks Crossing Specific Plan Project that would encroach onto well locations would require close coordination with USEPA and DTSC; and, prior to obtaining clearance to grade the site or conduct earthwork activities, Project workplans shall be developed and pre-approved by USEPA and DTSC for all construction activities occurring adjacent to these wells.	**LTS**

NI = No Impact; N/A = Not Applicable; LS = Less-than-Significant; PS = Potentially Significant; S = Significant; SU = Significant and Unavoidable

Table 1-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Prior to obtaining clearance to grade the site or conduct any earthwork activities, the applicant shall consult with the United States Environmental Protection Agency and Department of Toxic Substances Control regarding the relocation/reconstruction of on-site wells and piezometers. The relocation/reconstruction sites for piezometers PZ-17 and PZ-36, as well as monitoring wells MW-59 and MW-60 shall be determined by the United States Environmental Protection Agency and Department of Toxic Substances Control. During work that would involve any modification to, or potential impact upon these wells, such activity shall be directly supervised by the EPA and/or DTSC.	
Impact HHM-5 – Irrigation Wells On-Site	**PS**	**HHM-5:** Prior to the issuance of grading permits, the applicant shall hire a licensed well drilling contractor to properly abandon the on-site water wells according to City of Oakley and/or Contra Costa County Guidelines. Upon obtaining a well closure permit, the metal casing should be pulled out and the well backfilled with pea gravel and cement grout for the final review and approval by the City Engineer.	**LTS**
Impact HHM-6 – Concrete Standpipes	**PS**	**HHM-6:** Should underground pipelines or underground structures be uncovered during construction activities, the Project proponent shall stop work in the vicinity and provide an assessment, which determines whether the discovered features contain asbestos and/or lead paint, to the City Engineer for review. If pipelines or associated features do not contain asbestos, further mitigation is not required. If any pipelines or associated features	**LTS**

NI = No Impact; N/A = Not Applicable; LS = Less-than-Significant; PS = Potentially Significant; S = Significant; SU = Significant and Unavoidable

Table 1-1 Summary of Impacts and Mitigation Measures			
Impact	**Significance Before Mitigation**	**Mitigation Measures**	**Significance After Mitigation**
		contain asbestos, the applicant shall submit an asbestos abatement plan consistent with local, state, and federal standards, subject to approval by the City Engineer.	
Cumulative Hazards and Hazardous Materials Impacts	**LTS**	**None Required.**	**LTS**
Retail Market Impacts and Potential for Urban Decay (UD) Chapter 3.16			
Project & Cumulative Urban Decay Impacts	**LTS**	**None Required.**	**LTS**

NI = No Impact; N/A = Not Applicable; LS = Less-than-Significant; PS = Potentially Significant; S = Significant; SU = Significant and Unavoidable

2. PROJECT DESCRIPTION

Project Location

The River Oaks Crossing Specific Plan Project area is located in the northwesterly portion of the City of Oakley in Contra Costa County, as shown in Figure 2-1, Regional Location Map. The 76.4-acre site is situated on the north side of Main Street (SR-4) between Bridgehead Road and Big Break Road, immediately east of State Route 160, as shown in Figure 2-2, Environmental Setting.

The Specific Plan Project site has frontage on Main Street, a four-lane roadway designated on the Oakley 2020 General Plan Circulation Diagram as a Major Arterial, which currently extends through central Oakley to eastern Contra Costa County. The Project site also has frontage on the east side of Bridgehead Road, a two-lane roadway which is also designated as a Major Arterial north of Oakley Road. Sandy Lane, a designated collector street, intersects with Main Street opposite the Project site. Finally, Live Oak Avenue, a two-lane designated Major Arterial street currently connects with Main Street opposite the Project site, and is shown on the General Plan Circulation Diagram to eventually extend north through the River Oaks Crossing Property and connect with Bridgehead Road at Wilbur Avenue (See Figure 2-3).

Project Objectives

The following is a summary of the key Specific Plan Project objectives:

- To provide a retail development of at least 630,000 gross square feet, which meets the current unmet demand of consumers residing within the City and demand from planned future residential development in the City of Oakley;
- To provide a commercial center that serves both the local and regional market area to attract customers and new retailers into the City of Oakley;
- To provide a commercial development that results in a net fiscal benefit to the City of Oakley by providing new sales tax revenue and increasing property tax revenues;
- To provide a commercial center on a large, undeveloped lot in close proximity to an existing highway, and near other commercial centers to minimize travel lengths and utilize existing infrastructure to the extent possible;
- To provide a commercial center that provides sufficient development area to allow a mixture of uses in outlying parcels in addition to major anchor tenants to create a destination commercial center which will attract various types of customers to the City of Oakley;

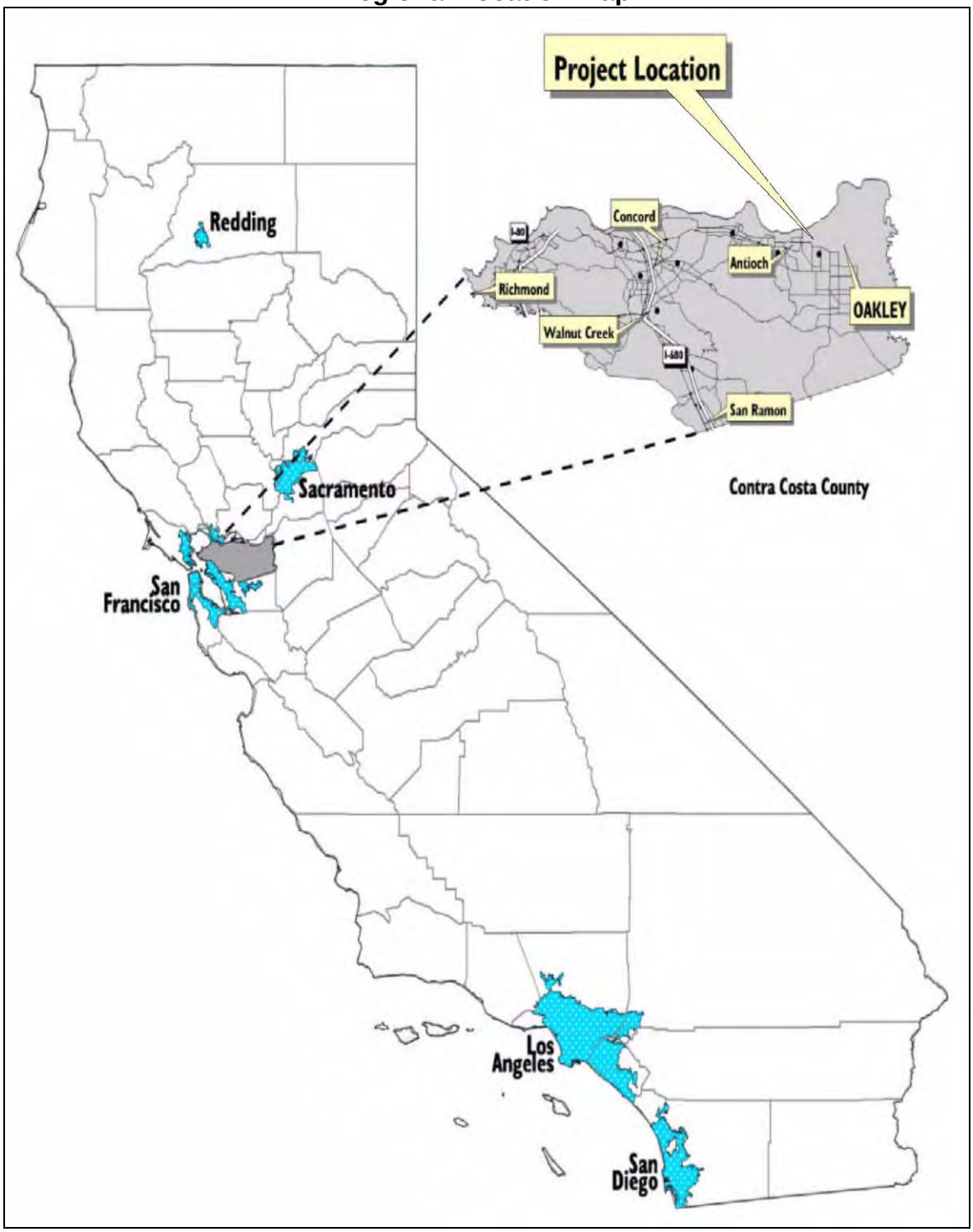
- To provide a commercial development that can be adequately served by public services and utilities;
- To provide large scale retail activities that will compliment existing smaller scale retail activities located throughout the City of Oakley;
- To provide commercial development that creates new jobs for the residents of Oakley; and
- To expand and provide new retail options in close proximity to local customers by providing daytime and nighttime shopping opportunities in a safe and secure environment.

Environmental Setting

The River Oaks Crossing Project site extends east from Bridgehead Road nearly one mile, and is bordered along its entire northerly property line by the Burlington Northern & Santa Fe (BNSF) Railroad line. The site has a triangular shape, with increasing site depth moving from east (Big Break Road end) to west (Bridgehead Road end). Buildings or other structures do not exist on the site, which is cultivated with grapes (See Figures 2-5, 2-6 and 2-7). Commercial grape production activities on the Project site involve regular disking between rows of plants and all other areas adjoining the perimeter of the site. Production activities also involve pest control and harvesting of grapes, parking for employees, and truck access for delivery of materials and off-haul of harvested grapes. As shown in Figure 2-4, the Project site is relatively flat, draining to the northeast and northwest from a localized high point near the center of the site. Other distinctive physical features do not occur on the site.

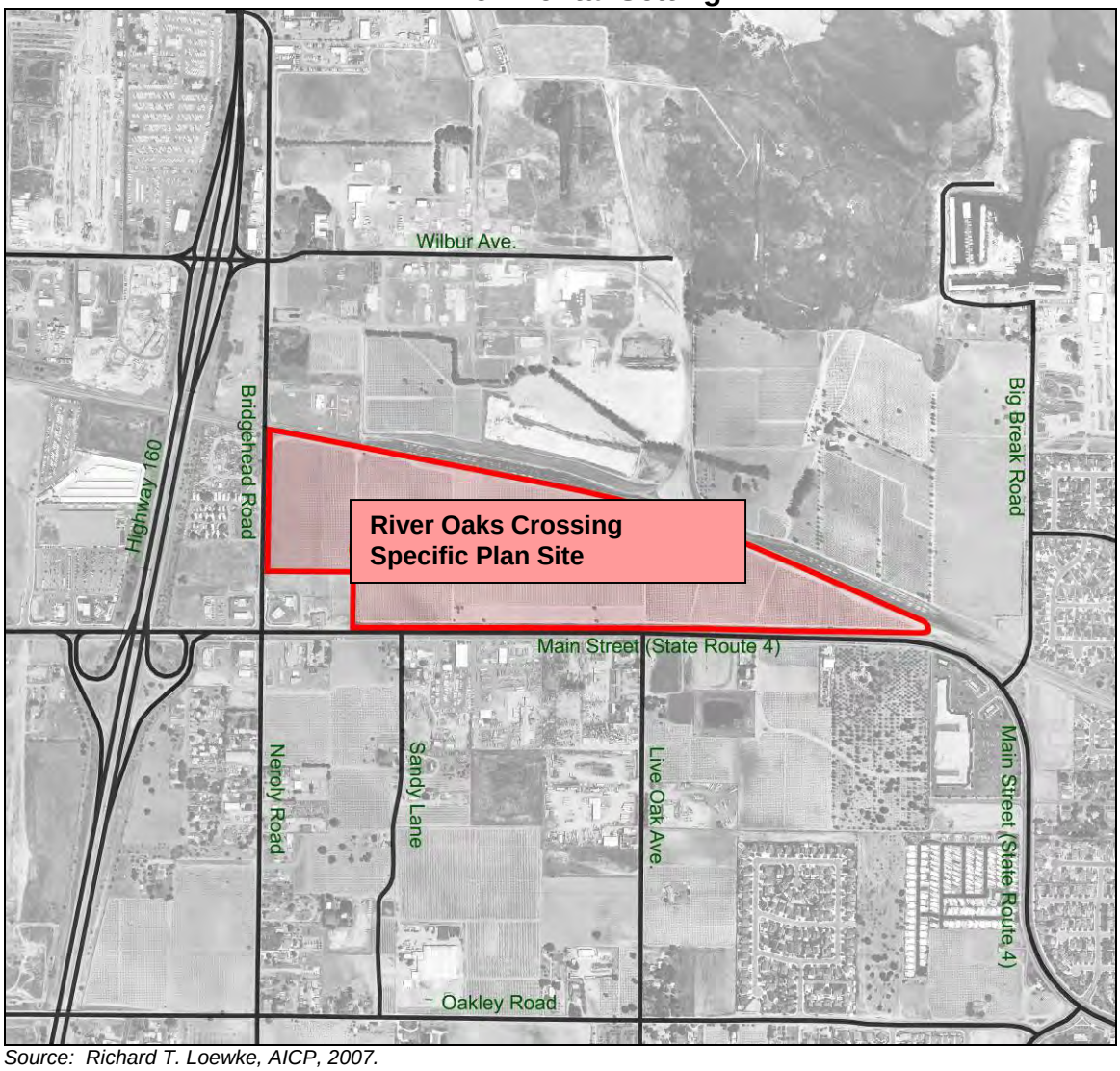
Situated along the entire northerly Project site boundary, the railroad operations include switching tracks and spur lines which extend further north into the adjoining DuPont Property, and form a substantial physical barrier to the movement of vehicles and animals. As is visible in Figure 2-2, a wide range of established and developing commercial uses occurs along the adjoining frontages of Main Street and Bridgehead Road. West of Bridgehead Road, fast food uses and a hotel exist on the north side of Main Street, with additional fast food and gas station uses to the south.

Figure 2-1
Regional Location Map



Source: Oakley 2020 General Plan, 2002.

Figure 2-2
Environmental Setting

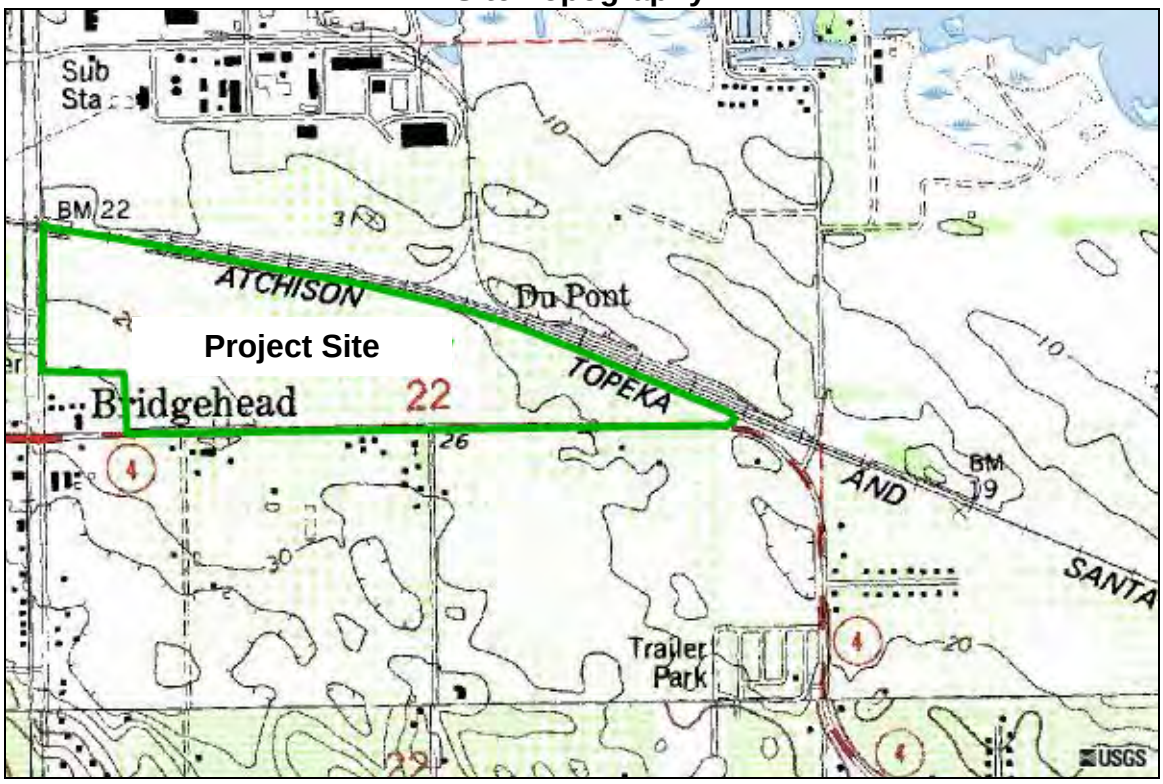


Source: Richard T. Loewke, AICP, 2007.

Figure 2-3
Project Location Map

Source: Fehr & Peers Associates, 2007.

Figure 2-4
Site Topography



Source: U.S. Geological Survey, 2007.

Figure 2-5
Site View Looking West along Main Street at Big Break Road

Source: Richard T. Loewke, AICP, 2007.

Figure 2-6
Site View Looking Northwest from East End of Project Area

Source: Richard T. Loewke, AICP, 2007.

Figure 2-7
Site View Looking East from Bridgehead Road

Source: Richard T. Loewke, AICP, 2007.

In addition to the commercial grape vines which cover in excess of 95 percent of the Project site, a number of native and non-native trees have been inventoried as occurring along the Bridgehead Road and Main Street frontages of the Project site. The trees and their status with respect to standards identified in the Oakley Zoning Ordinance are identified in Chapter 3.4. Creeks, drainages, and wetland features were not observed on the site and, as further discussed in Chapter 3.4, riparian or other designated special-status plant communities do not occur on or adjoining this 76.4-acre site.

Opposite the Project site along Main Street are a mix of existing commercial land uses that pre-date City incorporation and current zoning standards. An existing salvage yard extends east from Neroly Road on the south side of Main Street opposite the Project site (See Figure 2-9). These commercial uses include outdoor storage and business operations, with little frontage landscaping visible from Main Street. Further to the east along the south frontage of Main Street are additional vacant and under-developed properties planned for commercial use under the Oakley 2020 General Plan. Visible in Figure 2-8 is the section of Main Street west of Bridgehead Road and the Project site. Fast food and hotel uses exist on the north side of the street, with additional fast food and gas station uses to the south.

Further to the east along the south frontage of Main Street are additional vacant and under-developed properties planned for commercial use under the Oakley 2020 General Plan (See Figures 2-10 and 2-13). Figure 2-11 shows a recently completed commercial development on the south side of Main Street near the easterly end of the Project site. This development includes a range of smaller retail and service uses, along with a commercial self-storage use (to the rear). Building forms include modulated store entrances within a linear structure punctuated by taller accent elements at both ends.

Looking south along Bridgehead Road along the frontage of the Specific Plan Project site is the currently signalized intersection at Main Street (See Figure 2-12). Existing land uses to the west of the Specific Plan site include a service station, fast-food restaurant, and hotel.

Figure 2-8
View West Along Main Street to Hwy 160

Source: Richard T. Loewke, AICP, 2007.

Figure 2-9
View South Across Main Street

Source: Richard T. Loewke, AICP, 2007.

Figure 2-10
View South Across Main Street

Source: Richard T. Loewke, AICP, 2007.

Figure 2-11
Retail Center South of Main Street Opposite East End of Project Site

Source: Richard T. Loewke, AICP, 2007.

Figure 2-12
View South Along Bridgehead Road toward Main Street

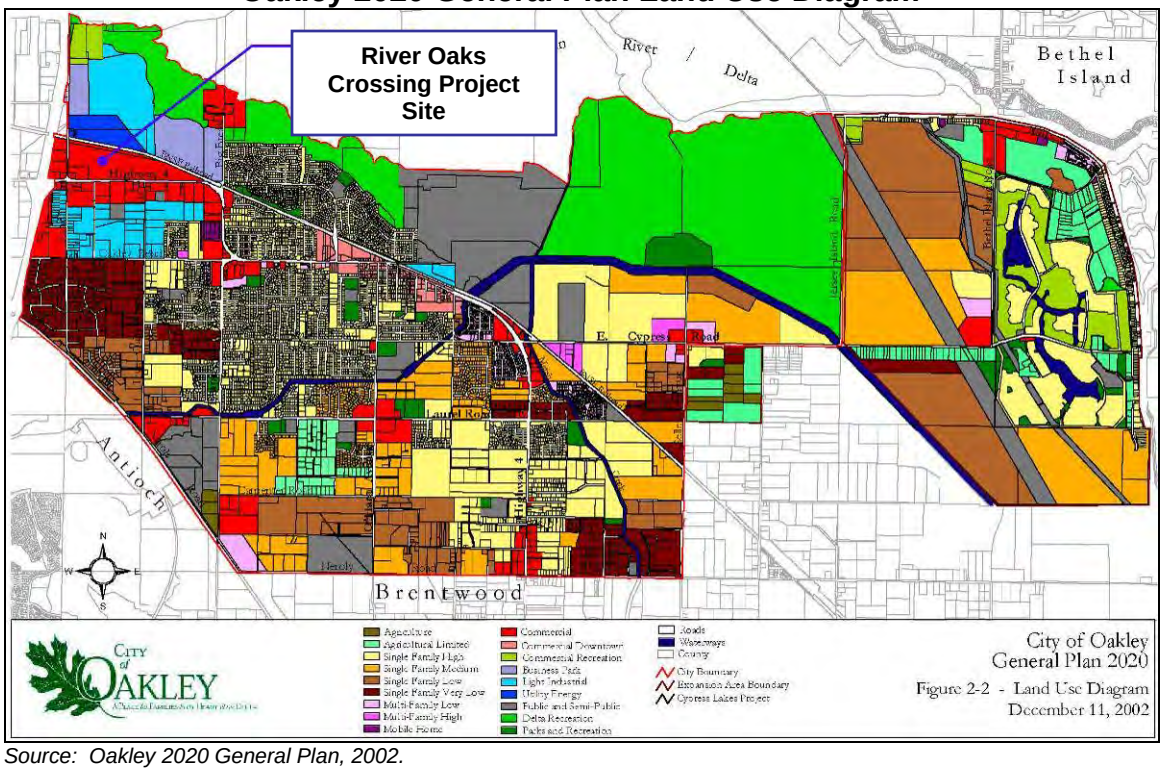
Source: Richard T. Loewke, AICP, 2007.

A residential mobile home park and an open commercial storage use, both substantially pre-dating City incorporation, currently occupy the properties north of the railroad tracks, along the west side of Bridgehead Road.

A gasoline station and convenience food store occupy the northeast corner of Bridgehead Road and Main Street. Situated between this corner and the Project site is a 4.46-acre site for which the City has approved a minor subdivision application (MS 98-0016) to create four separate commercial parcels. Approved uses within the currently developing commercial subdivision include a restaurant, car wash, and motel. A drive-through coffee bar exists along the Main Street frontage of this adjoining site. Recent entitlements for this site provided for relocation of the coffee bar use to its current location, in order to accommodate

the restaurant pad. These adjoining properties are also classified for Commercial use under the General Plan, as shown in Figure 2-13.

Figure 2-13
Oakley 2020 General Plan Land Use Diagram



Source: Oakley 2020 General Plan, 2002.

Additional vacant and under-developed properties extend along the west side of Bridgehead Road, north of the BNSF railroad line (See Figure 2-14). This section of land between the railroad tracks and Wilbur Avenue (situated between Bridgehead Road and Highway 160) is situated within the City of Antioch and is planned for Light Industrial uses. The Delta Diablo Sanitary District currently operates a pumping station within a portion of this property in the City of Antioch.

Visible in Figure 2-15 is the existing intersection of Bridgehead Road and Wilbur Avenue with the ramps to and from north-bound Highway 160 visible. This intersection and the adjoining Highway 160 ramps currently carry a limited amount of traffic from existing Oakley and adjoining Antioch industrial areas.

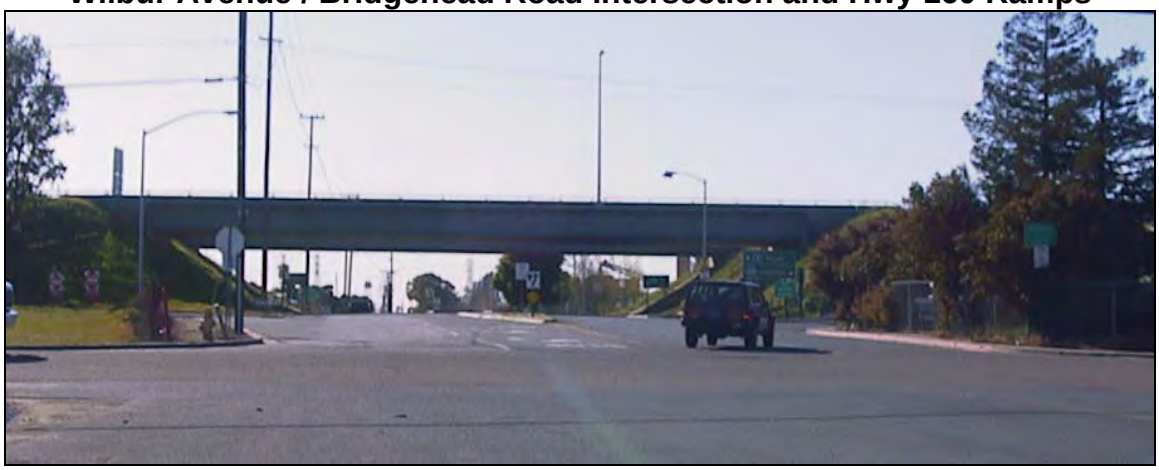
North of the railroad line are vacant properties owned by the DuPont Chemical Company, along with additional privately owned properties cultivated with grapes (as shown in Figure 2-16). These adjacent properties are collectively zoned for Heavy Industrial use, and extend from Bridgehead Road on the west to Big Break Road on the east. As shown in Figure 2-13, these properties are classified in the General Plan Land Use Element for Industrial, Business Park and

Utility/Energy uses. The property owner has indicated that it will prepare and submit plans for development of these properties in the near future.

Figure 2-14
View South Along Bridgehead Road at Railroad Crossing

Source: Richard T. Loewke, AICP, 2007.

Figure 2-15
Wilbur Avenue / Bridgehead Road Intersection and Hwy 160 Ramps



Source: Richard T. Loewke, AICP, 2007.

Summary of Specific Plan Project

The River Oaks Crossing Specific Plan focuses on a 76.4-acre site situated on the north side of Main Street, east of Bridgehead Road, and south of the BNSF Railroad line. The Project site is currently zoned for Heavy Industrial (HI) and is designated for commercial development by the General Plan. As shown in Figure 2-2, the Project site is situated at the westerly entrance to the City of Oakley from Main Street, adjoining Highway 160. As shown in Figure 2-18, the Antioch/Oakley boundary is situated along Highway 160, approximately 1,000 feet to the west of the Project site. The Brentwood/Oakley boundary is situated along Neroly Road, approximately three miles to the south of the Project site.

Figure 2-16
View North from Project Site

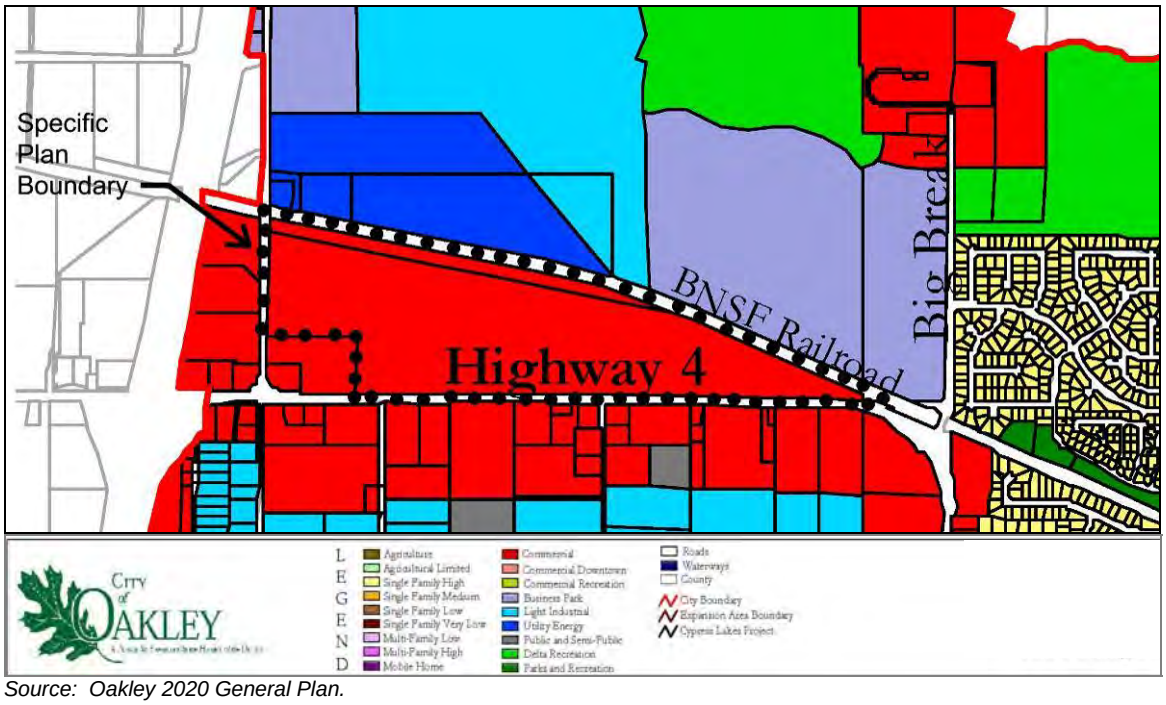
Source: Richard T. Loewke, AICP, 2007.

The Project site is classified as "Commercial" on the General Plan Land Use Diagram, with Commercial classifications to the south and west, and "Utility" and "Industrial" classifications generally to the North and East (See Figures 2-13 and 2-17). The site is also identified in the Land Use Element of the Oakley 2020 General Plan as part of the Northwest Oakley Special Planning Area, which encompasses approximately 972 acres of land located generally north of existing Oakley Road and generally bounded by Big Break Road to the east, Highway 160 to the west and the Delta along the north. The General Plan envisions this area developing as major employment center, with the Project site along Main Street designated for "Commercial" uses. Finally, the Project site is also within the Oakley Redevelopment Project Area. Preparation of the Specific Plan was authorized by the City of Oakley / Redevelopment Agency in 2003, in accordance with existing General Plan land use classifications and policies in order to fulfill the project objectives as listed in Section 1.2.

The Project site, as well as adjoining properties north of the railroad right-of-way and those fronting on the west side of Bridgehead Road, are all currently zoned Heavy Industry ("HI"). Single-Family Residential ("R-6") zoning currently applies to property on the north side of Main Street east of the Project site, and Planned Unit Development ("P-1") zoning currently applies to property to the south of Main Street. Additional property located southwest of Main Street and Neroly Road is zoned Light Industry ("LI"). The Specific Plan Project would result in the establishment of "SP-2" Zoning on the 76.4-acre Project site.

The purpose of the Specific Plan is to serve as a key implementation step in the planning process, following previously adopted policy direction from the Oakley 2020 General Plan. The Specific Plan establishes detailed land use and development policy for the entire Project site, and directs the remaining steps to be followed in the entitlement process before construction can begin. As provided for in Sections 65450-65457 of the California Government Code, following adoption of the Oakley 2020 General Plan, the City Council and Redevelopment

Figure 2-17
Oakley 2020 General Plan Land Uses for Project Site



Source: Oakley 2020 General Plan.

Agency called for preparation of a specific plan to provide for the systematic implementation of General Plan policies, programs and maps affecting the River Oaks Crossing Property. The Specific Plan includes a Development Plan, and applicable policies to implement and supplement the Plan. These policies provide for the location and improvement of commercial land uses, and for supporting infrastructure and services. The Specific Plan includes a set of development standards and design guidelines to establish a common architectural theme and to coordinate the placement of buildings on the property. If designed to be consistent with this Specific Plan, future commercial building projects would be processed by the City through individual Architectural Review applications that would include review of plans. This EIR provides project level analysis of all future development on the site that is consistent with the Specific Plan. It is anticipated that no further environmental review will be required for such consistent development applications.

A range of initial land use concepts were developed in the planning process, and reviewed by the City / Redevelopment Agency at a series of public workshop meetings held on December 8, 2003, April 26, 2004 and October 22, 2005. These initial concepts were refined through further technical analysis, and through additional comments received during the scoping meeting for the environmental review process held on November 12, 2003. The land use plan was again refined in 2006 through input from City staff and property owners, and after focused technical studies completed as part of the environmental impact analysis.

The Specific Plan provides for commercial development of the 76.4-acre Project site, including clearing, grading, utility and site improvements, development and ongoing operation of up to 770,000 square feet including retail, restaurant, and potentially hotel uses. This physical development would be based on the Development Plan alternatives (A and B) shown in Figures 2-18 and 2-19, and Tables 2-1 and 2-2. The phased development and land use program called for under the Specific Plan includes the following major components, which would be completed over a period of 5-10 years:

Major Retail Envelopes

Accommodation of 3-4 principal building sites for Major Retail uses, including: (a) a large-format discount store of up to 120,000 square feet (Major Pad A); (b) a 24-hour discount supercenter use of up to 230,000 square feet, providing sales of garden (indoor and outdoor), tire, groceries, alcohol, and other merchandise, including a medical clinic (Major Pad B); and (c) a home improvement superstore of up to 170,000 square feet (Major Pad C). A fourth Major Retail use may be accommodated by re-distributing the square footage within Major Pads A, B and C. The maximum aggregate floor area approved for Major Retail Uses, as shown in Table SP 1-1, is 520,000 square feet.

Secondary Retail Envelopes

Secondary Retail and service uses, including shops, restaurants, and an optional hotel use accommodating up to 100 rooms (40,000 square feet), strategically distributed over the site, providing for a total maximum of 250,000 square feet. The building forms depicted in Development Plan A are illustrative; smaller buildings may be aggregated and re-distributed, as provided for in Section 7.3 of the Specific Plan.

Approved Building Square Footage

Combined retail uses totaling a maximum of 770,000 square feet, with an overall floor area ratio (FAR) of approximately 0.23. As discussed in Section 3, Development Plan A reflects 690,000 square feet of aggregate commercial uses, along with a corresponding balanced parking and circulation design. The

acceptable range of aggregate building area for the Specific Plan site is from 630,000 to 770,000 square feet, as shown in Table 1-1 in the River Oaks Crossing Specific Plan.

Circulation Improvements

Internal circulation, parking, and project entry improvements, reflected in Development Plan A are designed to accommodate overall project needs, while coordinating with anticipated traffic growth and improvements to Bridgehead Road and Main Street. As outlined in Section 4, transportation system improvements include new signal lights at five locations within or fronting the site, including: (a) the Bridgehead Road entrance; (b) the new intersection to be created opposite Sandy Lane; (c) the Main Street project entrance located mid-block between Sandy Lane and Live Oak Avenue; (d) the Main Street project entrance located to the east of Live Oak Avenue; and (e) an internal intersection located north of Main Street on Live Oak Avenue (subject to future extension of Live Oak Avenue north into the DuPont Property). In addition, the Project will provide modifications to the Main Street / Live Oak Avenue intersection which the City is currently in the process of signalizing, and will also contribute to modifications planned for a number of other signal lights and intersection improvements, including the signal light at Main Street and Bridgehead / Neroly Road.

Live Oak Avenue Extension

An extension of Live Oak Avenue is planned as part of the Specific Plan, consistent with policies reflected in the Oakley 2020 General Plan. Live Oak Avenue will extend north from the new Main Street intersection, and connect with the principal east-west Project driveway at a new intersection. Development Plan A reflects a northerly continuation of Live Oak with a future elevated over-crossing of the adjoining railroad tracks, to provide for access through the DuPont Property to the north of the specific plan site. Alternative Development Plan B addresses the internal circulation, parking and building opportunities to be considered for the River Oaks Crossing Property, in the event that Live Oak Avenue is not extended north into the DuPont Property. This alternative is intended exclusively to address internal site planning issues, and may only be implemented if it is subsequently determined through a General Plan-level analysis that the extension of Live Oak Avenue is not necessary. Signalization of the internal Project driveway intersection at Live Oak Avenue is only needed at such time as Live Oak Avenue is extended north into the DuPont Property.

Purpose of Alternative Development Plan B

Any amendments to the Oakley 2020 General Plan that eliminate the extension of Live Oak Avenue north from Main Street over the railroad tracks shall automatically permit implementation of Alternative Development Plan B. While

eliminating the elevated extension of Live Oak Avenue over the tracks may provide additional space for Secondary Retail pads, in no event shall the total floor area of development in the Specific Plan area exceed 770,000 square feet.

Site Improvements and Development Standards

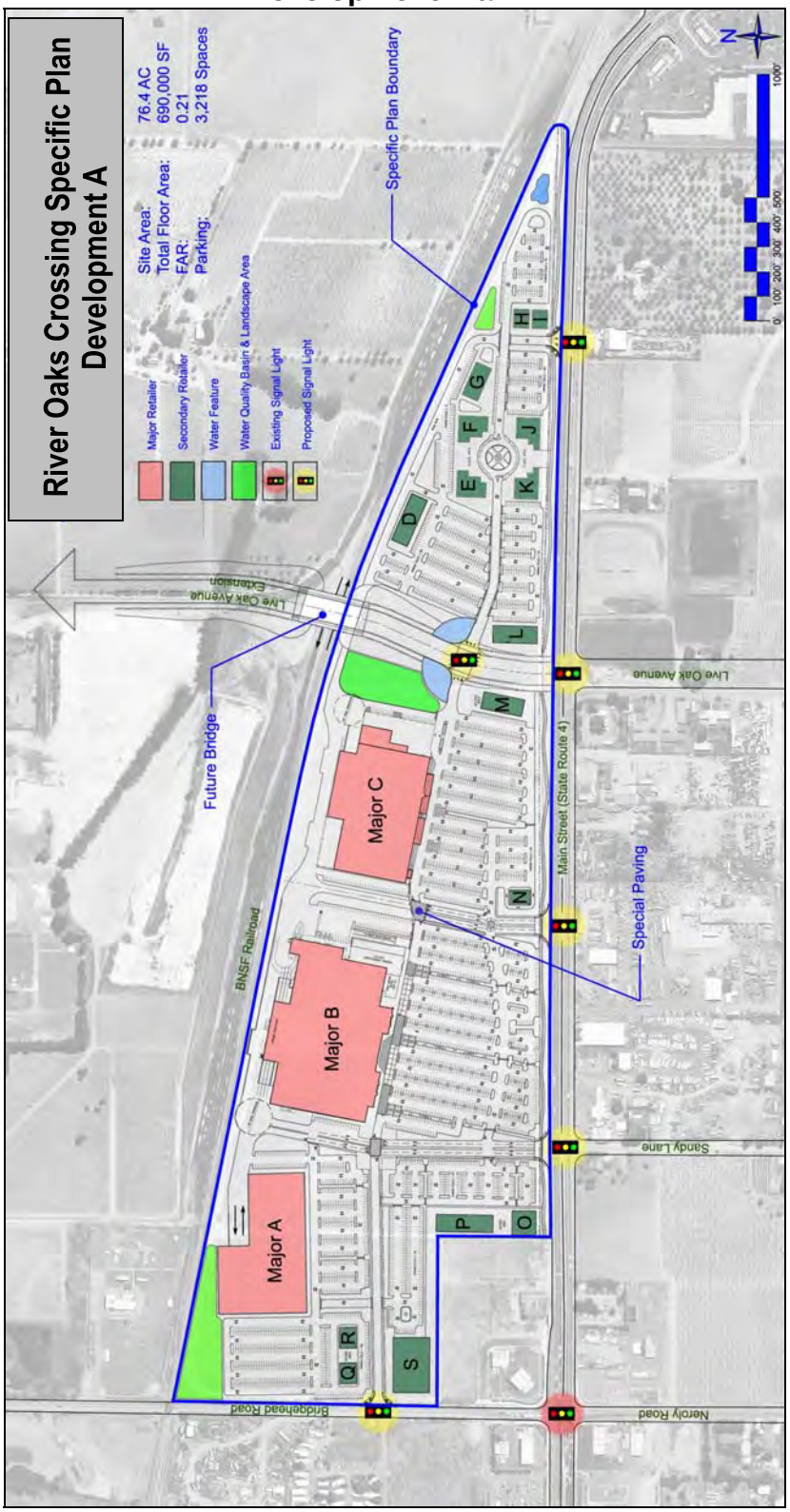
The Specific Plan identifies planned on- and off-site improvements, and establishes development standards and design guidelines providing for a range of features, including public plazas and water-features, placement and design of future retail buildings, separated access and screening of primary truck loading facilities, facility maintenance, and development phasing. These Standards also include provisions for energy conservation and waste reduction.

Approved Land Uses

The uses diagrammed in Development Plans A and B (Figures 2-18 and 2-19) are further summarized in Tables 2-1 and 2-2, the Summary of Specific Plan Land Use Alternatives. A range of land use alternatives was considered for the Project. Development Plans A and B represent a balanced parking and circulation design, which distributes both Major and Secondary Retail uses in an arrangement which is responsive to the policies advanced in the Specific Plan and espoused in the Oakley 2020 General Plan. This approved design is intended to retain the flexibility to accommodate aggregate building area increases or reductions, consistent with Figures 2-18 and 2-19. Development Plans A and B also incorporate several site planning options, and all uses listed as Permitted Uses under Section 9.1.504(b) of the Oakley Municipal Code (Retail Business), together with the following additional uses, all subject to the standards and square footage limitations provided for in Section 6 of the Specific Plan:

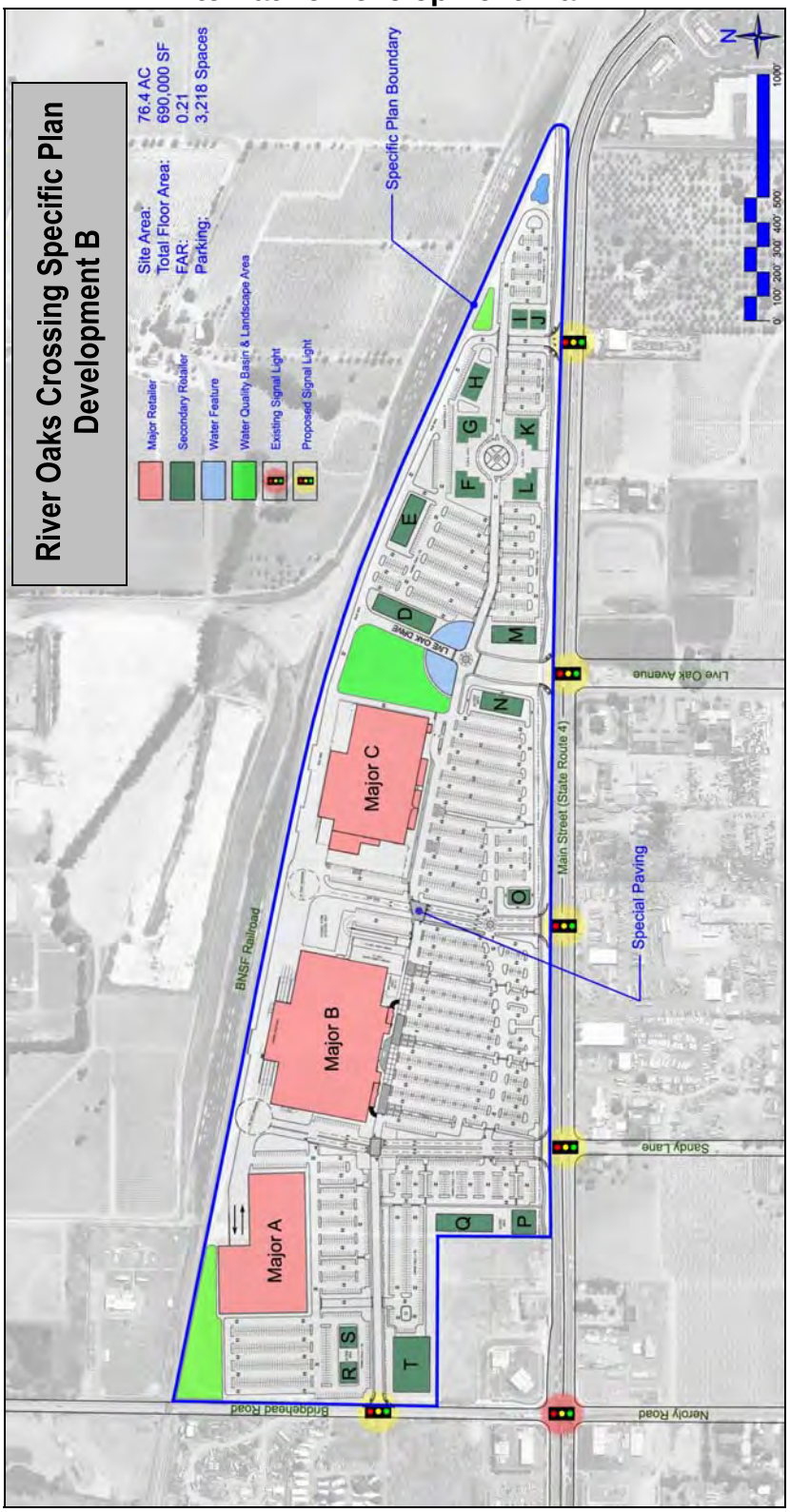
- A hotel use of up to 100 rooms;
- Major appliance sales;
- Department store uses;
- Building materials and hardware sales;
- Tire sales and service uses;
- Supercenter uses (i.e., large scale retailers that combine grocery sales with general merchandise sales and other permitted uses, including but not limited to, indoor/outdoor garden centers, alcohol sales, medical clinics, drive-thru uses, 24-hour operations, pharmacies, and temporary seasonal sales); and
- Additional non-residential uses of a compatible nature which may be approved by conditional use permit as provided for in Section 9.1.504(c).

Figure 2-18
Development Plan A



Source: City of Oakley Draft River Oaks Crossing Specific Plan, May 2007.

Figure 2-19
Alternative Development Plan B



Source: City of Oakley Draft River Oaks Crossing Specific Plan, May 2007.

Table 2-1
Summary of Specific Plan Land Uses

	Development Plan A[1]		Alternative 1 (Higher Intensity)		Alternative 2 (Lower Intensity)	
Land Uses[2]						
Major Retailers[3]						
	A	120,000	A	120,000	A	100,000
	B	230,000	B	230,000	B	230,000
	C	170,000	C	170,000	C	170,000
Subtotal Major Retailers		520,000		520,000		500,000
Secondary Retailers[4]						
	D	25,000	D	90,000	D	5,000
	E	12,000	E	12,000	E	9,000
	F	12,000	F	12,000	F	9,000
	G	9,000	G	9,000	G	7,000
	H	4,000	H	4,000	H	4,000
	I	4,000	I	4,000	I	4,000
	J	8,000	J	8,000	J	6,000
	K	8,000	K	8,000	K	6,000
	L	10,000	L	10,000	L	8,000
	M	10,000	M	13,000	M	8,000
	N	5,000	N	10,000	N	4,000
	O	7,000	O	10,000	O	4,000
	P	16,000	P	20,000	P	8,000
	Q	5,000	Q	5,000	Q	4,000
	R	5,000	R	5,000	R	4,000
Subtotal Secondary Retailers		140,000		220,000		90,000
Hotel[5]	S	30,000	S	30,000	S	40,000
Total Floor Area		690,000		770,000		630,000
Floor Area Ratio (FAR)		0.21		0.23		0.19
Land Use Emphasis	Mixed Retailing		Expanded Secondary Retail Uses		Expanded Hotel & Restaurants	

Source: River Oaks Crossing Specific Plan, May 2007.

[1] As indicated in the Specific Plan, Development Plan A and Alternative Development Plan B are substantially similar in land use mix; Plan B is likely to result in a slightly more efficient land use pattern and minor increases in square footages, as a result of eliminating the Live Oak overpass. Both options are diagrammed approximately 690,000 s.f. in aggregate building area, and analyzed for CEQA purposes at the Higher Intensity level of 770,000 s.f. Section 7.4 of the Specific Plan outlines procedures for minor modifications to the approved Development Plan.

[2] All land uses are subject to Architectural Review, in accordance with Specific Plan Section 7.1. In addition, all land uses are subject to administrative verification of consistency with the approved Development Plan. Uses shall conform to the standards and list of approved uses as outlined in Specific Plan Section 3.4.

[3] See Specific Plan Section 3.3 for an explanation of Major and Secondary Retail land uses.

[4] The overall focus of retail and related uses within the River Oaks Crossing Specific Plan vary by alternative. The project objectives as described in Specific Plan Section 1 summarize the land use emphasis reflected in the Development Plan. The Draft EIR impact analyses are based on the maximum square footages shown in Alternative 1.

[5] Development Plan A as shown in Specific Plan Figure SP 1-1 includes an option for a hotel use of up to 75-100 rooms. This use is subject to certain restrictions and special mitigation measures as outlined in Specific Plan Section 3.3, and may be substituted for a similar amount of retail square footage or enlarged to 100 rooms as provided for in Alternative 2.

Table 2-2
Summary of Specific Plan Parking, Circulation, and Development Standards

	Development Plan	Alternative 1 (Higher Intensity)	Alternative 2 (Lower Intensity)
Total Gross Floor Area	690,000 SF	770,000 SF	630,000 SF
Parking [6]			
Retail uses (4.5 per 1,000 SF plus turn over factor)	3,119	3,497	2,788
Restaurant uses	Limited to 10% of GFA	Limited to 10% of GFA	Limited to 10% of GFA
Hotel [7]	99 Rooms	99 Rooms	132 Rooms
Required Parking Supply	3,218 spaces	3,595 spaces	2,920 spaces
Building Height Maximum [8]	40 feet	40 feet	40 feet
Floor Area Ratio (FAR) [9]	0.21	0.23	0.19
Setbacks to Public Streets [10]	20 feet	20 feet	20 feet
Live Oak Avenue Alignment	East Alignment with over-crossing of rail line using double span bridge	East Alignment with over-crossing of rail line using double span bridge	West Alignment with over-crossing of rail line using single span bridge
Signalized Intersections [11]	6	6	6

Source: River Oaks Crossing Specific Plan, May 2007.

[6] As outlined in Specific Plan Section 4, overall parking supply has been determined according to ITE standards based on 4.5 spaces per 1,000 gross square feet of retail space, plus 1.25 spaces per hotel room, with an additional minimum 5% vacancy rate for turn-over. This requirement exceeds the City Code minimum requirements outlined in Specific Plan Section 4.6.

[7] Specific Plan Table SP 1-1 indicates that a hotel use is included in each Alternative, with square footages ranging from 30,000 to 40,000 SF, and between 75 and 100 rooms. The alternatives all provide for optional retail space in lieu of the hotel use.

[8] Maximum retail building height may be varied for a hotel use of up to four floors, and for architectural features designed in accordance with Specific Plan Section 6.5, Policy e.14.

[9] According to the Specific Plan, Floor Area Ratio limitations assume one-story retail buildings and exempt hotel rooms on floors above the ground level. Two-story retail buildings may be considered as part of the Architectural Review process, subject to the prescribed FAR limitation, overall GFA, and building height limit.

[10] As outlined in Specific Plan Section 3.3, the Building Envelopes shall be consistent with the Development Plan. An average width of 25 feet is required for landscape planters.

[11] Intersection signal lights may be phased as indicated in Specific Plan Section 6.1. The "future signal" located at the easterly project entrance may be deferred until such time as development occurs on the south side of Main Street at this location. See Specific Plan Section 4 for further details.

Actions and Approvals Required

Lead Agency Actions

As Lead Agency, the City of Oakley will be responsible for certification of the Project EIR and approval of the Specific Plan Project. In addition, the City is expected to take action on a range of related implementation actions as listed below. All such actions will be subject to a finding of consistency with the adopted Specific Plan. As provided for in Section 7.4 of the Specific Plan, minor changes in Specific Plan development standards may be considered administratively by the City. Major changes in standards or inconsistencies with adopted policies brought about through consideration of future applications must be considered by the City/Agency as formal amendments to the Specific Plan. Implementation of the River Oaks Crossing Specific Plan Project would require the following actions by the Lead Agency (City of Oakley):

(1) *Certification of a Final Project EIR:* This action would take place pursuant to CEQA, based on comments and supplemental information provided to this Draft document.

(2) *Approval of Development Agreement:* Development Agreement(s) may be considered by the City and landowner or developer. Development Agreement(s) between the City and the landowner or developer are discretionary, and can be used to clarify responsibilities, financing, phasing of improvements, and other issues.

(3) *Adoption of Specific Plan:* The River Oaks Crossing Specific Plan must be formally adopted, following certification of the tiered Final Project EIR, in order to facilitate implementation of land uses and development standards as outlined in the Specific Plan.

(4) *Zoning Ordinance Amendment to Create the SP-2 District:* An amendment to the Municipal Code shall be prepared and adopted, concurrently with approval of the Specific Plan, to establish new Section 9.1.1005 “Specific Plan No. 2” (SP-2). The SP-2 District will require that all new development and land uses be consistent with the Specific Plan.

(5) *Rezoning:* Rezoning from current “Heavy Industrial” (HI) District to the Specific Plan No. 2 (SP-2) District to implement the Specific Plan. Rezoning to the SP-2 District shall take place concurrently with adoption of the Specific Plan Project, in order to provide for implementation of the Development Plan, and all policies and standards adopted as part of the Specific Plan.

(6) *Architectural Review:* No application for building permit may be applied for until the Planning Commission has first granted Architectural Review

approval for the proposed buildings and related improvements. The Commission's decision may be appealed to the City Council in accordance with Article 16 of the Municipal Code. Architectural Review approval shall be granted only upon adoption of a finding of consistency with Section 6 (Development Standards) of the Specific Plan. Applications shall include a complete set of preliminary building and landscape plans identifying all materials, colors, textures for each Principal and Secondary Retail building.

(7) *Subdivision:* The subject 76.4-acre site may not be subdivided without review and approval of a subdivision application and subsequent final or parcel map, in accordance with City Subdivision Ordinance and State Map Act requirements. Subdivision applications shall be reviewed for consistency with the Specific Plan. The subdivision application shall specifically address all Project phasing issues as discussed under Section 6.1 of this Specific Plan, and shall provide for the recordation of reciprocal cross easements to provide for shared use of parking, extension of utilities, and pedestrian and vehicular circulation throughout the entire site.

(8) *Construction Permit Review:* Encroachment permits, grading and building permits, and related construction permits may be issued by the City based on the approved Specific Plan and the foregoing related discretionary entitlements. Prior to issuance any such permits, applicants shall prepare and submit improvement plans to the City's Public Works and Engineering Division for review and approval. Improvement plans shall address all off-site and common on-site utility and circulation system improvements, including those required pursuant to assigned mitigation requirements under the certified project-level EIR. In addition, each such construction permit shall be subject to a determination by the Community Development Director of consistency with the approved Development Plan and Development Standards contained in the Specific Plan.

(9) *Project Maintenance Program:* As part of the Architectural Review for the first Major tenant the applicant shall submit a master Project Maintenance Program (PMP), to assure that all landscaping, water elements, pavement areas, buildings, mechanical systems, and other site and building improvements are properly cared for and will retain a high-quality appearance and proper operation. The PMP will include plans for maintenance of all building(s) and site improvements throughout the life of the Project. The PMP for each of the Major Retail pads may include provisions acceptable to the Community Development Director that address reuse of the building(s) in the event that the building(s) becomes vacant. The City may collect a Letter of Credit in an amount acceptable to the City Attorney, but not to exceed $25,000 per

pad, from each of the Major Retail pads to guarantee adherence to the standards for maintenance and reuse as called for in the PMP. The City may draw upon these funds only in the event of violation of the PMP. This requirement will help to assure long-term compliance with a range of aesthetic, acoustical, land use, water quality and other mitigation measures from the Project EIR.

(10) *Environmental Review:* The foregoing applications shall include detailed information relating to the size of buildings, proposed uses, and other physical and operational factors, as identified in the City's CEQA Checklist review form. The Project's effects on the environment will be administratively evaluated in relationship to this Specific Plan and the corresponding certified project-level EIR. If found to be consistent with the Specific Plan and its EIR, no further environmental review shall be required for the application. Each such Checklist review shall specifically include assignment of applicable mitigation requirements from the Mitigation Monitoring Plan (MMP) prepared with the Final EIR.

Responsible Agency Actions

A Responsible Agency is a public agency other than the Lead Agency that has responsibility for carrying out or approving a project and complying with CEQA (Guidelines sections 15041(b), 15042, 15096 and 15381).

(1) *California Regional Water Quality Control Board:* Issuance of Stormwater Discharge Permit for water quality certification under the National Pollutant Discharge Elimination System permit.

(2) *Diablo Water District (DWD):* Approval of water delivery system improvement plans and water meter connection permits, consistent with the Water Supply Assessment included in Appendix J and the District's Master Plan.

(3) *Ironhouse Sanitary District (ISD):* Issuance of permits to connect to district facilities based on applicable rules and policies.

(4) *California Department of Transportation (CALTRANS):* Issuance of encroachment permits.

Trustee Agency Actions

Trustee Agencies have jurisdiction by law over certain natural resources affected by a project that are held in trust for the people of California (Guidelines section 15386).

(1) *The California Department of Fish and Game (CDFG):* CDFG is the only potential trustee agency for this Project. No jurisdictional habitat has

been identified within or adjoining the Project boundary. The protection of certain potentially occurring special status species is a responsibility of CDFG, which may need to authorize and review certain study protocols.

Agencies with Jurisdiction by Law

In addition to contacting all Responsible and Trustee Agencies, the Lead Agency, when preparing an EIR, must consult with, and seek comments from every public agency that has jurisdiction by law with respect to the project; each city or county that borders on a city or county within which the project is located; and federal, state, and local agencies that exercise authority over resources that may be affected by the project (Guideline section 15086). These agencies include:

(1) *California Department of Transportation:* Issuance of encroachment permits and related actions associated with anticipated frontage improvements along existing State Route 4.

(2) *East Contra Costa Fire Protection District (ECCFPD):* Review of improvement plans and construction documents to verify compliance with access and fire suppression requirements.

(3) *Contra Costa County Flood Control and Water Conservation District (CCCFCWCD):* Issuance of connection permits and possible modifications to the existing storm drain trunk line (DA 29H) and easement which crosses the easterly end of the site.

(4) *City of Antioch:* Antioch is a city that borders the City of Oakley, in which the Project site is located.

(5) *City of Brentwood:* Brentwood is a city that borders the City of Oakley, in which the Project site is located.

(6) *Department of Toxic Substance Control (DTSC) and Environmental Protection Agency (EPA):* Approval of the proper removal and/or relocation of existing groundwater monitoring wells on the Project site.

(7) *Delta Protection Commission:* The City of Oakley is within the Secondary Delta Protection Zone.

(8) *Public Utilities Commission (PUC):* For site review regarding the proposed Project's proximity to the existing BNSF railroad tracks.

(9) *Contra Costa County (CCC):* Contra Costa County includes all the unincorporated lands that border the City of Oakley, in which the Project site is located.

Relationship of General Plan, Zoning, and Redevelopment Area Plan

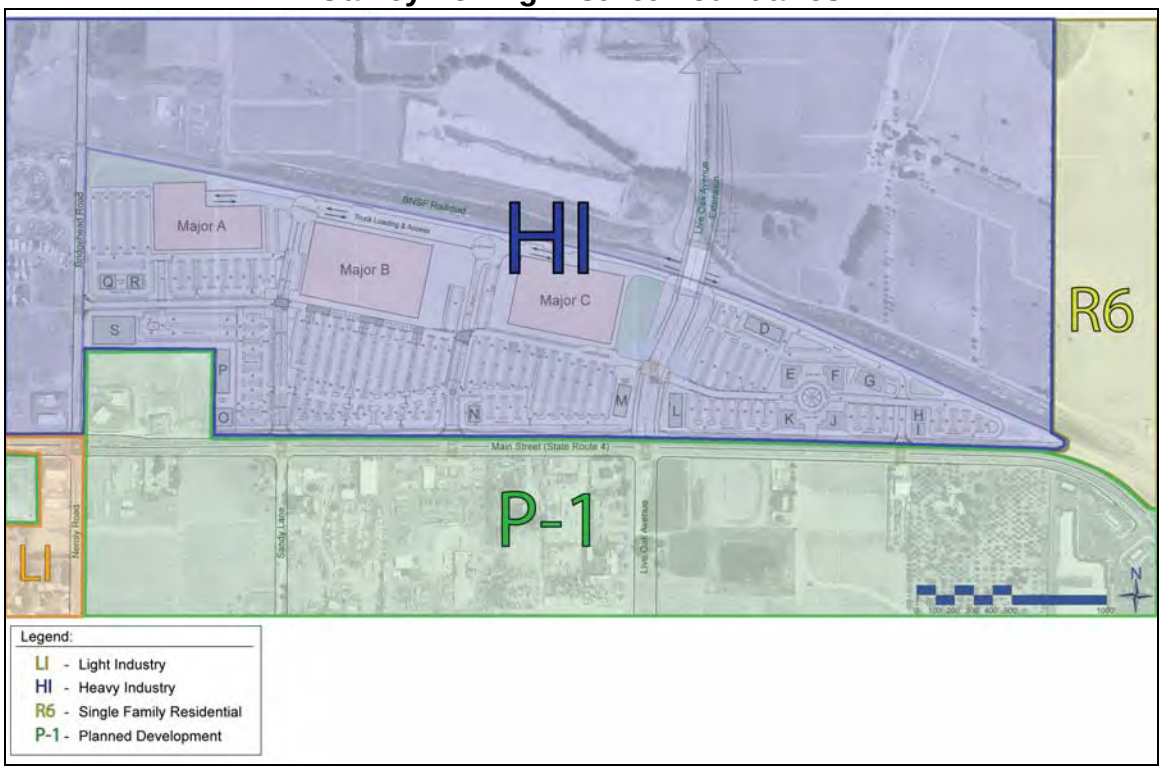
The City of Oakley adopted its first comprehensive General Plan in December of 2002. The new General Plan covers the time horizon of 2002 through 2020. This action was supported by certification of a comprehensive program-level EIR (SCH No. 2002042134). The adopted Oakley 2020 General Plan is shown in Figure 2-13. Both the General Plan and its supporting EIR anticipated development of the 76.4-acre River Oaks Crossing Specific Plan area with "Commercial" land uses. The current "Heavy Industrial" zoning will be amended as part of the Specific Plan process to SP-2. As noted above, an Architectural Review application will be processed by the City in conjunction with all future individual development projects on the site. These applications must be consistent with the adopted Specific Plan in order to qualify for processing.

Figure 2-17 provides an enlarged view of the current General Plan land use designations on the Project site and adjoining sites. The "Commercial" land use designation applies both to the Specific Plan Project area and other properties to the south (across Main Street), and to the west (across Bridgehead Road). Surrounding this commercial core are additional properties classified for "Utility Energy", "Business Park" and "Light Industrial" uses. These classifications apply to the former DuPont Chemical Plant property situated to the north of the railroad tracks, as well as and to properties extending between the frontage of Main Street and Oakley Road on the south. Highway 160 forms the City's westerly boundary with Antioch, and Big Break Road forms the easterly edge of the Specific Plan Project area. Existing residential uses located further to the east of the Project area and west of Bridgehead Road have been taken into consideration in the Noise and Traffic analyses, and specific mitigation measures have been incorporated into this Draft EIR in order to avoid potentially significant impacts to these uses.

Figure 2-20 identifies the current Zoning District boundaries on and directly adjoining the Project site. The site, as well as adjoining properties north of the railroad right-of-way and those fronting on the west side of Bridgehead Road, are all currently zoned Heavy Industry ("HI"). Single-Family Residential ("R-6") zoning currently applies to property on the north side of Main Street east of the Project site, and Planned Unit Development ("P-1") zoning currently applies to property to the south of Main Street. Additional property located southwest of Main Street and Neroly Road is zoned Light Industry ("LI"). The Specific Plan Project would result in the establishment of "SP-2" Zoning on the 76.4-acre Project site.

The Specific Plan serves the function of providing detailed guidelines for development of the Project site with land uses and according to development standards that are consistent with overall policy direction provided through the General Plan. In this context, the Specific Plan provides for implementation of General Plan policies at a coordinated and focused project level.

Figure 2-20
Oakley Zoning District Boundaries

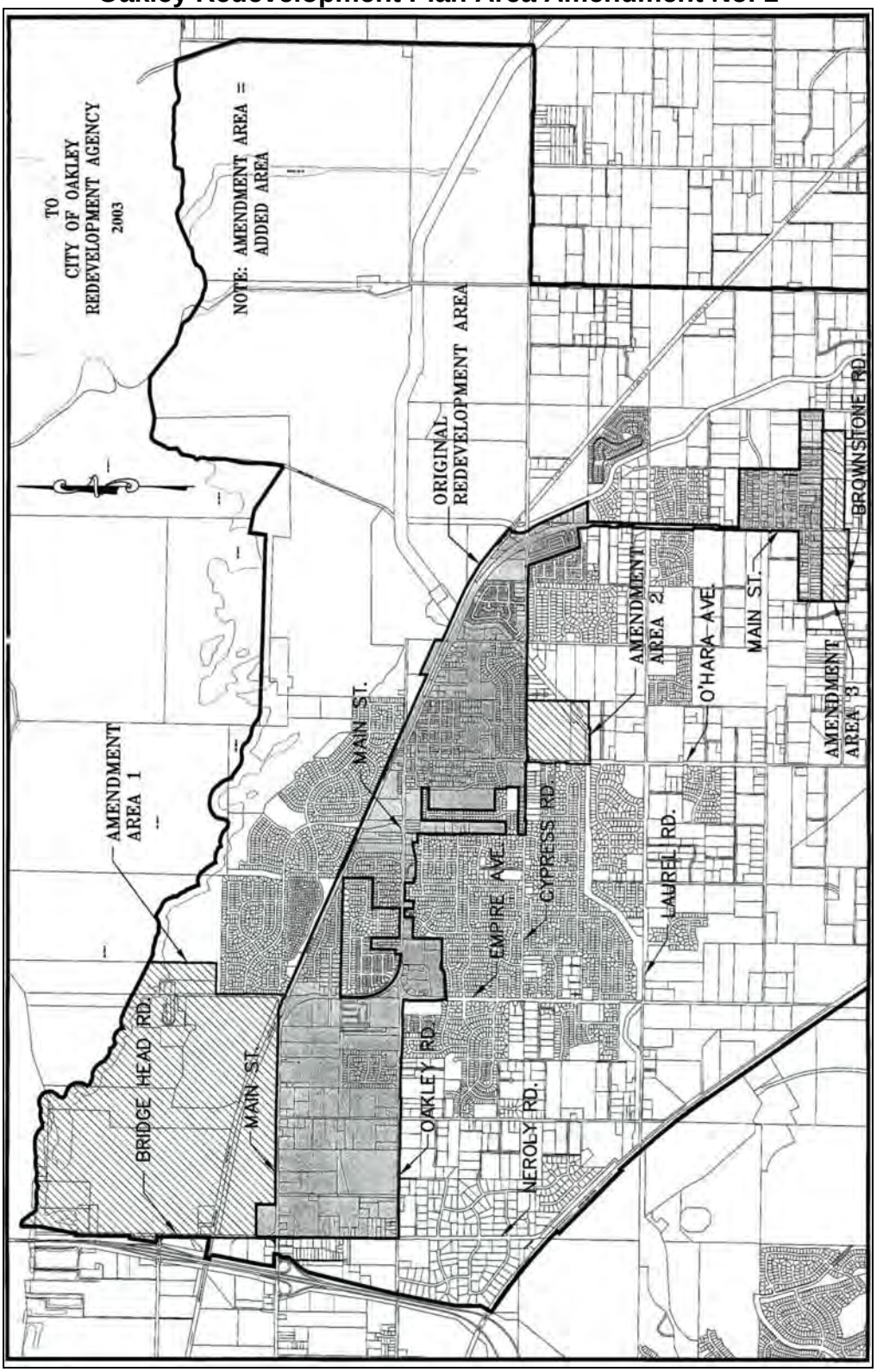


Source: Oakley Community Development Department and Richard T. Loewke, AICP.

The 76.4-acre Specific Plan site was added to the Oakley Redevelopment Area in 2001, as part of Amendment No. 1. As shown in Figure 2-21, the Amendment No. 1 boundaries extended north beyond the Specific Plan site, to also include the Cline Vineyards (northeast of the Specific Plan site) and the DuPont Property (north of the Specific Plan site and west of the Cline Vineyards). Consideration of Amendment No. 1 included review of overall economic development policies for the community, in relationship to agricultural resources. As discussed in the Project Draft EIR, the adopted amendment included direction for preservation of 15 acres of vineyard northeast of the Specific Plan boundary, on a portion of the Cline Vineyards.

Policies adopted for implementation of the Redevelopment Plan call for development of the 76.4-acre Specific Plan site with commercial uses. These policies are reflected in the current Oakley 2020 General Plan land use classification for the Specific Plan site.

Figure 2-21
Oakley Redevelopment Plan Area Amendment No. 1



Source: Oakley Community Development Department.

3.0 INTRODUCTION TO THE ANALYSIS

This chapter describes the existing conditions/environmental setting before Project implementation (as of the date of the NOP), provides the regulatory setting including relevant planning policies, identifies the thresholds of significance, and evaluates the potential impacts that would result from the proposed Project. In addition, this chapter makes recommendations for mitigation of identified impacts of the proposed Project that would eliminate or reduce potentially significant environmental impacts, identifies the level of significance of the mitigation, discusses responsibility and monitoring, and evaluates cumulative impacts.

3.1 LAND USE AND PLANNING (LU)

The land use impact analysis describes the existing land use setting of the River Oaks Crossing Specific Plan Project site and the adjacent area, including the identification of existing land uses and current General Plan policies and zoning designations. The proposed Project is analyzed for consistency with existing City of Oakley policies and compatibility with surrounding land uses.

Environmental Setting

As described in Chapter 2, the Specific Plan Project contemplates a comprehensive commercial development program for the 76.4-acre site, which would result in development of up to 770,000 GFA of retail, restaurant, and 24-hour supercenter uses. The proposed Project would result in development of the site, in accordance with the Land Use program presented in Specific Plan Section 3, based on Development Standards as presented in Specific Plan Section 6. These proposed land uses and prescribed development standards are summarized in Figures 2-18 and 2-19, and Tables 2-1 and 2-2, and are consistent with the General Plan "Commercial" Land Use designation and accompanying Land Use policies, programs and maps. The following analysis therefore tiers from the analysis presented in the General Plan EIR, and requires that all applicable program-level mitigation measures also be applied to the proposed Project.

Existing Land Use

On-Site

The Project site extends east from Bridgehead Road nearly one mile, and is bordered along its entire northerly property line by the Burlington Northern & Santa Fe (BNSF) Railroad line. The site has a triangular shape, with increasing site depth moving from east (Big Break Road end) to west (Bridgehead Road end). Buildings or other structures do not currently exist on the site and the primary land use on the proposed Project site is grape cultivation, which currently covers approximately 95 percent of the site.

Surrounding Land Uses

Land on-site is dominated by a vineyard, which is bordered on all sides by a dirt road. Surrounding land uses include the Burlington Northern/Santa Fe Railroad to the north, beyond which lie the former DuPont Chemical Plant and rural/agricultural properties. A residential mobile home park and an open commercial storage use currently occupy the properties north of the railroad tracks, along the west side of Bridgehead Road. The southwest corner of Bridgehead Road and Main Street, adjoining the site is commercially developed,

with an Arco station and a Caffino café stand. West of Bridgehead Road, fast food uses and a hotel exist on the north side of Main Street, with additional fast food and gas station uses to the south. An existing, developed retail center is situated south of the Project site, south of Main Street on the opposite east end of the Project site.

Existing Land Use Designations

As shown in Figure 2-13, the Oakley 2020 General Plan Land Use Diagram, the proposed Project site is currently designated for commercial land uses. The adjacent areas to the south and west are also designated for commercial development. The BNSF Railroad borders the Project on the north and west, and on the north side of the BNSF railroad tracks, the land use designations include industrial and business park.

Existing Zoning Designations

The Project site and the area to the north of the proposed specific plan are currently zoned Heavy Industrial (HI). The proposed Project necessitate that the Project area be rezoned from HI to SP-2 to make the existing zoning designation consistent with the General Plan land use designation for the proposed Project site.

Redevelopment Plan

The Oakley Redevelopment Plan[1] Project Area consists of approximately 1,616 acres of land. The original Redevelopment Project Area was generally bounded on the east by the Atchison, Topeka and Santa Fe (AT&SF) Railroad right-of-way and State Route 4 (SR 4); on the south by Oakley Road, SR 4 and Cypress Road; on the west by Bridgehead/Neroly Road; and on the north by the AT&SF right-of-way. The Redevelopment Project Area was amended to include the existing DuPont plant site, Cline Vineyards, the existing marina west of the DuPont site, the Big Break Marina, O'Hara Park, O'Hara Middle School, and residential and vacant property located adjacent to and north of Brownstone Road.

The Redevelopment Project Area is largely residential, with commercial strips located along State Route 4, which include the proposed Specific Plan Project area. Historically, the Redevelopment Project Area has seen little commercial and employment development and, thus, has a significant imbalance of jobs and housing. The Redevelopment Project Area is further characterized by the existence of inadequate public improvements, public facilities, street and traffic circulation, open spaces and utilities. The older commercial areas, in addition to the DuPont site, marinas, and industrial properties to the east of Big Break Road, are in need of revitalization and increased investment. It should be noted that

although the Project site is located within the Redevelopment Project Area, development of the site is not a Redevelopment project.

Regulatory Environment

Urban Limit Line

The Contra Costa County General Plan includes an Urban Limit Line (ULL) that was established in 1990 by the voters of Contra Costa County. The ULL has been adopted by the City of Oakley and is discussed in the Oakley 2020 General Plan (p. 6-8). The ULL has two purposes: (1) to ensure preservation of identified non-urban agricultural, open space and other areas by establishing a line beyond which no urban land uses can be designated during the term of the General Plan, and (2) to facilitate the enforcement of the County 65/35 Land Preservation Standard. Properties located outside the ULL may not obtain General Plan Amendments that would redesignate them for an urban land use. The 65/35 Land Preservation Standard requires that at least 65 percent of all land in the County ULL shall be preserved for agriculture, open space, wetlands, parks and other non-urban uses. The standard operates on a countywide basis and includes urban and non-urban uses within cities as well as the unincorporated areas. The Specific Plan Project site is within the Urban Limit Line.

Oakley General Plan

The following applicable goals and policies are from the Oakley 2020 General Plan Land Use Element:

Goal 2.1 Guide development in a manner that creates a balanced and desirable community, maintains and enhances the character and best qualities of the community, and ensures that Oakley remains an economically viable City.

Policy 2.1.2 Consider the fiscal impacts of development in order to ensure the City has adequate financial resources to fund community projects and programs.

Policy 2.1.3 Promote commercial and residential development that supports the small town character of Oakley. Key elements include scale of buildings, landscaped open areas within projects and safe and accessible multi-use trails.

Policy 2.1.5 Preserve open space areas, of varying scales and uses, both within development projects and at the City's boundary.

Policy 2.1.10 When considering large scale development projects, the City may, at its discretion, authorize a Specific Plan (SP) or Planned Unit Development (PUD) approach that allows flexibility within a project area. Under this approach, the distribution of land uses may vary from the land uses as designated on the Land Use Diagram. The SP/PUD approach shall not allow either an overall greater development density than allowed under the Land Use Diagram, or a combination of uses that undermines the overall intent of the project area as established under the General Plan policies and Land Use Diagram.

Goal 2.3 Support the retention and expansion of existing commercial establishments, and to encourage new, high-quality commercial development in the City.

Policy 2.3.1 Encourage businesses that support and contribute to an economically vital and diverse Oakley community.

Policy 2.3.3 Promote the location of commercial centers to allow for easy access to arterial streets that serve the City. The centers should be located in centralized areas capable of serving the greatest number of households with the least travel, and providing the best access to alternate modes of transportation and highways.

Policy 2.3.4 Promote the location of regional commercial uses, such as factory outlets, malls, and hospitals on major roads or at major intersections.

Policy 2.3.14 Require landscaping in conjunction with commercial development projects that enhances the character and quality of the project and its immediate vicinity.

Oakley Redevelopment Plan

The following applicable goals and objectives are from the Oakley Redevelopment Plan to promote the elimination of blight and the revitalization of the Redevelopment Plan Area:

Goals

- Facilitate economic development, stimulate and attract private investment, and create employment opportunities for Project area residents.
- Improve infrastructure and public facilities.
- Expand and improve commercial corridors.
- Capitalize on existing and future financing resources and opportunities.
- Eliminate blighting influences and remove impediments to development.
- Provide the framework to restore the economic health through public and private actions.
- Enhance commercial and light industrial development. Ensure financial feasibility of development and rehabilitation projects.

Objectives

The following objectives are intended to provide a framework for efforts to attain the goals outlined above.

- Conclude the establishment and begin implementation of a specific plan to address transportation, land use and economic development issues prevalent in the Old Town Area of Oakley.
- Improve infrastructure through property acquisition, drainage, utilities, and water and sewer improvements.
- Create a strong marketing program to attract new businesses and generate revenue.
- Improve the attractiveness of Oakley, particularly at community entranceways, in the Old Town Area and along State Route 4.
- Improve street conditions such as discontinuous curbs, gutters and sidewalks, particularly around the DuPont site and Brownstone Road.
- Assist in the orderly development of the DuPont site and adjacent properties through tools including off-street parking, façade improvements and low interest loans.
- Undertake streetscape improvements to benefit the overall appearance and vitality of the Project area.

- Implement tools to reduce the cost of redevelopment or rehabilitation activities including tax exempt financing, capital equipment purchasing, land "write downs" and loan programs.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, an impact to the land use and planning of the proposed Project area would have a significant effect on the environment if it would:

- Physically divide an established community;
- 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; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

Impacts and Mitigation Measures

Basis for Impacts

The particular mix and scale of uses proposed in the Specific Plan are designed to serve the community as a whole, and have been organized in an effort to promote flexibility in phasing of site development while providing a unifying architectural, landscape and site improvement theme. Following is an analysis of potential impacts associated with implementation of the Specific Plan Project.

Analysis of Project Impacts

Impact LU-1 - Physically Divide an Established Community

The proposed Project would be consistent with the recently adopted City of Oakley 2020 General Plan. As shown in the Oakley 2020 General Plan Land use Diagram (See Figure 2-13 of this DEIR), the properties to the east and south are all designated for commercial land uses. In addition, the rail-lines that extend along the northwestern bounds of the proposed specific plan area already acts as a north-south divider. Because the proposed Project would be consistent with the surrounding land uses, as designated by the General Plan, and because no existing communities exist on site, the proposed Project would not be expected to divide any existing communities.

In addition, as a part of the specific plan process, the 76.4-acre Project site would be rezoned to the "SP-2" District to achieve consistency with the Specific Plan

and General Plan. The planned land uses and future development would be consistent with the Oakley General Plan and avoid any potential for division of an established community; and would therefore have a ***less-than-significant*** effect on the environment. Additional mitigation would not be required.

Impact LU-2 - Conflict with Any Applicable Land Use Plan, Policy, or Regulation

Zoning and General Plan Designations

The 76.4-acre Specific Plan Project provides for entitlement, construction and operation of up to 770,000 square feet of new commercial land uses. The proposed Specific Plan identifies a complete set of development standards that must be satisfied for all phases of construction, including site improvements, parking and circulation, design guidelines and landscaping, general sign guidelines, and energy conservation and waste reduction. The development standards would meet or exceed current City ordinances. The Project site is currently zoned Heavy Industrial, and will be rezoned to the SP-2 District as part of the Specific Plan process, in compliance with current General Plan land use designation. The Specific Plan will provide for coordination of development on the site, in a manner consistent with all applicable General Plan policies. The City of Oakley General Plan 2020 Land Use Diagram (Figure 2-2 of the General Plan) designates the Specific Plan Property as “Commercial” (1.0 maximum floor area ratio). The proposed Project would include up to 770,000 square feet of commercial development and the infrastructure improvements necessary to accommodate the new development. The proposed Project would also be consistent with the land uses included in the Oakley Redevelopment Plan Area Amendment No. 1 (See Figure 2-21) and applicable City regulations with regard to commercial signage (See Impact AES-2 in the Aesthetics Chapter of this DEIR). The City’s policy documents have provided the primary planning direction for the Specific Plan area.

Redevelopment Plan

The Specific Plan area is within the City of Oakley Redevelopment Project Area. The intent of the City of Oakley Redevelopment Plan is to revitalize the center of town and to stimulate economic growth along State Route 4, by providing additional commercial and industrial development.

The Redevelopment Plan includes the proposed Project site, as well as the DuPont property to the north of the proposed Project for conversion to commercial and light industrial uses. The Redevelopment Plan EIR addresses potential conflicts with existing agricultural uses on the proposed Project site and DuPont property. The Redevelopment Plan EIR found that the development of the Redevelopment Area would result in a potentially significant impact with regard to the loss of vineyards in excess of 80-years old and includes mitigation

(4.14.3 in the Oakley Redevelopment Plan EIR) ensuring that 15 acres of vineyards (10 acres of which must be 80 old-growth) that exist within the Redevelopment Plan area would be preserved for a minimum of ten years from the date of preservation.

Though the proposed Project would result in the removal of existing vineyards on the Project site, additional old-growth vineyards remain to the north of the BNSF railroad tracks, just west of Big Break Road. The City has noted that the Project site is increasingly constrained for continued viable agricultural use because of encroaching commercial and industrial development associated with the development of the City of Oakley and may not be the ideal location for the vineyard preservation, as indicated in the Redevelopment Plan EIR.

Though development of the proposed Project would result in the removal of the vineyards on the 76.4-acre Project site, because additional, better-suited vineyards exist to the north of the Project site that would satisfy the mitigation included in the Redevelopment Plan EIR, the approval proposed Project would not result in a conflict with the mitigation set forth in the Redevelopment Plan EIR with regard to the preservation of vineyards.

Consistent with the Goals and Objectives of the Redevelopment Plan, the development of the proposed Specific Plan would include commercial development along Main Street within the Redevelopment Plan Project area. The proposed Project would facilitate economic growth, provide additional shopping and employment opportunities in the area, promote the redevelopment of the areas surrounding the DuPont site, and provide an attractive development of the western entrance to the City along State Route 4. Therefore, development associated with the Specific Plan would be consistent with the goals and objectives of the City of Oakley Redevelopment Plan.

Character and Quality of the Community

The proposed Project would be consistent with Goal 2.1 of the General Plan because the proposed Project would guide development in a manner that creates a balanced and desirable community, maintains and enhances the character and best qualities of the community, and ensures that Oakley remains an economically viable City. In particular, development of the Specific Plan Project is expected to produce substantial future employment, as well as sales and property tax revenues to support City services.

In addition, the Project is consistent with Policy 2.1.4 of the General Plan because it would promote the placement of the most intensive non-residential development (Commercial, Business Park and Light Industrial) in the Northwest Oakley Planning Area as defined in Figure 2-3 of the General Plan. The proposed Project is separated from existing agricultural land uses by the existing

BNSF railroad right-of-way, and the Project does provide a landscaped buffer between the planned commercial and current agricultural uses (Policy 6.1.4).

Mix of Land Uses

The Project would include up to four Major Retail uses, and up to 16 building envelopes for Secondary Retail uses. The Specific Plan provides that this mix may be adjusted, in response to market demand, to accommodate one additional Major Retail use, and possibly a hotel use, with a corresponding reduction in the number and scale of Secondary Retail uses, as reflected in Tables 2-1 and 2-2. Land Uses authorized under the Specific Plan are limited by Specific Plan Section 3.3 to:

- A hotel use of up to 100 rooms;
- Major appliance sales;
- Department store uses;
- Building materials and hardware sales;
- Tire sales and service uses;
- Supercenter uses (i.e., large scale retailers that combine grocery sales with general merchandise sales and other permitted uses, including but not limited to, indoor/outdoor garden centers, alcohol sales, medical clinics, drive-thru uses, 24-hour operations, pharmacies, and temporary seasonal sales); and
- Additional non-residential uses of a compatible nature that may be approved by conditional use permit as provided for under Oakley Municipal Code Section 9.1.504(c).

As proposed, the mix of land uses as called for under Specific Plan is consistent with that otherwise provided for under current General Plan “Commercial” classification.

Placement of Building Envelopes

The Major and Secondary Retail building envelopes are generally identified in Development Plan Figures 2-18 and 2-19; the scale of these envelopes is further detailed in Table 2-1. As proposed, the footprint, shape and orientation of all buildings and improvements within and adjoining the building envelopes and the surrounding site areas would be consistent with all applicable policies contained in the Oakley 2020 General Plan, the Oakley Redevelopment Area Plan and the Oakley Zoning Ordinance.

Building Intensity

The proposed site Floor Area Ratio (FAR) in the Development Plan is 0.21, which may be enlarged to 0.23 under Alternative 1. This is considerably less than

the FAR of 1.0 currently allowed under the General Plan Commercial Land Use Classification. Implementation of the Land Use and Development Standards of the Specific Plan would yield a total of up to 770,000 GFA of building area (a range of development of between 630,000 and 770,000 square feet is authorized under the Development Plan). The overall scale of proposed development is less than that currently authorized under the General Plan, which provides for development at a FAR of up to 1.0 (resulting in a development scenario of over twice the square footage than would result from the proposed Specific Plan as discussed in Chapter 5). The more moderate scale of development authorized under the Specific Plan would not exceed the FAR standards identified in the General Plan and other applicable plans, policies and regulations of the City of Oakley.

Building Height

Maximum building heights for retail buildings are generally set at 40 feet, as provided for in Table 2-2, subject to an exemption for the optional hotel use. In addition, architectural features may have additional height allowance pursuant to the Design Guidelines contained in Section 6.5 of the Plan. The building heights would not adversely impact existing uses or planned development on adjoining properties, and would be consistent with the City's current standards.

Setbacks

A uniform 20-foot setback is established in the Specific Plan from all public streets. The Plan preserves flexibility for design of individual buildings within the designated envelopes, subject to the standards contained in Sections 6.2 and 6.5 of the Plan. These building setbacks exceed those established under the Oakley Zoning Ordinance and currently applicable to other commercial development in the Retail Business (R-B) District (10-foot setback), the Downtown Commercial (C-D) District (10-foot setback), or the General Commercial (C) District (15-foot setback). Because the Specific Plan setback applies to all fronting public streets, and exceed the standards applicable to other commercially zoned properties in the community, the resulting development will present a more open and spacious perspective as viewed along Main Street and Bridgehead Road. Additional development standards contained in the Specific Plan addressing frontage landscaping and parking lot landscaping will serve to augment the larger setback, resulting in an even more spacious visual perspective, as further addressed in Chapter 3.14, Aesthetics.

Compatibility

The proposed Project is also consistent with residential Policy 2.2.4 of the General Plan because, in areas where different land uses (including residential land uses) abut, the Project would promote land use compatibility by utilizing buffering techniques such as landscaping, setbacks, screening and, where

necessary, construction of sound walls. The Project also promotes the location of a commercial center to allow for easy access to arterial streets that serve the City. This center is located in a centralized area capable of serving the greatest number of households with the least travel, and providing the best access to alternate modes of transportation and highways (Policy 2.3.3). In addition, the Project would promote the location of regional commercial uses on major roads and at major intersections consistent with Policy 2.3.4.

Summary

The proposed Project is consistent with the goals and policies in the Oakley General Plan and Redevelopment Area Plan; therefore, a *less-than-significant* effect on the environment would result. Additional mitigation would not be required.

Impact LU-3 - Conflict with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan

On January 25, 2000, the Contra Costa County Board of Supervisors declared its intent to participate in the development of a Habitat Conservation Plan (HCP) for East Contra Costa County. On June 30, 2000, the East Contra Costa County Habitat Conservation Plan Association Agreement went into effect. This agreement established the East Contra Costa Habitat Conservation Plan Association (HCPA) as the lead agency in drafting the Habitat Conservation Plan for submittal to the governing boards and councils of member agencies, oversee compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), and would serve as the lead agency under CEQA for developing the HCP. The City of Oakley elected to participate in the development of the HCP and is a member of the HCPA.

The City of Oakley approved the East Contra Costa County Habitat Conservation Plan (HCP) and authorized execution of the Implementation Agreement and Joint Exercise of Powers Agreement on January 22, 2007 (Resolution No. 12-07). The U.S. Fish and Wildlife Service signed the federal permit for the HCP on July 25, 2007. The California Department of Fish and Game signed the state permit for the HCP on August 6, 2007. Therefore, East Contra Costa County has an officially approved HCP as of August 6, 2007. The next step is for the participating cities and county to approve the implementing ordinance (within 90 days of the August 6th date) and adopt the fee structure that is set forth in the HCP. The City anticipates the HCP and its fee schedule will be in effect prior to its consideration to certify the River Oaks Crossing EIR.

The River Oaks Crossing property is within the HCP inventory area. The HCP development fee is based on the project location. The HCP includes three Fee Zones, defined by a map that determines the fee paid by development (Figure 9-1 of the HCP), regardless of the land cover type within them. The River Oaks

Crossing Specific Plan site is within the HCP Development Fee Zone I: Cultivated and Disturbed Lands. Land within this zone is generally dominated by cultivated agriculture but also includes undeveloped areas within the existing urban area of Pittsburg, Brentwood, and Oakley. The development fee in Zone I is approximately $12,000 per acre.

The proposed Project would not conflict with the East Contra Costa County HCP, and would therefore have a ***less-than-significant*** effect. Additional mitigation would not be required.

Cumulative Impacts

Construction of building improvements identified in the Specific Plan's Development Plan will contribute, incrementally, to overall development in the City of Oakley, consistent with the 2020 General Plan. The Oakley 2020 General Plan EIR analyzed cumulative development including commercial development on the subject property at the higher intensity levels discussed above. The General Plan EIR found that, the implementation of the Goals, Policies and Programs associated with the General Plan would reduce these impacts to a less-than-significant level.

Because the Specific Plan Project would include a lower-density of commercial development than anticipated by the City of Oakley General Plan and the associated General plan EIR, the implementation of the specific plan would not be expected to contribute to any new cumulative effects on division of the community, conflicts between land uses or impairment of a habitat conservation plan. The proposed Specific Plan Project, along with all known projects in the City of Oakley would change the intensity of land uses in the City's Planning Area. However, the Project site is within the City's incorporated boundaries and also within the Contra Costa County Urban Limit Line. The Oakley 2020 General Plan designates this area for urban development and the Land Use Element of the General Plan applies a "Commercial" classification to the Project site. Furthermore, the General Plan and General Plan EIR anticipated such growth and development and found the cumulative impacts to be less-than-significant after the implementation of the goals, policies and programs included in the General Plan. All development proposed and constructed within the City are reviewed for consistency with citywide land use controls and development standards during the course of the Project review and approval process.

The proposed Project would be consistent with the goals and objectives set forth in the City of Oakley Redevelopment Plan. Given the land use controls and development standards presently in use within the City of Oakley, and the consistency of the Project with the land uses and densities in the General Plan, cumulative land use impacts would be minimized to a level that is considered to be ***less-than-significant***. Additional mitigation would not be required.

Endnotes

[1] City of Oakley, Redevelopment Plan for the Oakley Redevelopment Project Area, December 27, 1989.

3.2 CIRCULATION AND TRANSPORTATION (CT)

The Specific Plan Project's effects on transportation and traffic systems are analyzed in the detailed Transportation Impact Analysis contained in Appendix C. Following is a summary of the analysis, including the Project's effects in relationship to standards of significance, and mitigation measures required to reduce potential impacts to a less-than-significant level.

Environmental Setting

Existing Conditions

The Project site is a triangular area bounded on the north by the Burlington Northern-Santa Fe (BNSF) Railroad tracks, on the south by Main Street (SR 4), and on the west by Bridgehead Road.

Roadway Segments

Major roadways in the study area include SR 160, Main Street, Neroly Road/Bridgehead Road, Oakley Road, Empire Avenue, Laurel Road, Hillcrest Avenue, and East 18th Street. Other minor roadways include Sandy Lane, Live Oak Avenue, Big Break Road, Wilbur Avenue, and West Cypress Road. Each of these roadways is described below.

SR 160 is a north-south highway that extends through the study area, west of the Project site. This roadway serves as a major route connecting Oakley to the Antioch Bridge and Sacramento County to the north, and to the SR 4 freeway to the west. SR 160 typically has two lanes in each direction, narrowing to one lane per direction north of the Antioch Bridge toll plaza.

Main Street (SR 4) is an east-west arterial extending from an interchange with SR 160 on the west to Brentwood and Stockton on the southeast. In the vicinity of the Project, Main Street typically provides two lanes in each direction with a two-way center left-turn lane. Primary access to the Project site would be provided from Main Street.

Neroly Road/Bridgehead Road is a two-lane north-south roadway connecting Oakley to Brentwood and borders the west side of the Project site. Site access would be provided from Bridgehead Road.

Oakley Road is a two-lane east-west minor arterial that connects Oakley to Antioch. Oakley Road extends from west of SR 160 in Antioch eastward to the Road's terminus at Empire Avenue.

Empire Avenue is a major north-south roadway in the study area, providing connections between Brentwood and Oakley, and between Antioch and Oakley. In the study area, Empire Avenue is typically a four-lane road.

Wilbur Avenue is an east-west roadway to the north of the Project site, with an interchange on SR 160. Wilbur Avenue provides access to industrial and residential areas and extends westward into Antioch.

Sandy Lane is a minor north-south roadway between Main Street and Oakley Road that primarily serves local residents. Sandy Lane is unpaved, except where it intersects Main Street. Access to the Project site is proposed as the north leg of the Sandy Lane/Main Street intersection.

Live Oak Avenue is a two-lane roadway extending from Main Street in the north to Neroly Road in the south. An extension of Live Oak Avenue as a major arterial is anticipated to be constructed by 2030 through the Project site and into proposed industrial areas to the north with a grade-separated crossing at the railroad tracks. Project site access would be provided on the Live Oak Avenue extension.

Big Break Road is a minor north-south roadway providing access to a large residential development and the Oakley Marina. An at-grade railroad crossing can be found just north of Main Street at the BNSF tracks.

Hillcrest Avenue is a two- to six-lane, north-south roadway located west of the Project site. In the Project area, Hillcrest Avenue is mostly a residential street with no pedestrian or bicycle facilities.

Laurel Road is a major east-west roadway in the City of Oakley. This roadway, which extends from Neroly Road to east of Main Street (SR 4), currently has two to four travel lanes. Laurel Road connects to Empire Avenue and O'Hara Avenue in the study area. In the future the roadway will be extended to provide access to SR 4 Bypass and Hillcrest Avenue.

Cypress Road is a two- to four-lane east-west arterial that begins at Empire Avenue and continues east of Main Street (SR 4). In the Project area, Cypress Road is residential.

East 18th Street is located north of SR 4 in Antioch, and is a major east-west arterial that runs parallel to SR 4. The street also provides direct access to SR 4 and SR 160. East of SR 4/SR 160, East 18th Street becomes Main Street. In the Project area East 18th Street has between two and four lanes.

Study Intersections

The Traffic study conducted by Fehr and Peers for the proposed Project included an analysis of 25 nearby intersections that may be affected by the approval of the proposed Specific Plan (See Figure 3.2-1). The existing peak hour levels of service for the study intersections are included in Table 3.2-1.

Public Transit

Tri-Delta Transit currently operates four local bus routes and two express commuter routes in the Project area.

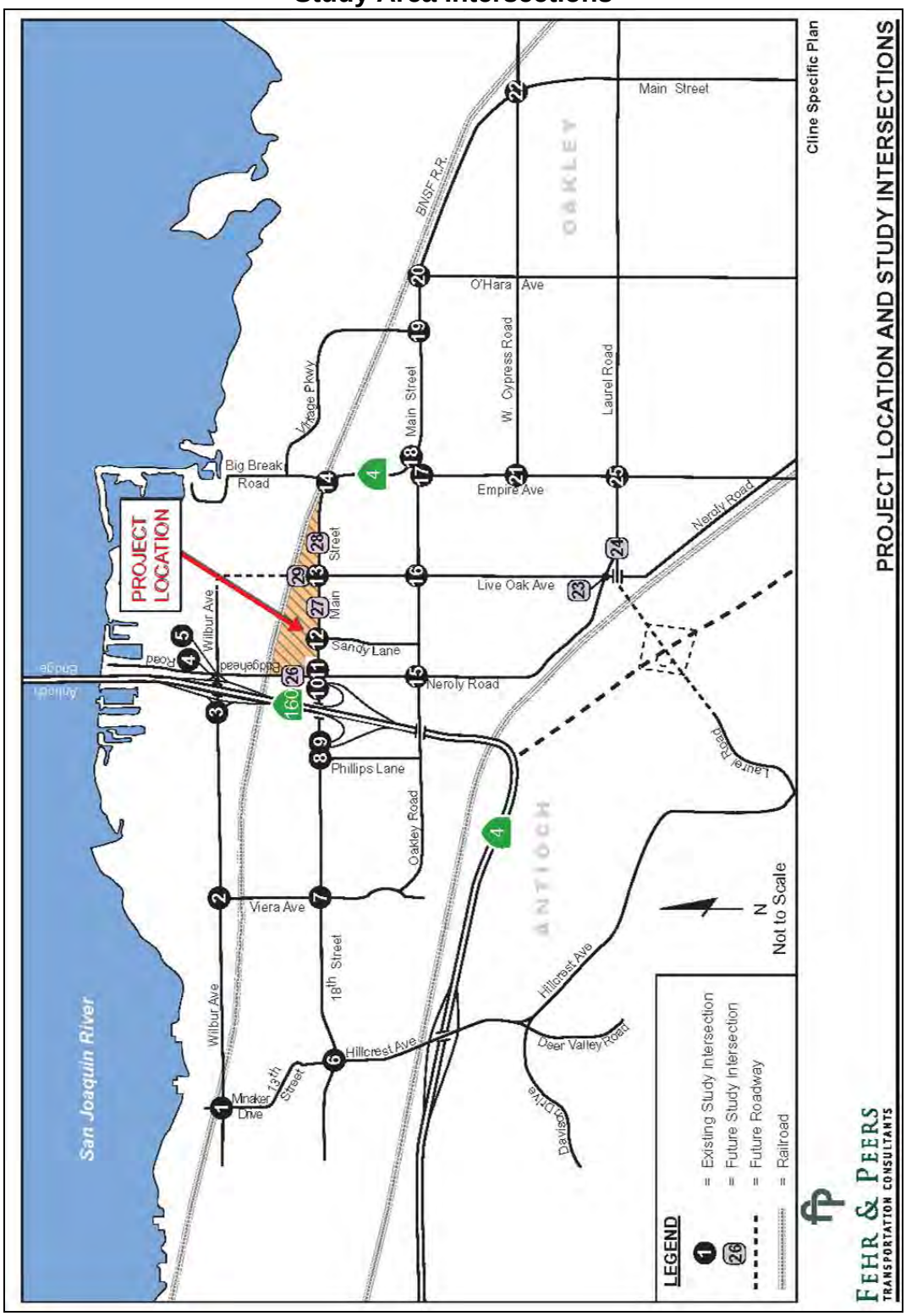
Route 300, the Pittsburg BART/Brentwood Park & Ride route, is a weekday express route connecting Brentwood to the Pittsburg/Bay Point BART station via Oakley and Antioch. The bus travels along Main Street with the closest stops to the study area located near the Main Street/Big Break Road and Main Street/Empire Avenue intersections. The bus operates from 4:15 AM to approximately 10:00 PM on 15- to 30-minute headways.

Route 383, the Oakley/Antioch/Freedom High School route, connects Oakley to Antioch and Freedom High School in Brentwood. One stop is provided in the study area near the intersection of Main Street/Big Break Road. This route is only in service on weekdays and has both clockwise and counterclockwise route patterns. The clockwise route currently stops at Main Street/Big Break Road at 7:24 AM and 7:32 AM. The counterclockwise route currently stops at Main Street/Big Break Road from 6:00 AM to 6:46 PM on approximately one-hour headways.

Route 391, the BART/Pittsburg/Antioch/Oakley/Brentwood route, provides weekday service to most East County cities. In the study area, stops are provided along Main Street at the SR 160 Southbound Ramps, Bridgehead Road, and Big Break Road. The route operates from 4:00 AM to 1:15 AM on 30- to 60-minute headways.

Route 392, the BART/Pittsburg/Antioch/Oakley/Brentwood route, is the weekend service of Route 391. The route operates from 5:20 AM to 1:00 AM on 60-minute headways.

Figure 3.2-1
Study Area Intersections



Source: Fehr & Peers Associates, May 2007.

Table 3.2-1
Existing Peak Hour Levels of Service

Existing Conditions Intersection Peak Hour LOS Summary						
			CCTALOS		HCM	
Intersection	Control[1]	Peak Hour	V/C Ratio[2]	LOS	Delay[3]	LOS
1. Wilbur Avenue/Minaker Drive	SSSC	AM PM	-- --	-- --	3 (14) 3 (17)	A (B) A (C)
2. Wilbur Avenue/Viera Avenue	SSSC	AM PM	-- --	-- --	1 (14) 1 (13)	A (B) A (B)
3. Wilbur Avenue/SR 160 SB Ramps	SSSC	AM PM	-- --	-- --	3 (12) 5 (23)	A (B) A (C)
4. Wilbur Avenue/SR 160 NB Ramps	SSSC	AM PM	-- --	-- --	1 (11) 2 (15)	A (B) A (C)
5. Wilbur Avenue/Bridgehead Road	AWSC	AM PM	-- --	-- --	16 13	C B
6. East 18th Street/Hillcrest Avenue	Signal	AM PM	0.30 0.62	A B	20 25	B C
7. East 18th Street/Viera Avenue	Signal	AM PM	0.44 0.34	A A	10 6	A A
8. East 18th Avenue/Phillips Lane	SSSC	AM PM	-- --	-- --	1 (10) 0 (11)	A (B) A (B)
9. Main Street/SR 160 SB Ramps	Signal	AM PM	0.45 0.52	A A	12 15	B B
10. Main Street/SR 160 NB Ramps	Signal	AM PM	0.61 0.83	B D	16 52	B D
11. Main Street/Bridgehead Road/Neroly Road	Signal	AM PM	0.57 **0.94**	A **E**	32 **70**	C **E**
12. Main Street/Sandy Lane	SSSC	AM PM	-- --	-- --	0 (23) 0 (12)	A (C) A (B)
13. Main Street/Live Oak Avenue	SSSC	AM PM	-- --	-- --	1 (29) **5 (>50)**	A (D) **A (F)**
14. Main Street/Big Break Road	Signal[6]	AM PM	0.49 0.55	A A	12 20	B B
15. Oakley Road/Neroly Road	AWSC	AM PM	-- --	-- --	13 **36**	B **E**
16. Oakley Road/Live Oak Avenue	AWSC	AM PM	-- --	-- --	8 10	A A
17. Oakley Road/Empire Avenue	Signal	AM PM	0.27 0.49	A A	16 23	B C
18. Main Street/Empire Avenue	Signal	AM PM	0.38 0.51	A A	19 22	B C
19. Main Street/Vintage Parkway	Signal	AM PM	0.39 0.47	A A	10 11	B B
20. Main Street/O'Hara Avenue[4]	Signal	AM PM	0.57 0.68	A B	9 11	A B
21. Cypress Road/Empire Avenue[4]	Signal	AM PM	0.23 0.27	A A	9 10	A B
22. Cypress Road/Main Street	Signal	AM PM	0.43 0.45	A A	22 23	C C
23. Neroly Road/Live Oak Avenue[5]	N/A	AM PM	N/A N/A	N/A N/A	N/A N/A	N/A N/A
24. Laurel Road/Live Oak Avenue[5]	N/A	AM PM	N/A N/A	N/A N/A	N/A N/A	N/A N/A
25. Laurel Road/Empire Avenue	AWSC	AM PM	-- --	-- --	19 **46**	C **E**

Table 3.2-1
Existing Peak Hour Levels of Service

Existing Conditions Intersection Peak Hour LOS Summary						
			CCTALOS		HCM	
Intersection	Control[1]	Peak Hour	V/C Ratio[2]	LOS	Delay[3]	LOS

Notes: Bold indicates intersection operating at deficient level of service.

1. Signal = Signalized intersection
   SSSC = Side-street stop-controlled intersection
   AWSC = All-way stop-controlled intersection
2. Volume-to-capacity ratio (V/C) determined for all signalized intersections using the CCTALOS methodology.
3. Average intersection delay is calculated for all signalized and unsignalized intersections using the 2000 *Highway Capacity Manual* (HCM) methods. For side-street stop-controlled intersections, average intersection delay (in seconds per vehicle) is presented. Delay for worst approach is shown in parentheses.
4. Intersections were unsignalized when traffic counts were conducted, but have been signalized since. They have been analyzed as signalized intersections.
5. Intersection will be analyzed under future scenarios.
6. Intersection currently in the process of being signalized by the City of Oakley.

Source: Fehr & Peers, May 2007.

Delta Express, the express commuter bus run by Tri-Delta Transit, has two routes with stops in Oakley. One route connects Oakley with the Dublin/Pleasanton BART station, where passengers can connect with a free shuttle to the Bishop Ranch Business Park. Passengers can board the bus at the Oakley Albertsons (located in the shopping center on the southeast corner of the Empire Avenue/Main Street intersection) at 4:55 AM and 5:25 AM, and can board for return service at 4:34 PM and 5:49 PM. Another route, which connects to Lawrence Livermore National Lab, departs from Oakley Albertsons at 5:18 AM and 6:14 AM and return trips depart from the East Gate at 4:14 PM and 5:14 PM.

Bicycle and Pedestrian Facilities

Limited bicycle and pedestrian facilities currently exist within the Project study area. In the vicinity of the Project, bicycle lanes exist on Empire Avenue and portions of Vintage Parkway. The Oakley 2020 General Plan, the City of Antioch General Plan (November 2003), the City of Oakley Parks, Recreation and Trails Master Plan (March 2007), and the East County Bikeway Plan (November 2001) collectively propose that several new facilities be constructed in the future to serve the area in the vicinity of the Specific Plan Project. Bike lanes are planned for Main Street, Big Break Road, Oakley Road, Wilbur Avenue, Laurel Road, Viera Avenue, Neroly Road, and O'Hara Avenue.

Sidewalks, which occur intermittently throughout the Project study area, are currently provided on segments of Main Street at the SR 160 Southbound Ramps as well as on Bridgehead Road/Neroly Road, Big Break Road, and portions of East 18th Street east of Viera Street. However, contiguous sidewalk facilities do not exist in the immediate Project vicinity.

Local multi-use trails are proposed along the BNSF railroad right-of-way to the north of the Project site and along Neroly Road / Bridgehead Road and Live Oak Avenue. A network of regional trails, which would be maintained by the East Bay Regional Parks District, is proposed in the vicinity of Big Break Road and along the water frontage.

Regulatory Environment

Contra Costa County Transportation Authority

The Contra Costa Transportation Authority (CCTA) serves as the Congestion Management Agency (CMA) for Contra Costa County. CCTA adopted the county's first Congestion Management Program (CMP) in October 1991. The most recent CMP, referred to as the 2001 CMP Update, represents the fifth biennial update that the Authority has prepared.

Measure C

The overall goal of the CCTA Growth Management Program (GMP) called for in Measure C-1988 is to "achieve a cooperative process for Growth Management on a countywide basis, while maintaining local authority over land use decisions and the establishment of performance standards." Using a formula based on road miles and population, CCTA allocates 18 percent of the sales tax revenues it receives to local jurisdictions that comply with GMP requirements. Oakley participates in the Measure C program as a member of the TRANSPLAN subregional transportation planning committee, which consists of Antioch, Brentwood, Oakley, Pittsburg, and Contra Costa County.

Oakley General Plan

The following applicable goals and policies are from the Oakley 2020 General Plan Circulation Element:

Goal 3.1 Provide an efficient and balanced transportation system.

Policy 3.1.1 Strive to maintain Level of Service D as the minimum acceptable service standard for intersections during peak periods (except those facilities identified as Routes of Regional Significance).

Policy 3.1.2 For those facilities identified as Routes of Regional Significance, maintain the minimum acceptable service standards specified in the *East County Action Plan Final 2000 Update*, or future Action Plan updates as adopted.

Goal 3.2 Promote and encourage walking and bicycling.

Policy 3.2.1 Provide maximum opportunities for bicycle and pedestrian circulation on existing and new roadway facilities.

Policy 3.2.2 Enhance opportunities for bicycle and pedestrian activity in new public and private development projects.

Goal 3.3 Provide adequate, convenient, and affordable public transportation.

Policy 3.3.2 Ensure that new public and private development supports public transit.

Goal 3.7 Coordinate land use and transportation planning to maximize use of limited transportation resources.

Policy 3.7.1 To the extent feasible, protect existing and future land uses from the noise, visual, and other impacts of major roadway construction projects.

Policy 3.7.3 Provide sufficient parking, while considering the effect of parking supply on the use of alternate modes.

Policy 3.7.4 Mitigate development impacts and ensure that new development pays its own way.

Policy 3.7.5 New development should not result in inconsistent street frontage improvements along streets adjacent to and serving the project.

Thresholds of Significance

The Project site is situated within the City of Oakley, within one-half mile of the City of Antioch, and within the service area of the Contra Costa Transportation Authority (CCTA), which provides service throughout the region. Based on the adopted policies of CCTA and the City of Oakley, a significant traffic impact would occur if the addition of Project-related traffic would:

- Cause:
  a) The operations of a signalized study intersection to decline from an acceptable level to an unacceptable level (LOS E);
  b) Deterioration in already unacceptable operations at a signalized intersection by a change in V/C ratio of more than 0.01 or a change in average delay of more than 5 seconds;
  c) Operations of an unsignalized study intersection to decline from an acceptable level to an unacceptable level, and the need for installation of a traffic signal at an unsignalized intersection, based on the *Manual on Uniform Traffic Control Devices* (MUTCD) Peak Hour Signal Warrant (Warrant 3);
  d) Operations of a freeway segment to exceed the established Delay Index standard;
  e) Deterioration in a freeway segment that already exceeds the established Delay Index standard by increasing the freeway volume by more than 1 percent; or
  f) Substantially increased hazards or congestion due to a design feature (e.g., sharp curves) or incompatible uses (e.g., farm equipment);
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; or
- Result in inadequate parking capacity.

Method of Analysis

Basis for Impacts

Study intersection operations were evaluated using level of service calculations. The analysis method outlined in *Technical Procedures Update* prepared by the Contra Costa Transportation Authority (CCTA) (July, 2006), known as CCTALOS, was utilized. To augment this analysis, the Transportation Research Board's 2000 *Highway Capacity Manual* (HCM) method and Synchro software were also used.

To measure and describe the operational status of a local roadway network, transportation engineers and planners commonly use a grading system called level of service (LOS) (See Table 3.2-2, Signalized Intersection LOS Criteria and Table 3.2-3, Unsignalized LOS Criteria). LOS is a description of an intersection's operation, ranging from LOS A, indicating free-flow traffic conditions with little or no delay experienced by motorists, to LOS F, which describes congested conditions where traffic flows exceed design capacity, resulting in long queues and delays. At each signalized study intersection, traffic conditions were evaluated using the CCTALOS and HCM methods.

Table 3.2-2
Signalized Intersection LOS Criteria

LOS	CCTALOS	HCM	Description
	Sum of Critical V/C Ratio	Average Control Delay per Vehicle (seconds)	
A	< 0.60	≤ 10.0	This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	0.61 - 0.70	10.1 to 20.0	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.
C	0.71 - 0.80	20.1 to 35.0	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.
D	0.81 - 0.90	35.1 to 55.0	At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	0.91 - 1.00	55.1 to 80.0	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. The individual cycle failures are frequent occurrences.
F	> 1.00	> 80.0	This level, considered unacceptable, occurs when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be contributing factors to high delay levels.

Source: Technical Procedures, Contra Costa Transportation Authority, 1997.

Table 3.2-3
Unsignalized Intersection LOS Criteria

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

Source: Highway Capacity Manual, Transportation Research Board, 2000.

The CCTA planning-level analysis uses various intersection characteristics (i.e., traffic volumes, lane geometry, and signal phasing) to estimate the volume-to-capacity (v/c) ratio of an intersection. HCM operations analysis uses various intersection characteristics (i.e., traffic volumes, lane geometry, signal timing, and pedestrian activity) to estimate the average delay (measured in seconds per vehicle) experienced by motorists traveling through an intersection. Table 3.2-2 summarizes the relationship between the v/c ratio, delay, and LOS for signalized intersections.

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, Chapter 17 of the Transportation Research Board's 2000 HCM method was used. With this method, the LOS ranking is related to the total average delay for each intersection movement, including those not controlled by a stop sign. Total delay is defined as the amount of time required for a driver to stop at the back of the queue, move to the first-in-queue position, and depart from the queue into the intersection. Table 3.2-3 summarizes the relationship between delay and LOS for unsignalized intersections. Typically, the delay and LOS for the worst-movement from the side street is also reported for side-street stop-controlled intersections. Synchro software was used to calculate HCM-based LOS for unsignalized intersections.

Future Roadway Improvements

Significant roadway network changes are expected in the study area in the near future. Funded roadway improvements planned for the next few years were assumed to be completed for the Near Term conditions analysis (year 2010). Major funded roadway improvements assumed to be completed for this analysis include the following:

- Completion of segment one of the SR 4 Bypass as a four-lane freeway between the current SR 4 freeway and Lone Tree Way with full interchanges at Laurel Road and Lone Tree Way, and a partial interchange at the existing SR 4 freeway with no connector ramps between SR 160 and the SR 4 Bypass (under construction);
- Extension of Laurel Road westbound between Empire Avenue into the City of Antioch and reconfiguration of Neroly Road / Live Oak Avenue, Laurel Road / Live Oak Avenue, and Laurel Road / Empire Avenue intersections (under construction);
- Widening of the East Cypress Road / Main Street intersection (under construction);
- Signalization of the Main Street / Live Oak Avenue intersection;
- Widening of East 18th Street to four lanes between Willow Avenue and SR 4;
- Addition of a northern leg and signalization of the East 18th Street/Phillips Lane intersection;

- Signalization of the Wilbur Avenue/Minaker Drive intersection; and
- Addition of a second left turn lane on northbound Neroly Road at the Main Street/Bridgehead Road/Neroly Road intersection.

Additional significant roadway network changes are expected in the study area in the future beyond 2010. Major approved roadway improvements planned for the near future and assumed to be completed for the Cumulative Conditions (Year 2030) Analysis include the following:

- Completion of segment 2 of the SR 4 Bypass as a four-lane freeway between Lone Tree Way and Balfour Road with full interchanges at Sand Creek Road and Balfour Road;
- Completion of segment 3 of the SR 4 Bypass between Balfour Road and Vasco Road a two-lane expressway with intersections at Marsh Creek Road and Walnut Avenue;
- Widening of SR 4 freeway to provide three mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction west of Hillcrest Avenue;
- Widening of Main Street to a six lane arterial between Big Break Road and SR 160;
- Completion of the Main Street Bypass in downtown Oakley;
- Widening of Laurel Road to a four-lane arterial between Empire Avenue and Main Street;
- Extension of Live Oak Avenue from Main Street to Wilbur Avenue; and
- Completion of the connector ramps between SR 4 Bypass and SR 160.

  A supplemental analysis without the connector ramps between SR 4 Bypass and SR 160 is presented in Appendix C. Thus, if these ramps are not constructed, impacts and mitigations presented for the “No Connector Ramp” condition would be applicable. This distinction has been made in the analysis of cumulative impacts because this planned roadway improvement is considered low-priority, relative to other above-mentioned improvements, and is least certain to be completed for inclusion in cumulative conditions. In addition, completion of the connector ramps between the SR 4 Bypass and SR 160 would have a greater effect on the proposed Project than the other planned roadway improvements because the ramps would be adjacent to the Project site and would directly affect traffic patterns.

Project Driveway and Roadways

The Project site is bounded by Main Street (SR 4) to the south, Bridgehead Road to the west, and the BNSF railroad tracks to the north. The Project site is currently vacant and the proposed development would consist of commercial space of up to 770,000 square-feet, which would include three major retail sites and various smaller pads.

The Project site would be accessible from Bridgehead Road and Main Street. A signal-controlled full access point is proposed on Bridgehead Road. Four direct signalized access points are proposed along Main Street; opposite Sandy Lane, between Sandy Lane and Live Oak Avenue, at the Main Street / Live Oak Avenue intersection, and at the east end of the site (See Figure 3.2-2).

Project Trip Generation Assumptions

Project vehicle trip generation was estimated using appropriate trip generation rates and equations for the proposed land uses from Institute of Transportation Engineer's (ITE) *Trip Generation* (7th Edition) and available site-specific data.

The approach for estimating the Project trip generation is as follows:

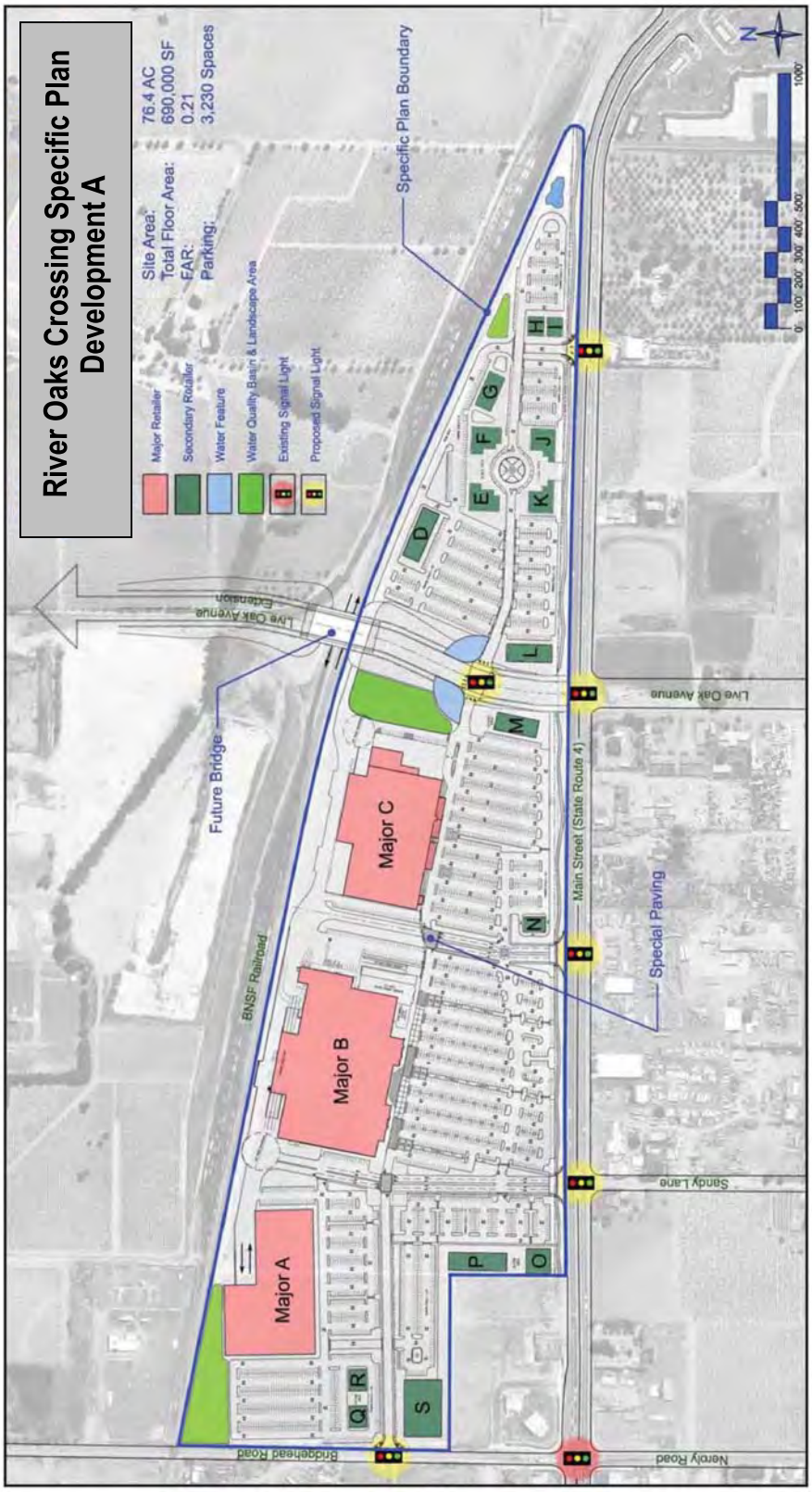
- Categorize project land uses into appropriate ITE categories;
- Identify trip generation rates and/or trip generation equation;
- Apply trip generation reductions; and
- Calculate Final Trip Generation.

Discount Superstore Trip Generation

The universally accepted trip generation rate for super-centers is the "free standing discount super center" rate (land use 813) from *Trip Generation*, *7th Edition*, published by the Institute of Transportation Engineers ("ITE").

The City of Oakley wanted to analyze the Project's traffic impacts using the most conservative rate possible. A trip generation rate suggested by VRPA Technologies Inc, a consulting group, in an opinion letter submitted to the ITE Journal was used for the Project. Subsequent letters to the ITE Journal have questioned the trip generation rate suggested by VRPA and recommended that this rate not be used to generate trip counts for free-standing discount superstores. The reason the VRPA rate has been questioned is trip counts generated under the VRPA trip generation rate are significantly higher that those generated under the ITE rate and result in an extremely conservative measure of super-center traffic.

Figure 3.2-2
Specific Plan Roadway Design



Accordingly, because the traffic study prepared for this Project used the trip generation rate suggested by VRPA, the traffic study represents an extremely conservative measure of Project traffic.

Pass-by Trips

A pass-by trip is defined as a trip already on the surrounding roadway system that would divert to the proposed Project as an interim stop to an ultimate destination. Pass-by trips are not considered new trips on the surrounding roadway system, but do represent new trips to and from the Project site.

Pass-by rates are generally very high for convenience destinations, such as fast-food restaurants and gas stations, and lower for traditional commercial establishments. To account for trips on the roadway that would divert from their current path as a result of the shopping center, a pass-by trip reduction was used based on the methodology described in ITE's Trip Generation Handbook for the commercial land uses in the River Oaks Crossing Specific Plan. Based on the method in Trip Generation Handbook, the average pass-by rate for the commercial uses is as follows:

- Shopping Center: 34 percent
- Discount Store: 17 percent (rate also applied to superstore)

Pass-by trip rates are typically applied only to the PM peak hour trip results. Trip generation rates were not discounted for the home improvement superstore and hotel.

Project Trip Generation

As shown in Table 3.2-4, the proposed Project would generate about 32,000 new daily trips, 1,200 new morning peak hour trips, and 2,700 new evening peak hour trips. Please note that trip generation estimates do not account for the potential effects of trip internalization (i.e., the likelihood that some visitors to the site will shop at more than one establishment during a single visit). Thus the trip generation calculations shown on Table 3.2-4 represent a conservative estimate of the site's travel characteristics.

Trip Distribution and Assignment

Project trips have been distributed onto the roadway system to and from the site considering the location and density of residential and other commercial developments within the City of Oakley and in the vicinity, as well as the major travel routes that serve the Project area. The Project trip distribution percentages are shown on Figure 3.2-3.

Figure 3.2-3
Project Trip Distribution

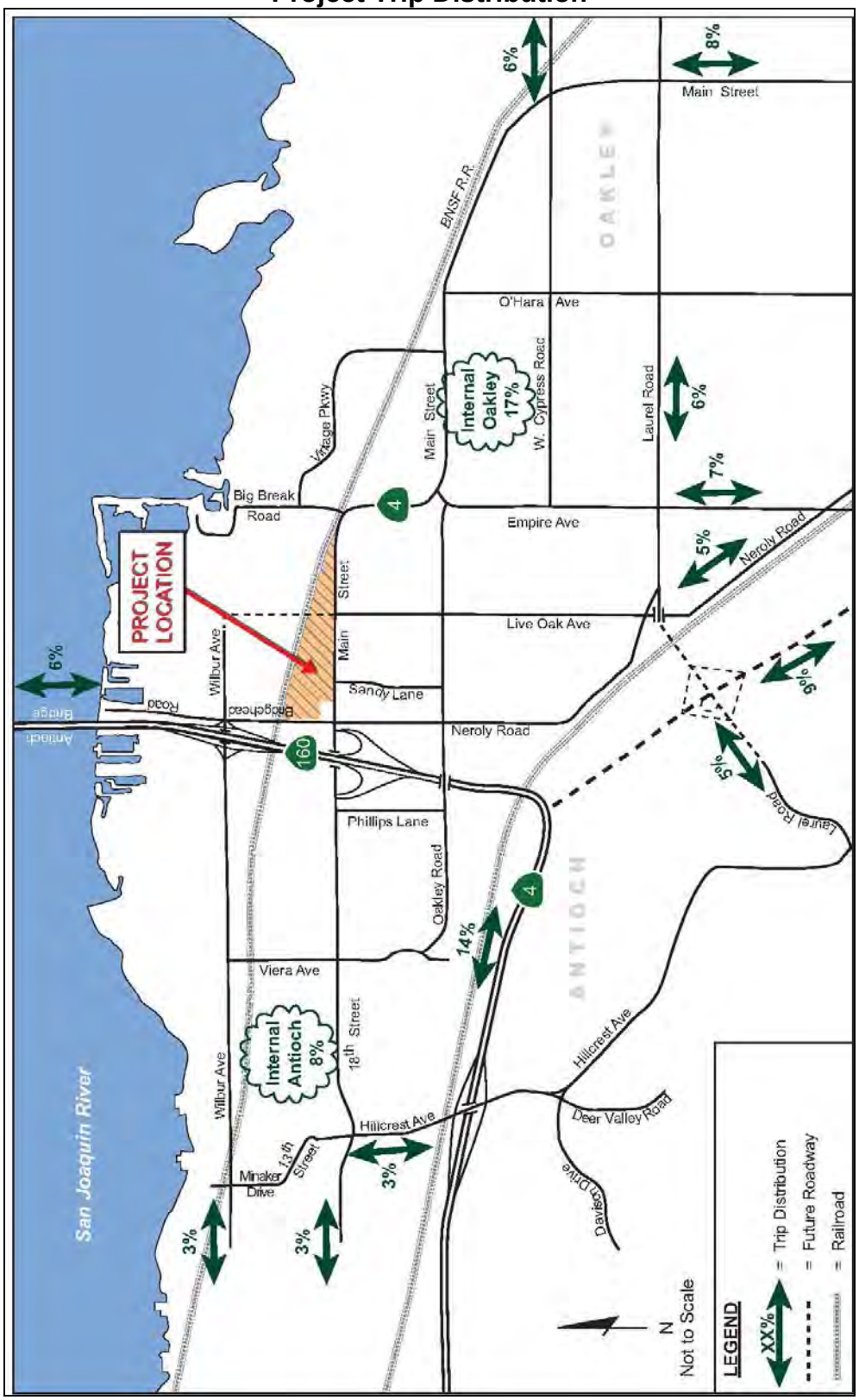


Table 3.2-4
Project Trip Generation

Land Use	Size (sq. ft.)	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Retail	242,000	12,060	152	97	249	539	583	1,122
Pass-by Trips (34%)		-4,100	0	0	0	-191	-191	-382
Discount Superstore	231,000	17,040	325	312	637	697	643	1,340
Pass-by Trips (17%)		-2,900	0	0	0	-114	-114	-228
Discount Store	100,000	5,600	57	27	84	253	253	506
Pass-by Trips (17%)		-950	0	0	0	-43	-43	86
Home Improvement Superstore	167,000	4,980	108	92	200	192	217	409
Pass-by Trips (0%)		0	0	0	0	0	0	0
Hotel	75 rooms	300	18	11	29	23	21	44
Pass-by Trips (0%)		0	0	0	0	0	0	0
Total Project Trips		39,980	660	539	1,199	1,704	1,717	3,421
Total Pass-by Trips		-7,950	0	0	0	-348	-348	-696
Total Net New Trips		**32,030**	**660**	**539**	**1,199**	**1,356**	**1,369**	**2,725**

Source: Fehr & Peers, 2006.

Impacts and Mitigation Measures

The City implements transportation improvements by first including the improvements in the Transportation Impact Fee Program in order to begin collecting adequate funding for the improvements. As funding is secured and the timing of improvements is identified, the projects are included in the City's Five-Year Capital Improvement Program (CIP). The traffic study includes an analysis of two timeframes, Near Term (2010) and Cumulative (2030). For the purposes of this EIR analysis, Near Term impacts can be mitigated by paying the Transportation Impact Fee for improvements that are included in the CIP. In addition, payment of the Transportation Impact Fee is considered adequate mitigation for long-term, Cumulative impacts for improvements that are included in the CIP. However, for required transportation improvements that are not included in the CIP, by the time of issuance of building permits, the Project proponent will be required to install the improvements and will be eligible for reimbursement.

Near Term (2010)

The following impacts have been identified as occurring with implementation of the Project in the Near Term (2010) scenario.

Impact CT-1 - Near Term (Existing + Project) Conditions at Main Street / Bridgehead Road / Neroly Road intersection

The addition of Project traffic would cause the signalized Main Street / Bridgehead Road / Neroly Road intersection (Intersection #11 on Figure 3.2-1) to operate at unacceptable LOS E during the PM peak hour, causing a significant

impact under Near Term With Project conditions (See Table 3.2-5). The intersection would operate at an acceptable LOS under Near Term No Project conditions (LOS C [v/c = 0.77] based on CCTALOS and LOS D [delay = 36 seconds] based on HCM) during the PM peak hour. The proposed Project would cause the intersection to operate at unacceptable LOS E (v/c = 0.92 and delay = 56 seconds) during the PM peak hour. Because the intersection would operate at a deficient level due to Project traffic added to the eastbound and southbound approaches of the intersection, this impact would be ***potentially significant***. This intersection would operate at LOS D (v/c = 0.87 and delay = 42 seconds) during the PM peak hour with implementation of the following mitigation measure, thereby reducing the impact to a ***less-than-significant*** **l**evel.

Mitigation Measure(s):

CT-1 *The Main Street / Bridgehead Road / Neroly Road intersection shall have a second exclusive left-turn lane added, to provide one exclusive right-turn lane, one through lane, and two left-turn lanes on the southbound approach. This improvement is part of the Main Street widening Project, which is included in the City's Five Year Capital Improvement Program and Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit.*

Table 3.2-5
Near-Term Peak Hour Intersection Levels
Of Service Without And With Project

Near Term (2010) Conditions With and Without Project
Intersection Peak Hour LOS Summary

			NEAR TERM NO PROJECT				NEAR TERM WITH PROJECT			
			CCTALOS		HCM		CCTALOS		HCM	
Intersection	Control[1]	Peak Hour	V/C Ratio[2]	LOS	Delay[3]	LOS	V/C Ratio[2]	LOS	Delay[3]	LOS
1. Wilbur Avenue/Minaker Drive	Signal	AM	0.25	A	10	A	0.26	A	10	B
		PM	0.23	A	9	A	0.24	A	9	A
2. Wilbur Avenue/Viera Avenue	SSSC	AM	--	--	2 (14)	A (B)	--	--	2 (15)	A (C)
		PM	--	--	1 (14)	A (B)	--	--	1 (15)	A (C)
3. Wilbur Avenue/SR 160 SB Ramps	SSSC	AM	--	--	3 (11)	A (B)	--	--	4 (12)	A (B)
		PM	--	--	7 (26)	A (D)	--	--	**25 (>60)**	**D (F)**
4. Wilbur Avenue/SR 160 NB Ramps	SSSC	AM	--	--	1 (11)	A (B)	--	--	1 (12)	A (B)
		PM	--	--	3 (16)	A (C)	--	--	3 (20)	A (C)
5. Wilbur Avenue/Bridgehead Road	AWSC	AM	--	--	12	B	--	--	15	B
		PM	--	--	10	A	--	--	15	C
6. East 18th Street/Hillcrest Avenue	Signal	AM	0.33	A	19	B	0.35	A	19	B
		PM	0.57	A	26	C	0.61	B	28	C
7. East 18th Street/Viera Avenue	Signal	AM	0.42	A	7	A	0.45	A	7	A
		PM	0.49	A	6	A	0.56	A	7	A

Table 3.2-5
Near-Term Peak Hour Intersection Levels Of Service Without And With Project

Near Term (2010) Conditions With and Without Project
Intersection Peak Hour LOS Summary

Intersection	Control[1]	Peak Hour	NEAR TERM NO PROJECT CCTALOS V/C Ratio[2]	CCTALOS LOS	HCM Delay[3]	HCM LOS	NEAR TERM WITH PROJECT CCTALOS V/C Ratio[2]	CCTALOS LOS	HCM Delay[3]	HCM LOS
8. East 18th Avenue/Phillips Lane	Signal	AM	0.20	A	14	B	0.22	A	14	B
		PM	0.32	A	16	B	0.36	A	16	B
9. Main Street/SR 160 SB Ramps	Signal	AM	0.41	A	16	B	0.47	A	15	B
		PM	0.46	A	29	C	0.58	A	29	C
10. Main Street/SR 160 NB Ramps	Signal	AM	0.51	A	11	B	0.57	A	11	B
		PM	0.60	A	18	B	0.72	C	23	C
11. Main Street/Bridgehead Road/Neroly Road	Signal	AM	0.39	A	20	B	0.47	A	21	C
		PM	0.77	C	36	D	**0.92**	**E**	**56**	**E**
12. Main Street/Sandy Lane	SSSC/ Signal[4]	AM	--	--	0 (20)	A (C)	0.50	A	6	A
		PM	--	--	**1 (>60)**	**A (F)**	0.70	B	16	B
13. Main Street/Live Oak Avenue	Signal	AM	0.42	A	7	A	0.56	A	17	B
		PM	0.54	A	4	A	0.80	C	31	C
14. Main Street/Big Break Road	Signal	AM	0.46	A	16	B	0.53	A	15	B
		PM	0.54	A	26	C	0.66	B	21	C
15. Oakley Road/Neroly Road	AWSC	AM	--	--	12	B	--	--	13	B
		PM	--	--	15	B	--	--	23	C
16. Oakley Road/Live Oak Avenue	AWSC	AM	--	--	9	A	--	--	12	B
		PM	--	--	10	A	--	--	**>60**	**F**
17. Oakley Road/Empire Avenue	Signal	AM	0.27	A	19	B	0.31	A	19	B
		PM	0.43	A	23	C	0.52	A	26	C
18. Main Street/Empire Avenue	Signal	AM	0.39	A	19	B	0.43	A	20	B
		PM	0.48	A	20	B	0.60	A	22	C
19. Main Street/Vintage Parkway	Signal	AM	0.39	A	11	B	0.44	A	12	B
		PM	0.41	A	11	B	0.50	A	12	B
20. Main Street/O'Hara Avenue	Signal	AM	0.52	A	11	B	0.60	A	14	B
		PM	0.66	B	13	B	0.82	D	23	C
21. Cypress Road/Empire Avenue	Signal	AM	0.24	A	11	B	0.27	A	11	B
		PM	0.33	A	12	B	0.39	A	12	B
22. Cypress Road/Main Street	Signal	AM	0.35	A	22	C	0.39	A	23	C
		PM	0.38	A	34	C	0.46	A	29	C
23. Neroly Road/Live Oak Avenue	AWSC	AM	--	--	12	B	--	--	17	C
		PM	--	--	12	B	--	--	**50**	**F**
24. Laurel Road/Live Oak Avenue	Signal	AM	0.32	A	10	A	0.37	A	13	B
		PM	0.33	A	9	A	0.43	A	13	B
25. Laurel Road/Empire Avenue	Signal	AM	0.49	A	21	C	0.51	A	22	C
		PM	0.61	B	30	C	0.65	B	32	C
26. Bridgehead Road/Project Driveway	N/A/ Signal	AM	--	--	--	--	0.36	A	10	A
		PM	--	--	--	--	0.36	A	11	B
27. Main Street/Project Driveway Center	N/A/ Signal	AM	--	--	--	--	0.47	A	4	A
		PM	--	--	--	--	0.67	B	11	B
28. Main Street/Project Driveway East	N/A/ Signal	AM	--	--	--	--	0.45	A	3	A
		PM	--	--	--	--	0.63	B	7	A

Table 3.2-5
Near-Term Peak Hour Intersection Levels
Of Service Without And With Project

Near Term (2010) Conditions With and Without Project
Intersection Peak Hour LOS Summary

Intersection	Control[1]	Peak Hour	NEAR TERM NO PROJECT				NEAR TERM WITH PROJECT			
			CCTALOS		HCM		CCTALOS		HCM	
			V/C Ratio[2]	LOS	Delay[3]	LOS	V/C Ratio[2]	LOS	Delay[3]	LOS

Notes: **Bold** indicates intersection operating at deficient level of service.

1. Signal = Signalized intersection
   SSSC = Side-street stop-controlled intersection
   AWSC = All-way stop-controlled intersection
2. Volume-to-capacity ratio (V/C) determined for all signalized intersections using the CCTALOS methodology.
3. Average intersection delay is calculated for all signalized and unsignalized intersections using the 2000 *Highway Capacity Manual* (HCM) methods. For side-street stop-controlled intersections, average intersection delay (in seconds per vehicle) is presented. Delay for worst approach is shown in parentheses.
4. Intersections were unsignalized when traffic counts were conducted, but have been signalized since. They have been analyzed as signalized intersections.
5. Intersection will be analyzed under future scenarios.
6. Intersection currently in the process of being signalized by the City of Oakley.

Source: Fehr & Peers, May 2007.

Impact CT-2 - Near Term (Existing + Project) Conditions at Oakley Road / Live Oak Avenue Intersection

The addition of Project traffic would cause the all-way stop-controlled Oakley Road / Live Oak Avenue intersection (Intersection #16 on Figure 3.2-1) to operate at unacceptable LOS F during the PM peak hour (See Table 3.2-5). The forecasted PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The intersection would operate at acceptable LOS A (delay = 10 seconds) under Near Term No Project conditions. The proposed Project would cause the intersection to operate at unacceptable LOS F (delay > 60 seconds) during the PM peak hour. Because the intersection would operate at a deficient level due to Project traffic added to the northbound and southbound approaches of the intersection, this impact would be ***potentially significant***. The impact would be reduced to a ***less-than-significant*** level and the intersection would operate at acceptable LOS (LOS A [v/c = 0.46] based on CCTALOS and LOS B [delay = 16 seconds] based on HCM) during the PM peak hour with implementation of the following mitigation measure.

Mitigation Measure(s):

CT-2 *The Oakley Road / Live Oak Avenue intersection shall be signalized and provided with exclusive left-turn lanes on all approaches. The installation of a signal at the Oakley Road / Live Oak Avenue intersection is included in the City's Transportation Impact Fee Program, but is not currently included in the City's Five*

Year CIP. If the improvement is included in the City's Five Year CIP upon issuance of the first building permit then the Project shall contribute to the mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit. In the event the improvement has not been added to the City's Five Year CIP upon issuance of the first building permit then the Project shall install the improvement and be eligible for reimbursement from the Transportation Impact Fee Program.

Impact CT-3 - Near Term (Existing + Project) Conditions at Neroly Road / Live Oak Avenue Intersection

The addition of Project traffic would cause the all-way stop-controlled Neroly Road / Live Oak Avenue intersection (Intersection #23 on Figure 3.2-1) to operate at unacceptable LOS F during the PM peak hour (See Table 3.2-5). The forecasted PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. This is a significant impact under Near Term With Project conditions. The intersection would operate at acceptable LOS B (delay = 12 seconds) under Near Term No Project conditions. The proposed Project would cause the intersection to operate at unacceptable LOS F (delay = 50 seconds) during the PM peak hour. Because the intersection would operate at a deficient level due to Project traffic added to the southbound through and left-turn, northbound through, and westbound right-turn movements at the intersection, the impact would be ***potentially significant***. This impact would be reduced to a ***less-than-significant*** level and the intersection would operate at acceptable LOS (LOS A [v/c = 0.51] based on CCTALOS and LOS C [delay = 25 seconds] based on HCM) during the PM peak hour with implementation of the following mitigation measure.

Mitigation Measure(s):

CT-3 *The Neroly Road / Live Oak Avenue intersection shall be signalized and provided with exclusive left-turn lanes on the northbound and southbound approaches. The installation of a signal at the Neroly Road / Live Oak Avenue intersection is included in the City's Transportation Impact Fee Program, but is not currently included in the City's Five Year CIP. If the improvement is included in the City's Five Year CIP upon issuance of the first building permit then the Project shall contribute to the mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit. In the event the improvement has not been added to the City's Five Year CIP upon issuance of the first building permit then the Project shall install the improvement and be eligible for reimbursement from the Transportation Impact Fee Program.*

Impact CT-4 - Near Term (Existing + Project) Conditions at Wilbur Avenue / SR 160 Southbound Ramps

The side street stop-controlled Wilbur Avenue / SR 160 southbound ramps (Intersection #3 in Figure 3.2-5) would operate at an acceptable LOS under Near Term No Project conditions (LOS D [delay = 26 seconds] based on HCM) during the PM peak hour. The addition of Project traffic to the intersection would cause the intersection to operate at an unacceptable LOS F during the PM peak hours (See Table 3.2-5). Therefore, the proposed Project would cause the intersection to operate at unacceptable LOS F (delay > 60 seconds) during the PM peak hour. However, thresholds of significance related strictly to LOS levels only apply to existing signalized intersections (see pages 3.2-8 and 3.2-9). Because this intersection is not signalized, the thresholds for significance related to strictly LOS levels are not applicable and cannot be considered significant. In order to be considered a significant impact due to unacceptable LOS levels, an unsignalized intersection must also warrant installation of a traffic signal pursuant to the MUTCD peak hour signal warrant standards. This is discussed in threshold of significance "Cause part C", which is applicable to the impact and states that an impact that causes operations of an unsignalized study intersection to decline from an acceptable level to an unacceptable level, and causes the need for installation of a traffic signal at an unsignalized intersection, should be considered significant. Because this impact does not satisfy the MUTCD peak hour signal warrant with the addition of project-generated traffic, the Project would create a ***less-than-significant*** impact on the Wilbur Avenue / SR 160 southbound ramps.

Impact CT-5 - Development Plan Circulation Impacts

The Project site improvement plans for the proposed Specific Plan are based upon the design guidelines included in section 6.5 of the Specific Plan. The design guidelines set forth in the Specific Plan are intended to promote on-site circulation to reduce hazards associated with transportation in and around the Specific Plan area. The design guidelines listed in section 6.5 of the Specific Plan include the following:

- Sight lines must be preserved for traffic safety.
- Driveway locations on Main Street and Bridgehead Road shall be limited to the number and approximate locations shown in the Development Plan, in order to maintain pedestrian and traffic safety, and to unify the appearance of the street frontage. Adjustments to driveway locations shall be subject to review and approval by the City Engineer, and may require additional traffic analysis as determined by the City Engineer.
- Secondary Retail building envelopes should be accessed by means of the primary center entry drive.

- Access driveways shall provide adequate length to accommodate off-street vehicle stacking needs during times of peak use.
- Where a drive-through lane is required for a commercial use on a large site, it should be located to the side or rear of the property, and separated from any adjacent parking or drive aisles by landscaping.
- Reduce or detain storm water runoff by using vegetated swales between parking aisles and at the perimeter of the parking areas. Provide perforated curbs at swales. Explore the options of using porous paving for parking stalls, especially in more remote areas of parking lots.
- Pedestrian circulation should be clear, safe, inviting and comfortable. Curb extensions and signage can enhance these features.
- Provide separated pedestrian circulation through parking areas. Where the pedestrian pathway acts as a "sidewalk" to the internal "street," separate it from traffic by means of a raised curb and landscaping or bollards.
- Provide adequate lighting for pedestrian safety. One foot-candle is the minimum light level required. Additional surface lighting may be used in special circumstances to enhance pedestrian safety.
- Separate pedestrian circulation from parking and traffic.
- All City standards for parking lot designs, including minimum 24' aisle widths and minimum 9' by 19' parking space dimensions, shall be satisfied and verified at time of permit application.

The traffic and circulation analysis provided by Fehr & Peers concluded that the current development plan would have a ***less-than-significant*** impact in regard to circulation issues on the proposed Project site (for further discussion see the discussion of on-site access and circulation on page 60 of Appendix C). In addition, the above-identified design guidelines included in the Specific Plan would ensure that the final development plans for the proposed Project meet existing standards to provide for safe and adequate on-site circulation.

Impact CT-6 - Inadequate Emergency Access

Factors such as number of access points, roadway width, and proximity to fire stations determine if a site provides sufficient emergency access. The proposed Specific Plan Project provides multiple points of entry from adjacent roadways. If one of these roadways is blocked or obstructed, an emergency vehicle could use an alternate route to access the site. The internal Project roadways with adjacent parking are designed to provide minimum lane widths of 24 feet to adequately satisfy emergency vehicle access. The Project site is located in the East Contra Costa Fire Protection District and the nearest fire station is located on Second Street, south of Main Street, about two miles from the Project site. The proximity of the fire station would allow for timely emergency response to the Project site. Given these considerations, the Project would provide sufficient emergency

access, and a ***less-than-significant*** effect would occur with respect to the provision of emergency access. Additional mitigation would not be required.

Impact CT-7 - Parking Supply

The Specific Plan requires parking based on peak demand plus an additional turnover factor (a supplemental supply of parking intended to minimize the need for vehicles to circulate within the lot in search for available spaces). The addition of a minimum five percent turnover factor (in addition to the number of spaces needed to satisfy estimated ITE peak demand) is considered adequate to allow visitors to easily find an available parking stall and reduce the amount of on-site circulation that could lead to congestion and excessive queuing. Peak parking demand has been estimated using ITE's Parking Generation (2nd Edition), which includes specific parking demands for large-scale retail developments including supercenters. Peak conditions for the combination of uses identified in the Development Plan and listed in Table 2-1 are expected to occur on the weekend and would result in a demand for approximately 3,218 parking stalls, or 4.5 spaces per 1,000 square feet, plus 1.25 spaces per hotel room, plus a minimum five percent turn-over factor based on the 690,000 GFA shown in Development Plan A. Parking requirements would increase proportionately to approximately 3,595 spaces based on the design standards, as development approaches the maximum of 770,000 square feet.

The foregoing Specific Plan standard would produce an aggregate parking supply equivalent to 4.66 spaces per 1,000 gross square feet of floor area (4.5/1,000 SF + 5 percent turn-over), or approximately 17 percent greater than that otherwise required under the City Zoning Ordinance standard of four spaces per 1,000 square feet. Based on the scale of this Project, the proposed Specific Plan would accommodate up to an aggregate 10 percent of the floor space in the Project for restaurant uses. This allocation is consistent with the ITE peak demand plus turnover analysis. Development and operation of commercial uses in accordance with the Specific Plan parking standards would therefore have a ***less-than-significant*** effect on the environment because it provides sufficient parking capacity. Additional mitigation would not be required.

Impact CT-8 – Impacts to Bicycle and Pedestrian Facilities

The proposed Project would include the addition of Class II bicycle lanes and sidewalks to Main Street as part of the current City of Oakley Main Street Widening Project. In addition, sidewalks would be constructed on Bridgehead Road and Live Oak Avenue extension. These improvements would provide pedestrian and bicycle access to the site. The proposed Project Development Plan requires the provision of bicycle parking areas with approved bicycle racks, and identifies multiple locations for safe and convenient bicycle and pedestrian access between the Major and Secondary Retail buildings and the surrounding roadway networks. The Design Guidelines contained in Section 6.5 of the

Specific Plan require that clear and convenient pedestrian and bicycle connections be provided from the public streets, sidewalks, transit stops and trails to all uses on the Project site. In addition, the Design Guidelines require that pedestrian and bicycle pathways be well illuminated, and distinguished from vehicular drives through use of differing paving texture, color and/or materials, including use of raised pedestrian paving surfaces to improve visual differentiation where pedestrian pathways cross vehicular drives. Raised curbs and landscaping or bollards are also required to separate pedestrian circulation through parking areas. These connections and protective measures will serve to minimize potential interaction between vehicles with pedestrians and bicycles. Based on development of the Project site in accordance with the foregoing Design Guidelines and Development Standards contained in the Specific Plan, opportunities for safe and convenient pedestrian and bicycle access would be maximized, and a ***less-than-significant*** effect would occur with respect to pedestrian and bicycle circulation. Additional mitigation would not be required.

Impact CT-9 – Impacts to Public Transportation

Tri-Delta Transit operates several bus routes on Main Street adjacent to the Project site. The proposed Specific Plan would require coordination with Tri-Delta Transit as part of each phase of development, to provide bus pullouts and bus amenities, including shelters on Main Street. Pedestrian pathways are required by the Design Guidelines to provide safe and convenient connections between the bus stops and the Major and Secondary Retailers on-site. Based on development of the Project site, in accordance with the foregoing Design Guidelines and Development Standards contained in the Specific Plan, opportunities for accommodation of safe and convenient access to public transit would be maximized, and a ***less-than-significant*** effect would occur with respect to accommodation of public transportation. Additional mitigation would not be required.

<u>Cumulative (2030)</u>

The following impacts have been identified as occurring with implementation of the Project in the Cumulative (2030) scenario. As discussed above, the Cumulative (2030) scenario has been analyzed for two scenarios: (1) the connector ramps between the SR 4 Bypass and the SR 160 have been constructed and (2) the connector ramps between the SR 4 Bypass and the SR 160 have not been constructed.

Impact CT-10 – Cumulative Plus Project (2030) Impacts to Wilbur Avenue / SR 160 Southbound Ramps

With Connector Ramps

The addition of Project traffic to the cumulative conditions at the side street stop-controlled Wilbur Avenue / SR 160 southbound ramps (Intersection #3 in Figure 3.2-1) would contribute to the unacceptable LOS F conditions during the PM peak hour (See Table 3.2-6). The forecasted PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The stop-controlled southbound approach of the intersection would operate at unacceptable LOS F (delay > 60 seconds) during the PM peak hour regardless of the proposed Project. Because the proposed Project would contribute to the unacceptable conditions by adding traffic to the intersection, the Project would result in a ***potentially significant*** impact.

Table 3.2-6
Cumulative Peak Hour Traffic Conditions
Without and With Project

Cumulative (2030) Conditions
Intersection Peak Hour LOS Summary

Intersection	Control[1]	Peak Hour	CUMULATIVE NO PROJECT				CUMULATIVE WITH PROJECT			
			CCTALOS		HCM		CCTALOS		HCM	
			V/C Ratio[2]	LOS	Delay[3]	LOS	V/C Ratio[2]	LOS	Delay[3]	LOS
1. Wilbur Avenue/Minaker Drive	Signal	AM PM	0.35 0.38	A A	11 9	B A	0.35 0.39	A A	11 9	B A
2. Wilbur Avenue/Viera Avenue	SSSC	AM PM	-- --	-- --	3 (26) 2 **(37)**	A (D) A **(E)**	-- --	-- --	3 (29) 3 **(50)**	A (D) A **(F)**
3. Wilbur Avenue/SR 160 SB Ramps	SSSC	AM PM	-- --	-- --	17 **(>60)** **>60 (>60)**	C **(F)** **F (F)**	-- --	-- --	**43 (>60)** **>60 (>60)**	**E (F)** **F (F**)
4. Wilbur Avenue/SR 160 NB Ramps	SSSC	AM PM	-- --	-- --	13 **(39)** 8 **(53)**	B **(E)** A **(F)**	-- --	-- --	18 **(59)** 12 **(>60)**	C **(F)** B **(F)**
5. Wilbur Avenue/Bridgehead Road	AWSC	AM PM	-- --	-- --	**>60** **41**	**F** **E**	-- --	-- --	**>60** **>60**	**F** **F**
6. East 18th Street/Hillcrest Avenue	Signal	AM PM	0.44 0.72	A C	21 40	C D	0.46 0.75	A C	21 44	C D
7. East 18th Street/Viera Avenue	Signal	AM PM	0.40 0.51	A A	7 7	A A	0.42 0.55	A A	7 8	A A
8. East 18th Avenue/Phillips Lane	Signal	AM PM	0.29 0.50	A A	19 24	B C	0.31 0.57	A A	14 24	B C
9. Main Street/SR 160 SB Ramps	Signal	AM PM	0.53 0.72	A C	18 28	B C	0.60 0.89	A D	19 43	B D
10. Main Street/SR 160 NB Ramps	Signal	AM PM	0.58 0.69	A B	15 22	B C	0.67 0.83	B D	15 40	B D
11. Main Street/Bridgehead Road/Neroly Road	Signal	AM PM	0.51 0.70	A B	21 24	C C	0.61 0.81	B D	24 28	C C
12. Main Street/Sandy Lane	Signal	AM PM	0.32 0.53	A A	 6	A A	0.44 0.71	A C	9 21	A C

Table 3.2-6
Cumulative Peak Hour Traffic Conditions
Without and With Project

Cumulative (2030) Conditions
Intersection Peak Hour LOS Summary

Intersection	Control[1]	Peak Hour	CUMULATIVE NO PROJECT				CUMULATIVE WITH PROJECT			
			CCTALOS		HCM		CCTALOS		HCM	
			V/C Ratio[2]	LOS	Delay[3]	LOS	V/C Ratio[2]	LOS	Delay[3]	LOS
13. Main Street/Live Oak Avenue	Signal	AM	0.57	A	22	C	0.67	B	21	C
		PM	0.60	B	25	C	0.84	D	41	D
14. Main Street/Big Break Road	Signal	AM	0.73	C	23	C	0.79	C	25	C
		PM	0.75	C	29	C	0.86	D	33	D
15. Oakley Road/Neroly Road	AWSC	AM	--	--	**40**	**E**	--	--	**47**	**E**
		PM	--	--	**49**	**E**	--	--	**>60**	**F**
16. Oakley Road/Live Oak Avenue	AWSC	AM	--	--	27	D	--	--	**>60**	**F**
		PM	--	--	**>60**	**F**	--	--	**>60**	**F**
17. Oakley Road/Empire Avenue	Signal	AM	0.47	A	21	C	0.52	A	23	C
		PM	0.67	B	34	C	0.78	C	47	D
18. Main Street/Empire Avenue	Signal	AM	0.58	A	24	C	0.64	B	26	C
		PM	0.87	D	49	D	**0.97**	**E**	**66**	**E**
19. Main Street/Vintage Parkway	Signal	AM	0.24	A	8	A	0.28	A	8	A
		PM	0.30	A	7	A	0.38	A	7	A
20. Main Street/O'Hara Avenue[4]	Signal	AM	0.43	A	13	B	0.51	A	13	B
		PM	0.66	B	16	B	0.81	D	25	C
21. Cypress Road/Empire Avenue	Signal	AM	0.45	A	13	B	0.49	A	15	B
		PM	0.50	A	17	B	0.58	A	19	B
22. Cypress Road/Main Street	Signal	AM	0.69	B	32	C	0.73	C	39	D
		PM	0.77	C	52	D	0.84	D	53	D
23. Neroly Road/Live Oak Avenue	AWSC	AM	--	--	31	D	--	--	**44**	**E**
		PM	--	--	24	C	--	--	**56**	**F**
24. Laurel Road/Live Oak Avenue	Signal	AM	0.56	A	15	B	0.58	A	16	B
		PM	0.58	A	15	B	0.62	B	16	B
25. Laurel Road/Empire Avenue	Signal	AM	**0.98**	**E**	**61**	**E**	**0.99**	**E**	**66**	**E**
		PM	**0.93**	**E**	**79**	**E**	**0.98**	**E**	**98**	**F**
26. Bridgehead Road/Project Driveway	N/A/Signal	AM	--	--	--	--	0.44	A	8	A
		PM	--	--	--	--	0.37	A	12	B
27. Main Street/Project Driveway Center	N/A/Signal	AM	--	--	--	--	0.40	A	3	A
		PM	--	--	--	--	0.59	A	11	B
28. Main Street/Project Driveway West	N/A/Signal	AM	--	--	--	--	0.42	A	3	A
		PM	--	--	--	--	0.55	A	7	A
29. Live Oak Avenue/Project Driveway	N/A/Signal	AM	--	--	--	--	0.31	A	10	B
		PM	--	--	--	--	0.61	B	18	B

Notes: Bold indicates intersection operating at deficient level of service.

1. Signal = Signalized intersection
   SSSC = Side-street stop-controlled intersection
   AWSC = All-way stop-controlled intersection
2. Volume-to-capacity ratio (V/C) determined for all signalized intersections using the CCTALOS methodology.
3. Average intersection delay is calculated for all signalized and unsignalized intersections using the 2000 *Highway Capacity Manual* (HCM) methods. For side-street stop-controlled intersections, average intersection delay (in seconds per vehicle) is presented. Delay for worst approach is shown in parentheses.
4. Intersections were unsignalized when traffic counts were conducted, but have been signalized since. They have been analyzed as signalized intersections.
5. Intersection will be analyzed under future scenarios.
6. Intersection currently in the process of being signalized by the City of Oakley.

Source: Fehr & Peers, May 2007.

The Wilbur Avenue/SR 160 southbound ramps intersection would operate at acceptable LOS C (v/c = 0.74 and delay = 29 seconds) during the PM peak hour with implementation of the following mitigation measure. Analysis using traffic simulation software indicates that with coordination of signal timing and phasing at this intersection with the required signals at Wilbur Avenue / SR 160 northbound ramps and Wilbur Avenue / Bridgehead Road, the three intersections as a system would operate at acceptable LOS and queues would not spill back. This impact would therefore be reduced to a less-than-significant level with the implementation of Mitigation Measure CT-10, below. However, because the improvements required under this measure are outside the jurisdiction of the City of Oakley, their implementation cannot be guaranteed with respect to development of the Project site, this impact would result in a ***significant and unavoidable*** effect.

Without Connector Ramps

The addition of Project traffic to the cumulative conditions at the side street stop-controlled Wilbur Avenue / SR 160 southbound ramps (Intersection #3) would contribute to the unacceptable LOS F conditions during both AM and PM peak hours (See Table 3.2-7). The forecasted PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The stop-controlled southbound approach of the intersection would operate at unacceptable LOS F (delay > 60 seconds) during both AM and PM peak hours regardless of the Project. Because the Project would contribute to the unacceptable conditions by adding traffic to the intersection, the impact would be ***potentially significant***.

The Wilbur Avenue/SR 160 southbound ramps intersection would operate at acceptable LOS during the AM peak hour (LOS A [v/c = 0.56 based on CCTALOS] and LOS B [delay =16 seconds] based on HCM) and acceptable LOS C (v/c = 0.75 and delay = 28 seconds) during the PM peak hour with implementation of Mitigation Measure CT-10. However, as stated above, because the improvements required under this measure are outside the jurisdiction of the City of Oakley, their implementation cannot be guaranteed with respect to development of the Project site, this impact would result in a ***significant and unavoidable*** effect.

Mitigation Measure(s) With and Without Connector Ramps:

CT-10 *The Wilbur Avenue / SR 160 southbound ramps intersection shall be signalized. Due to its proximity to the Wilbur Avenue / SR 160 northbound ramps and the Wilbur Avenue / Bridgehead Road intersections, the three intersections shall be signalized at the same time and signal timings and phasings shall be coordinated. The SR 160 ramp intersections are located in the City of Antioch, and the need for this improvement is dependent on the timing of other cumulative projects in Oakley and Antioch. In order to facilitate the*

construction of improvements on those transportation facilities within the control of Antioch, the City will collect, through development agreements, a fair share payment with the issuance of each building permit associated with the project. The City will hold the payments until such time improvements are installed at the subject intersection at which time the City will use the held payments to reimburse the applicable entity. The fair share amount shall be a fee payment based on the project's proportionate contribution of traffic to the subject intersection, which has been estimated to be approximately 36%. This amount has been estimated assuming maximum build out of the shopping center (770,000 square feet).

Table 3.2-7
Cumulative Peak Hour No Ramp Traffic Conditions
Without and With Project

Cumulative (2030) No Ramps Without and With Project Conditions
Intersection Peak Hour LOS Summary

Intersection	Control[1]	Peak Hour	CUMULATIVE NO PROJECT				CUMULATIVE WITH PROJECT			
			CCTALOS		HCM		CCTALOS		HCM	
			V/C Ratio[2]	LOS	Delay[3]	LOS	V/C Ratio[2]	LOS	Delay[3]	LOS
1. Wilbur Avenue/Minaker Drive	Signal	AM	0.35	A	11	B	0.36	A	11	B
		PM	0.38	A	9	A	0.40	A	9	A
2. Wilbur Avenue/Viera Avenue	SSSC	AM	--	--	3 (35)	A (D)	--	--	4 (41)	A **(E)**
		PM	--	--	2 **(41)**	A **(E)**	--	--	4 (**59**)	A **(F)**
3. Wilbur Avenue/SR 160 SB Ramps	SSSC	AM	--	--	**>60**	**F (F)**	--	--	**>60**	**F (F)**
		PM	--	--	**(>60)**	**F (F)**	--	--	**(>60)**	**F (F)**
					>60				**>60**	
					(>60)				**(>60)**	
4. Wilbur Avenue/SR 160 NB Ramps	SSSC	AM	--	--	20	C **(F)**	--	--	27	D **(F)**
		PM	--	--	**(>60)**	A **(F)**	--	--	**(>60)**	B **(F)**
					10				15	
					(>60)				**(>60)**	
5. Wilbur Avenue/Bridgehead Road	AWSC	AM	--	--	**>60**	**F**	--	--	**>60**	**F**
		PM	--	--	**>60**	**F**	--	--	**>60**	**F**
6. East 18th Street/Hillcrest Avenue	Signal	AM	0.49	A	21	C	0.51	A	23	C
		PM	0.74	C	40	D	0.78	C	42	D
7. East 18th Street/Viera Avenue	Signal	AM	0.42	A	7	A	0.44	A	7	A
		PM	0.51	A	7	A	0.55	A	8	A
8. East 18th Avenue/Phillips Lane	Signal	AM	0.31	A	19	B	0.34	A	19	B
		PM	0.52	A	24	C	0.59	A	21	C
9. Main Street/SR 160 SB Ramps	Signal	AM	0.54	A	17	B	0.59	A	17	B
		PM	0.70	B	27	C	0.80	C	30	C
10. Main Street/SR 160 NB Ramps	Signal	AM	0.55	A	11	B	0.60	A	11	B
		PM	0.69	B	21	C	0.78	C	28	C
11. Main Street/Bridgehead Road/Neroly Road	Signal	AM	0.64	B	27	C	0.72	C	32	C
		PM	0.83	D	44	D	**0.95**	**E**	**62**	**E**
12. Main Street/Sandy Lane	Signal	AM	0.33	A	5	A	0.42	A	10	A
		PM	0.54	A	6	A	0.70	B	13	B
13. Main Street/Live Oak Avenue	Signal	AM	0.62	B	24	C	0.76	C	36	D
		PM	0.67	B	28	C	**0.92**	**E**	**64**	**E**

Table 3.2-7
Cumulative Peak Hour No Ramp Traffic Conditions
Without and With Project

Cumulative (2030) No Ramps Without and With Project Conditions
Intersection Peak Hour LOS Summary

Intersection	Control[1]	Peak Hour	CUMULATIVE NO PROJECT				CUMULATIVE WITH PROJECT			
			CCTALOS		HCM		CCTALOS		HCM	
			V/C Ratio[2]	LOS	Delay[3]	LOS	V/C Ratio[2]	LOS	Delay[3]	LOS
14. Main Street/Big Break Road	Signal	AM	0.73	C	21	C	0.80	C	22	C
		PM	0.77	C	25	C	0.89	D	34	C
15. Oakley Road/Neroly Road	AWSC	AM	--	--	**>60**	**F**	--	--	**>60**	**F**
		PM	--	--	**>60**	**F**	--	--	**>60**	**F**
16. Oakley Road/Live Oak Avenue	AWSC	AM	--	--	**>60**	**F**	--	--	**>60**	**F**
		PM	--	--	**>60**	**F**	--	--	**>60**	**F**
17. Oakley Road/Empire Avenue	Signal	AM	0.54	A	22	C	0.58	A	23	C
		PM	0.74	C	45	D	0.83	D	53	D
18. Main Street/Empire Avenue	Signal	AM	0.60	A	26	C	0.65	B	28	C
		PM	**0.91**	**E**	**56**	**E**	**1.03**	**F**	**80**	**F**
19. Main Street/Vintage Parkway	Signal	AM	0.24	A	8	A	0.28	A	8	A
		PM	0.30	A	7	A	0.38	A	7	A
20. Main Street/O'Hara Avenue	Signal	AM	0.43	A	13	B	0.51	A	14	B
		PM	0.66	B	16	B	0.83	D	27	C
21. Cypress Road/Empire Avenue	Signal	AM	0.48	A	13	B	0.51	A	15	B
		PM	0.53	A	18	B	0.60	A	19	B
22. Cypress Road/Main Street	Signal	AM	0.69	B	32	C	0.73	C	42	D
		PM	0.77	C	50	D	0.84	D	53	D
23. Neroly Road/Live Oak Avenue	AWSC	AM	--	--	**>60**	**F**	--	--	**>60**	**F**
		PM	--	--	**>60**	**F**	--	--	**>60**	**F**
24. Laurel Road/Live Oak Avenue	Signal	AM	0.63	B	21	C	0.67	B	28	C
		PM	0.69	B	21	C	0.78	C	29	C
25. Laurel Road/Empire Avenue	Signal	AM	**1.03**	**F**	**75**	**E**	**1.04**	**F**	**80**	**E**
		PM	**1.02**	**F**	**95**	**F**	**1.06**	**F**	**>100**	**F**
26. Bridgehead Road/Project Driveway	N/A/Signal	AM	--	--	--	--	0.50	A	8	A
		PM	--	--	--	--	0.43	A	11	B
27. Main Street/Project Driveway Center	N/A/Signal	AM	--	--	--	--	0.39	A	2	A
		PM	--	--	--	--	0.58	A	9	A
28. Main Street/Project Driveway East	N/A/Signal	AM	--	--	--	--	0.42	A	2	A
		PM	--	--	--	--	0.57	A	5	A
29. Live Oak Avenue/Project Driveway	N/A/Signal	AM	--	--	--	--	0.41	A	10	A
		PM	--	--	--	--	0.80	C	38	D

Bold indicates intersection operating at deficient level of service.

1. Signal = Signalized intersection
   SSSC = Side-street stop-controlled intersection
   AWSC = All-way stop-controlled intersection
2. Volume-to-capacity ratio (V/C) determined for all signalized intersections using the CCTALOS methodology.
3. Average intersection delay is calculated for all signalized and unsignalized intersections using the 2000 *Highway Capacity Manual* (HCM) methods. For side-street stop-controlled intersections, average intersection delay (in seconds per vehicle) is presented. Delay for worst approach is shown in brackets.

SOURCE: Fehr & Peers: May, 2007

Impact CT-11 – Cumulative Plus Project (2030) Impacts to Wilbur Avenue / SR 160 Northbound Ramps

With Connector Ramps

The addition of Project traffic to the side street stop-controlled Wilbur Avenue / SR 160 northbound ramps (Intersection #4 in Figure 3.2-1) would contribute to the unacceptable LOS F conditions during both AM and PM peak hours (See Table 3.2-6). The forecasted AM and PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The stop-controlled northbound approach of the intersection would operate at unacceptable LOS E (delay = 39 seconds) during the AM peak hour and LOS F (delay = 53 seconds) during the PM peak hour under Cumulative No Project conditions. The proposed Project would contribute to the unacceptable conditions by adding traffic to the intersection and cause the intersection to operate at unacceptable LOS F (delay > 60 seconds) during both AM and PM peak hours. Therefore, the implementation of the Project would result in a ***potentially significant*** impact to the Wilbur Avenue / SR 160 Northbound Ramps intersection.

Subject to mitigation measure CT-11, this intersection would operate at acceptable LOS during both AM and PM peak hours (the intersection would operate at LOS A [v/c = 0.44 during the AM peak hour and v/c = 0.46 during the PM peak hour] based on CCTALOS and would operate at LOS B [delay = 12 seconds during the AM peak hour and delay = 15 seconds during the PM peak hour] based on HCM). Analysis using traffic simulation software indicates that with coordination of signal timing and phasing at this intersection with the required signals at the Wilbur Avenue/SR 160 southbound ramps and the Wilbur Avenue/Bridgehead Road intersections, the three intersections as a system would operate at acceptable LOS and queues would not spill back from any of the three intersections. This impact would therefore be reduced to a less-than-significant level with the implementation of Mitigation Measure CT-11, below. However, because the improvements required under this measure are outside the jurisdiction of the City of Oakley, their implementation cannot be guaranteed with respect to development of the Project site, this impact would result in a ***significant and unavoidable*** effect.

Without Connector Ramps

The addition of Project traffic to side street stop-controlled Wilbur Avenue / SR 160 northbound ramps (Intersection #4) would contribute to the unacceptable LOS F conditions during both AM and PM peak hours for the Cumulative Plus Project (2030) conditions (See Table 3.2-7). The forecasted AM and PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The stop-controlled northbound approach of the intersection would operate at unacceptable LOS F (delay > 60 seconds) during both AM and PM peak hours regardless of the Project. The Project would contribute to the

unacceptable conditions by adding traffic to the intersection. Therefore, the implementation of the Project would result in a ***potentially significant*** impact to the Wilbur Avenue / SR 160 Northbound Ramps intersection.

The Wilbur Avenue / SR 160 northbound ramps intersection would operate at acceptable LOS during both AM and PM peak hours (the intersection would operate at LOS A [v/c = 0.47 during the AM peak hour and v/c = 0.48 during the PM peak hour] based on CCTALOS and would operate at LOS A [delay = 9 seconds] during the AM peak hour and LOS B [delay = 14 seconds] during the PM peak hour] based on HCM) with implementation of the following mitigation measure. This impact would therefore be reduced to a less-than-significant level with the implementation of Mitigation Measure CT-11. However, because the improvements required under this measure are outside the jurisdiction of the City of Oakley, their implementation cannot be guaranteed with respect to development of the Project site, this impact would result in a ***significant and unavoidable*** effect.

Mitigation Measure(s) With and Without Connector Ramps:

CT-11 *The Wilbur Avenue / SR 160 northbound ramps intersection shall be signalized. Due to its proximity to the Wilbur Avenue / SR 160 southbound ramps and Wilbur Avenue / Bridgehead Road intersections, the three intersections shall be signalized at the same time and signal timings and phasings shall be coordinated. The SR 160 ramp intersections are located in the City of Antioch, and the need for this improvement is dependent on the timing of other cumulative projects in Oakley and Antioch. In order to facilitate the construction of improvements on those transportation facilities within the control of Antioch, the City will collect, through development agreements, a fair share payment with the issuance of each building permit associated with the project. The City will hold the payments until such time improvements are installed at the subject intersection at which time the City will use the held payments to reimburse the applicable entity. The fair share amount shall be a fee payment based on the project's proportionate contribution of traffic to the subject intersection, which has been estimated to be approximately 28%. This amount has been estimated assuming maximum build out of the shopping center (770,000 square feet).*

Impact CT-12 – Cumulative Plus Project (2030) Impacts to Wilbur Avenue / Bridgehead Road

With Connector Ramps

The addition of Project traffic to the all-way stop-controlled intersection at Wilbur Avenue / Bridgehead Road (Intersection #5 in Figure 3.2-1) would contribute to the unacceptable LOS F conditions during the AM peak hour and cause the intersection to operate at LOS F during the PM peak hour (See Table 3.2-6). The forecasted AM and PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The all-way stop-controlled intersection would operate at unacceptable LOS F (delay > 60 seconds) during the AM peak hour and LOS E (delay = 41 seconds) during the PM peak hour under Cumulative No Project conditions. Because the proposed Project would contribute to the unacceptable conditions by adding additional traffic to the intersection, causing the intersection to operate at unacceptable LOS F (delay > 60 seconds) during both AM and PM peak hours, the impact would be ***potentially significant***.

With implementation of mitigation measure CT-12, this intersection would operate at acceptable LOS during both AM and PM peak hours (the intersection would operate at LOS B [v/c = 0.62 during the AM peak hour and v/c = 0.61 during the PM peak hour] based on CCTALOS and would operate at LOS C [delay = 26 seconds during the AM peak hour and delay = 20 seconds during the PM peak hours] based on HCM). Analysis using traffic simulation software indicates that with coordination of signal timing and phasing at this intersection with the required signals at Wilbur Avenue/SR 160 northbound ramps and Wilbur Avenue/SR 160 southbound ramps, the three intersections as a system would operate at acceptable LOS and queues would not spill back. This impact would therefore be reduced to a ***less-than-significant*** level with the implementation of mitigation measure CT-12.

Without Connector Ramps

The addition of Project traffic to all-way stop-controlled intersection at Wilbur Avenue / Bridgehead Road (Intersection #5) would contribute to the unacceptable LOS F conditions during both AM and PM peak hours (See Table 3.2-7). The forecasted AM and PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The all-way stop-controlled intersection would operate at unacceptable LOS F (delay > 60 seconds) during both AM and PM peak hours regardless of the Project. The Project would contribute to the unacceptable conditions by adding traffic to the intersection during both AM and PM peak hours, resulting in a ***potentially significant*** impact.

The Wilbur Avenue / Bridgehead Road intersection would operate at acceptable LOS during both AM and PM peak hours (during the AM peak hour, the

intersection would operate at LOS C [v/c = 0.77] based on CCTALOS and LOS D [delay = 46 seconds]; and during the PM peak hour, the intersection would operate at LOS B [v/c = 0.70] based on CCTALOS and LOS C [delay = 34 seconds]) with implementation of the following mitigation measure. This impact would therefore be reduced to a ***less-than-significant*** level with the implementation of Mitigation Measure CT-12, below.

Mitigation Measure(s) With and Without Connector Ramps:

CT-12 *The Wilbur Avenue / Bridgehead Road intersection shall be signalized and provided with exclusive left-turn lanes on the northbound and westbound approaches. Due to its proximity to the Wilbur Avenue/SR 160 northbound ramps and Wilbur Avenue/ SR 160 southbound ramps intersections, the three intersections shall be signalized at the same time and signal timings and phasing shall be coordinated. The installation of a signal at the Wilbur Avenue/Bridgehead Road intersection is included in the City's Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit.*

Impact CT-13 - Cumulative Plus Project (2030) Impacts to Main Street / Neroly Road / Bridgehead Road

With Connector Ramps

The intersection of Main Street / Neroly Road / Bridgehead Road (Intersection #11 in Figure 3.2-1) would operate at acceptable LOS levels for the cumulative (2030) traffic conditions with or without the Project with the SR 4 Bypass and SR 160 connector ramps in place (See Table 3.2-6). Therefore, should the connector ramps be constructed the Project would have a ***less-than-significant*** impact.

Without Connector Ramps

The addition of Project traffic would cause the signalized intersection at Main Street / Neroly Road / Bridgehead Road (Intersection #11 in Figure 3.2-1) to operate at unacceptable LOS E during the PM peak hour, causing a significant impact under Cumulative With Project conditions (See Table 3.2-7). The intersection would operate at an acceptable LOS D under Cumulative No Project conditions (v/c = 0.83 and delay = 44 seconds) during the PM peak hour. Because the Project would cause the intersection to operate at unacceptable LOS E (v/c = 0.95 and delay = 62 seconds) during the PM peak hour, the impact would be ***potentially significant***.

Conclusion

For the scenario where the SR 4 Bypass and SR 160 connector ramps are not constructed, the intersection would operate at a deficient level in the cumulative scenario due to Project traffic. As outlined above, this impact is not significant should the connector ramps be constructed. The Main Street /Neroly Road /Bridgehead Road intersection would operate at LOS D (v/c = 0.86 and delay = 46 seconds) during the PM peak hour with implementation of the following mitigation measure. This impact would be reduced to a ***less-than-significant*** level with implementation of the following mitigation measure.

Mitigation Measure(s) Without Connector Ramps:

CT-13 *Should the connector ramps not be funded prior to the issuance of building permits, mitigation of the unacceptable conditions at Main Street / Neroly Road / Bridgehead Road intersection will be achieved by converting the second exclusive left-turn lane to a share left-turn/through lane on the northbound approach. The above improvement to the Main Street / Neroly Road / Bridgehead Road intersection is included in the City's Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit.*

Impact CT-14 – Cumulative Plus Project (2030) Impacts to Main Street / Live Oak Avenue

With Connector Ramps

The addition of Project traffic would not cause the signalized intersection at Main Street / Live Oak Avenue (Intersection #13 in Figure 3.2-1) to operate at an unacceptable level. Therefore, the Project would have a ***less-than-significant*** impact under the Cumulative With Ramps With Project conditions.

Without Connector Ramps

The addition of Project traffic would cause the signalized intersection at Main Street / Live Oak Avenue (Intersection #13 in Figure 3.2-1) to operate at unacceptable LOS E during the PM peak hour, causing a significant impact under Cumulative No Ramps With Project conditions (See Table 3.2-7). The intersection would operate at an acceptable LOS under Cumulative No Ramps No Project conditions (LOS B [v/c = 0.67] based on CCTALOS and LOS C [delay = 28 seconds] based on HCM) during the PM peak hour. Because the Project would cause the intersection to operate at unacceptable LOS E (v/c = 0.92 and delay = 64 seconds) during the PM peak hour, and the intersection would

operate at a deficient level due to Project traffic added to the all approaches of the intersection, the impact would be ***potentially significant***.

Conclusion

As stated above, the Cumulative With Ramps With Project conditions would result in a ***less-than-significant*** impact. With implementation of mitigation measure CT-14, below, the Main Street / Live Oak Avenue intersection would operate at LOS D (v/c = 0.85 and delay = 48 seconds) during the PM peak hour, and the impact would be reduced to a ***less-than-significant*** level for the Cumulative Without Connector Ramps With Project scenario as well.

Mitigation Measure(s) Without Connector Ramps:

CT-14 *Should the connector ramps not be funded prior to the issuance of building permits, mitigation of the unacceptable conditions at Main Street / Live Oak Avenue intersection will be achieved by adding an exclusive right-turn lane on the southbound approach. The proposed Project shall include the construction of this improvement prior to issuance of the Certificate of Occupancy.*

Impact CT-15 - Cumulative Plus Project (2030) Impacts to Oakley Road / Neroly Road

With Connector Ramps

The addition of Project traffic to the all-way stop-controlled intersection at Oakley Road / Neroly Road (Intersection #15 in Figure 3.2-1) would contribute to unacceptable LOS E conditions during the AM peak hour and cause the intersection to operate at unacceptable LOS F during the PM peak hour (See Table 3.2-6). The forecasted AM and PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The intersection would operate at unacceptable LOS E during both AM and PM peak hours (delay = 40 seconds during the AM peak hour and delay = 49 seconds during the PM peak hour) under Cumulative No Project conditions. The intersection would operate at a deficient level regardless of the Project; however, the Project would result in a further decline in an already unacceptable LOS at this intersection by adding traffic to the northbound and southbound approaches. Because the Project would contribute to unacceptable LOS E (delay = 47 seconds) during the AM peak hour and cause the intersection to operate at unacceptable LOS F (delay > 60 seconds) during the PM peak hour, the impact would be ***potentially significant***.

This impact would be reduced to a ***less-than-significant*** level, and the intersection would operate at an acceptable service level (LOS A [v/c = 0.50 during the AM peak hour and v/c = 0.47 during the PM peak hour] based on CCTALOS and LOS C [delay = 25 seconds during the AM peak hour and delay =

29 seconds during the PM peak hour] based on HCM), with implementation of mitigation measure CT-15.

Without Connector Ramps

The addition of Project traffic to the all-way stop-controlled intersection at Oakley Road / Neroly Road (Intersection #15) would contribute to unacceptable LOS F conditions during both AM and PM peak hours (See Table 3.2-7). The forecasted AM and PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. This is a significant impact under Cumulative No Ramps With Project conditions because the Project would contribute to the unacceptable LOS at the intersection. The all-way stop-controlled intersection would operate at unacceptable LOS F (delay > 60 seconds) during both AM and PM peak hours regardless of the Project. Because the Project would contribute to the already unacceptable conditions by adding additional northbound and southbound traffic to the intersection during both AM and PM peak hours, the impact would be ***potentially significant***.

The Oakley Road / Neroly Road intersection would operate at acceptable LOS (LOS A [v/c = 0.59 during the AM peak hour and v/c = 0.54 during the PM peak hour] based on CCTALOS and LOS C [delay = 29 seconds during the AM peak hour and delay = 27 seconds during the PM peak hour] based on HCM) with implementation of the follow mitigation measure. This impact would therefore be reduced to a ***less-than-significant*** level with the implementation of mitigation measure CT-15.

Mitigation Measure(s) With and Without Connector Ramps:

CT-15 *The Oakley Road / Neroly Road intersection shall be signalized and provided with exclusive left-turn lanes on all approaches. The installation of a signal at the Oakley Road / Neroly Road intersection, which is designed with exclusive left-turn lanes on all approaches, is included in the City's Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit.*

Impact CT-16 – Cumulative Plus Project (2030) Impacts to Oakley Road / Live Oak Avenue

With Connector Ramps

The addition of Project traffic would cause the all-way stop-controlled intersection at Oakley Road / Live Oak Avenue (Intersection #16 in Figure 3.2-1) to operate at unacceptable LOS F during the AM peak hour and contribute to unacceptable

LOS F conditions during the PM peak hour (See Table 3.2-6). The forecasted AM and PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The intersection would operate at acceptable LOS D (delay = 27 seconds) during the AM peak hour and unacceptable LOS F (delay > 60 seconds) during the PM peak hour under Cumulative No Project conditions. The intersection would operate at a deficient level regardless of the Project; however, the Project would result in a further decline in an already unacceptable LOS at this intersection by adding traffic to the northbound and southbound approaches of the intersection. Because the Project would cause the intersection to operate at unacceptable LOS F (delay > 60 seconds) during the AM peak hour and contribute to LOS F (delay > 60 seconds) conditions during the PM peak hour, the impact would be ***potentially significant***.

This impact would be reduced to a ***less-than-significant*** level, and the intersection would operate at an acceptable service level (LOS A [v/c = 0.56] based on CCTALOS and LOS C [delay = 25 seconds] based on HCM during the AM peak hour; and LOS B [v/c = 0.67] based on CCTALOS, and LOS D [delay = 40 seconds] based on HCM during the PM peak hour), with implementation of mitigation measure CT-16.

Without Connector Ramps

The addition of Project traffic to the all-way stop-controlled intersection at Oakley Road / Live Oak Avenue (Intersection #16) would contribute to unacceptable LOS F conditions during both AM and PM peak hours (See Table 3.2-7). The forecasted AM and PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The all-way stop-controlled intersection would operate at unacceptable LOS F (delay > 60 seconds) during both AM and PM peak hours regardless of the Project. Because the Project would contribute to the already unacceptable conditions by adding additional northbound and southbound traffic to the intersection during both AM and PM peak hours, the impact would be ***potentially significant***.

The Oakley Road/Live Oak Avenue intersection would operate at acceptable LOS (LOS A [v/c = 0.60] based on CCTALOS and LOS C [delay = 30 seconds] based on HCM during the AM peak hour; and LOS C [v/c = 0.79] based on CCTALOS and LOS D [delay = 43 seconds] based on HCM during the PM peak hour) with implementation of the following mitigation measure. This impact would be reduced to a ***less-than-significant*** level with the implementation of mitigation measure CT-16.

Mitigation Measure(s) With and Without Connector Ramps:

CT-16 *Mitigation of the unacceptable conditions at the Oakley Road / Live Oak Avenue intersection will be achieved by implementing Mitigation Measure CT-2.*

Impact CT-17 - Cumulative Plus Project (2030) Impacts to Main Street / Empire Avenue

With Connector Ramps

The addition of Project traffic would cause the signalized Main Street / Empire Avenue intersection (#18 in Figure 3.2-1) to operate at unacceptable LOS E during the PM peak hour, causing a significant impact under Cumulative With Project conditions (See Table 3.2-6). The intersection would operate at acceptable LOS D (v/c = 0.87 and delay = 49 seconds) during the PM peak hour under Cumulative No Project conditions. The Project would cause the intersection to operate at an unacceptable LOS E (v/c = 0.97 and delay = 66 seconds) during the PM peak hour. Because the intersection would operate at a deficient level due to Project traffic added to northbound left, westbound through, and eastbound through and right movements at the intersection, the impact would be ***potentially significant***.

Considering the close spacing on Empire Avenue between Main Street and Oakley Road, signal timing and phasing at the two intersections shall be coordinated to minimize queue spillbacks at either intersection. Currently, southbound Empire Avenue at Oakley Road provides one exclusive right-turn lane and one through lane. This configuration would not accommodate the proposed dual left-turn from westbound Main Street to southbound Empire Avenue. The exclusive right-turn lane on southbound Empire Avenue at Oakley Road shall be converted to a shared through/right-turn lane to accommodate the additional traffic. Analysis using traffic simulation software indicates that with implementation of these improvements, both intersections would operate at acceptable LOS and queues would not spill back from either intersection. The Main Street / Empire Avenue intersection would operate at LOS D (v/c = 0.88 and delay = 41 seconds) during the PM peak hour with implementation of this mitigation measure. This impact would be reduced to a ***less-than-significant*** level with the implementation of mitigation measures CT-17(a-c).

Without Connector Ramps

The addition of Project traffic would cause the signalized intersection at Main Street / Empire Avenue (Intersection #18) to operate at unacceptable LOS F during the PM peak hour, causing a significant impact under Cumulative No Ramps With Project conditions (See Table 3.2-7). The intersection would operate at unacceptable LOS E (v/c = 0.91 and delay = 56 seconds) during the PM peak hour under Cumulative No Ramps No Project conditions. The proposed Project would cause the intersection to operate at unacceptable LOS F (v/c = 1.03 and delay = 80 seconds) during the PM peak hour. Because the intersection would operate at a deficient level due to Project traffic added to northbound left, westbound through, and eastbound through and right movements at the intersection, the impact would be ***potentially significant***.

The Main Street / Empire Avenue intersection would operate at LOS D (delay = 45 seconds) during the PM peak hour based on the HCM method with implementation of the following mitigation measure. However, the intersection would continue to operate at LOS E (v/c = 0.92) based on the CCTALOS method. The CCTALOS method analyzes the intersection as an isolated intersection and does not account for the effects of the nearby Empire Avenue / Oakley Road intersection, or the vehicle platooning on Main Street resulting from the upstream signals on both eastbound and westbound Main Street. Because the HCM method accounts for these effects, the results are estimated to be more accurate for the Main Street / Empire Avenue intersection. This impact would therefore be reduced to a ***less-than-significant*** level with the implementation of mitigation measure CT-17(a-c).

Mitigation Measure(s) With and Without Connector Ramps:

CT-17(a) *Add a second exclusive left-turn lane on the westbound approach of the intersection. The widening of Main Street at Empire Avenue is included in the City's Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit.*

CT-17(b) *Convert the exclusive southbound right-turn lane at the Oakley Road/ Empire Avenue intersection to a shared through/right-turn lane. The widening of Main Street at Empire Avenue is included in the City's Transportation Impact Fee Program. The Project shall contribute to this mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit.*

CT-17(c) *Coordinate signal phasing and timing at the Main Street / Empire Avenue and Oakley Road / Empire Avenue intersections. The coordination of signals at Main Street / Empire Avenue and Oakley Road / Empire Avenue intersections is not currently included in the City's Transportation Impact Fee Program. If the improvement is included in the City's Transportation Impact Fee Program upon issuance of the first building permit then the Project shall contribute to the mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit. In the event the improvement has not been added to the City's Transportation Impact Fee Program upon issuance of the first building permit then the Project shall install the improvement and be eligible for reimbursement from the Transportation Impact Fee Program.*

Impact CT-18 - Cumulative Plus Project (2030) Impacts to Neroly Road / Live Oak Avenue

With Connector Ramps

The addition of Project traffic would cause the all-way stop-controlled intersection at Neroly Road / Live Oak Avenue (Intersection #23 in Figure 3.2-1) to operate at unacceptable LOS E during the AM peak hour and LOS F during the PM peak hour (See Table 3.2-6). The forecasted AM and PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant. The intersection would operate at acceptable LOS D (delay = 31 seconds) during the AM peak hour and LOS C (delay = 24 seconds) during the PM peak hour under Cumulative No Project conditions. Because the Project would cause the intersection to operate at unacceptable LOS E (delay = 44 seconds) during the AM peak hour and LOS F (delay = 56 seconds) during the PM peak hour, the impact would be ***potentially significant***.

The intersection would operate at a deficient level due to Project traffic added to the southbound through and left-turn, northbound through, and westbound right-turn movements. This impact would be reduced to a ***less-than-significant*** level, and the intersection would operate at acceptable LOS (LOS A [v/c = 0.46 during the AM peak hour and v/c = 0.56 during the PM peak hour] based on CCTALOS and LOS C [delay = 27 seconds during both AM and PM peak hours] based on HCM), with implementation of mitigation measures CT-18.

Without Connector Ramps

The addition of Project traffic to the all-way stop-controlled intersection at Neroly Road / Live Oak Avenue (Intersection #23) would contribute to unacceptable LOS F conditions during both AM and PM peak hours. The forecasted AM and PM peak hour intersection volumes would also satisfy the MUTCD peak hour signal warrant (See Table 3.2-7). This is a significant impact under Cumulative No Ramps With Project conditions. The all-way stop-controlled intersection would operate at unacceptable LOS F (delay > 60 seconds) during both AM and PM peak hours regardless of the Project. Because the Project would contribute to the unacceptable conditions due to Project traffic added to the southbound through and left-turn, northbound through, and westbound right-turn movements at the intersection, the impact would be ***potentially significant***.

The Neroly Road / Live Oak Avenue intersection would operate at acceptable LOS (LOS A [v/c = 0.55] based on CCTALOS and LOS C [delay = 28 seconds] based on HCM during the AM peak hour; and LOS C [v/c = 0.71] based on CCTALOS and LOS D [delay = 39 seconds] based on HCM during the PM peak hour), and the impact would therefore be reduced to a ***less-than-significant*** level with the implementation of mitigation measure CT-18.

Mitigation Measure(s) With and Without Connector Ramps:

CT-18 *Mitigation of the unacceptable conditions at the Neroly Road / Live Oak Avenue intersection shall be achieved by implementing Mitigation Measure CT-3.*

Impact CT-19 - Project (2030) Impacts to Laurel Road / Empire Avenue

With Connector Ramps

The addition of Project traffic to the signalized intersection at Laurel Road / Empire Avenue (Intersection #25 in Figure 3.2-1) would contribute to the unacceptable LOS E conditions during the AM peak hour and cause the intersection to operate at LOS F during the PM peak hour (See Table 3.2-6). The intersection would operate at an unacceptable LOS E during both AM and PM peak hours under Cumulative No Project conditions (v/c = 0.98 and delay = 61 seconds during the AM peak hour, and v/c = 0.93 and delay = 79 seconds during the PM peak hour). Because the intersection would continue to operate at unacceptable conditions with the addition of Project generated traffic (LOS E during the AM peak hour [v/c = 0.99 and delay = 66], and LOS E [v/c =0.98] based on CCTALOS and LOS F [delay = 98 seconds] based on HCM), and the Project would further contribute to the poor intersection operations by adding traffic to the northbound and southbound approaches of the intersection, the impact would be ***potentially significant***.

This impact would be reduced to a ***less-than-significant*** level, and the intersection would operate at LOS D during both AM and PM peak hours (v/c = 0.86 and delay = 55 seconds during the AM peak hour; and v/c = 0.84 and delay = 51 seconds during the PM peak hour), with implementation of mitigation measure CT-19.

Without Connector Ramps

The addition of Project traffic to the signalized intersection at Laurel Road / Empire Avenue (Intersection #25) would contribute to the unacceptable LOS F conditions during both AM and PM peak hours (See Table 3.2-7). The intersection would operate at an unacceptable LOS F during both AM and PM peak hours under Cumulative No Ramps No Project conditions (v/c = 1.03 and delay = 75 seconds during the AM peak hour, and v/c = 1.02 and delay = 95 seconds during the PM peak hour). The intersection would continue to operate at unacceptable LOS F conditions (v/c = 1.04 and delay = 80 seconds during the AM peak hour, and v/c = 1.06 and delay > 100 seconds during the PM peak hour) with the addition of Project generated traffic. The intersection would operate at a deficient level regardless of the Project. Because the Project would result in a further decline in an already unacceptable LOS at this intersection by

adding traffic to the northbound and southbound approaches of the intersection, the impact would be ***potentially significant***.

The Laurel Road / Empire Avenue intersection would operate at acceptable LOS (LOS C [v/c = 0.80 during both AM and PM peak hours] based on CCTALOS and LOS D [delay = 36 seconds during the AM peak hour and delay = 46 seconds during the PM peak hour] based on HCM), and the impact would be reduced to a ***less-than-significant*** level with implementation of mitigation measure CT-19.

Mitigation Measure(s) With and Without Connector Ramps:

CT-19 *A second exclusive left-turn lane and one exclusive right-turn lane shall be added on the eastbound approach, and an exclusive right-turn lane shall be added on the southbound approach to the Laurel Road / Empire Avenue intersection. This improvement is not currently included in the City's Transportation Impact Fee Program. If the improvement is included in the City's Transportation Impact Fee Program upon issuance of the first building permit then the Project shall contribute to the mitigation by paying its fair share of the cost through the payment of the City's Transportation Impact Fee with the issuance of each building permit. In the event the improvement has not been added to the City's Transportation Impact Fee Program upon issuance of the first building permit then the Project shall install the improvement and be eligible for reimbursement from the Transportation Impact Fee Program.*

3.3 NOISE (N)

The Specific Plan Project's effects on the noise environment are analyzed in the detailed Noise Report contained in Appendix D. Following is a summary of the analysis, including the Project's effects in relationship to standards of significance, and mitigation measures required to reduce potential impacts to a less-than-significant level.

Environmental Setting

Noise may be defined as unwanted sound. The objectionable nature of sound could be caused by pitch or loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which are produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, several noise measurement scales are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. A relationship exists between the subjective noisiness or loudness of a sound and its intensity. Each 10-decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical noise terms are defined in Table 3.3-1.

Several methods exist for characterizing sound. The most common in California is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. The energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus one dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports.

Table 3.3-1
Acoustical Terminology

Acoustics	The science (or physics) of sound.
Ambient Noise	The distinctive acoustical characteristics of a given environment consisting of all noise sources audible at a given location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response filter that conditions a given sound signal to approximate human response.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 p.m. - 10 p.m.) weighted by a factor of three and nighttime hours (10 p.m. - 7 a.m.) weighted by a factor of 10 prior to averaging.
Decibel or dB	A Bel is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bel.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
L_{dn}	Day/Night Average Level. Similar to CNEL but with no evening weighting. The hours of 7 a.m. – 10 p.m. are considered daytime.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
L_n	The measured sound pressure level exceeded (n) percent of the time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB at 1,000 Hz for persons with good hearing.
SEL	A single-number rating indicating the total energy of a discrete noise event compressed into a 1-second time duration.

Source: Bollard Acoustical Consultants, Inc. 2007.

The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus one to two dBA.

Because the sensitivity to noise increases during the evening and at night—excessive noise interferes with the ability to sleep—24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level (CNEL) is a measure of the cumulative noise exposure in a community, with a five-dB penalty added to evening (7:00 pm - 10:00 pm) and a 10-dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The Day/Night Average Sound Level (L_{dn}), is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Existing Noise Environment

The existing noise environment in the vicinity of the Project site is defined by local traffic on Main Street and the area cross streets, by BNSF railroad operations, and by existing commercial and industrial land uses in the area. The noise analysis included an examination of land uses in the vicinity of the 76.4-acre Project site, including the identification of noise-sensitive land uses, which consist of a hotel and mobile home park on the west side of Bridgehead Road opposite the Project site, and a single-family residential development to the east of Big Break Road.

Existing Land Uses in the Project Vicinity

The Project site is currently vacant and undeveloped with the exception of agricultural grape production activities. The Project site is bordered to the north by the BNSF and industrial uses, to the south by Main Street/State Route 4 and commercial uses, to the west by commercial and residential uses, and to the east by residential uses.

Noise-sensitive land uses in the immediate Project vicinity include the existing hotel and mobile home park to the west (west side of Bridgehead Road), and the existing single-family residential development located approximately one-quarter mile to the east (east side of Big Break Road). A six-foot high masonry wall currently separates this residential development from Big Break Road.

Roadway Traffic Noise

To predict existing noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The Model is based on the Calveno reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the Project site. The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. A day/night traffic distribution of 83 and 17 percent was factored into the calculations to determine L_{dn}, consistent with noise and traffic data compiled as part of the Oakley 2020 General Plan.

Traffic volumes for existing conditions were obtained from the Traffic Impact Study prepared for the Project by Fehr & Peers Transportation Consultants (February 2007). The data within that report is in the form of AM/PM peak-hour intersection turning movements, which was converted to ADT by Bollard Acoustical Consultants, Inc.; the AM Peak Hour data was multiplied by 10 to approximate ADT.

Table 3.3-2 shows the existing traffic noise levels in terms of L_{dn} at a reference distance of 75 feet from the centerlines of existing Project-area roadways. This is considered to be the baseline condition. The table also includes the distances to existing traffic noise contours.

Table 3.3-2
Existing Traffic Noise Levels and Contour Distances

			Distance to Noise Contour (feet)		
Roadway	Segment	L_{dn} (dB) @ 75 Feet	70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
Bridgehead Road	North of Wilbur Road	52	5	10	22
Bridgehead Road	Main Street - Wilbur Road	60	16	34	72
Bridgehead Road	Main Street - Project Entrance	60	16	34	72
Bridgehead Road	Project Entrance - Wilbur Avenue	60	16	34	72
Wilbur Avenue	West of Minaker Drive	59	15	32	68
Wilbur Avenue	Minaker Drive - Viera Avenue	59	13	28	60
Wilbur Avenue	Viera Avenue – SR 160 SB Ramps	59	15	31	67
18th Street	Hillcrest Avenue - Viera Avenue	61	20	43	93
18th Street	Viera Avenue - Phillips Lane	60	16	34	73
Phillips Lane	South of 18th Street	45	2	4	8
Main Street	Neroly Lane - Sandy Lane	69	64	138	297
Main Street	Sandy Lane - Live Oak Avenue	69	64	137	295
Main Street	Live Oak Avenue - Big Break Road	69	61	132	285
Main Street	Big Break Road - Empire Avenue	69	60	129	277
Main Street	Empire Avenue - Vintage Parkway	68	52	112	241
Main Street	Vintage Pkwy - O'Hara Avenue	68	53	114	245
Oakley Road	West of Neroly Road	55	7	16	35
Oakley Road	Neroly Road – Live Oak Avenue	57	10	21	45
Oakley Road	Live Oak Avenue - Empire Avenue	58	12	26	57
W. Cypress Road	Empire Avenue - Main Street	58	11	24	52
Neroly Lane	Main Street - Oakley Road	61	18	39	84
Neroly Lane	South of Oakley Road	60	16	34	72
Sandy Lane	South of Main Street	31	0	0	1
Live Oak Avenue	Main Street - Oakley Road	54	7	14	30
Live Oak Avenue	South of Oakley Road	55	7	15	32
Big Break Road	North of Main Street	58	12	25	54
Empire Avenue	Oakley Road - W. Cypress Road	62	22	47	102
Empire Avenue	W. Cypress Road - Laurel Road	61	18	38	83

Source: FHWA-RD-77-108 with inputs from Fehr & Peers Transportation Consultants (November 2006) and Bollard Acoustical Consultants, Inc.: 2007.

Regulatory Environment

In order to limit population exposure to physically and/or psychologically damaging noise levels, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. The City of Oakley 2020 General Plan Noise Element and CEQA provide thresholds regarding noise levels relevant to the proposed Project. The following provides a general overview of the existing thresholds established by the City and CEQA.

State Regulations

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines in Appendix G, indicates that a significant noise impact may occur if a project exposes persons to noise levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels.

Local Regulations

City of Oakley General Plan

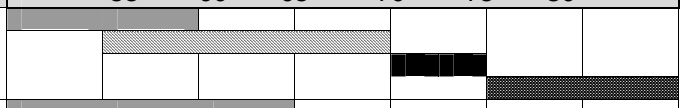
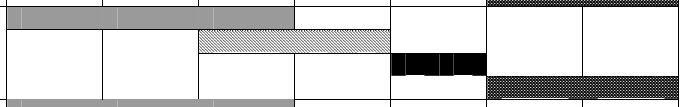
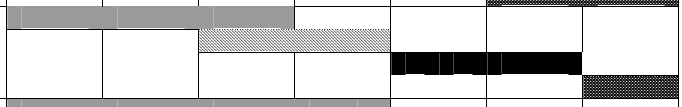
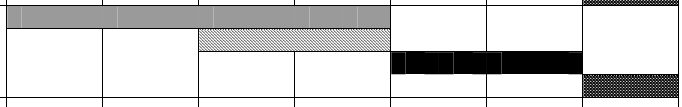
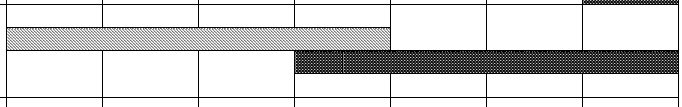
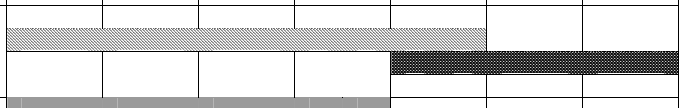
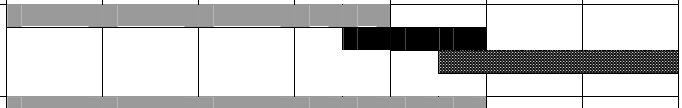
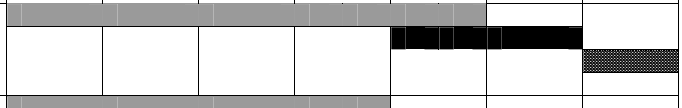
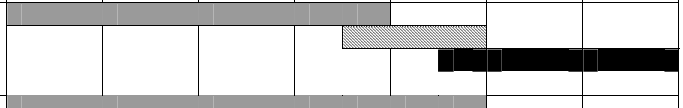
The City of Oakley establishes guidelines and policies regarding environmental noise in the General Plan. The Noise Element of the General Plan is designed to provide direction with regard to compatible development, reduce the potential for noise and land use compatibility conflicts, and reduce the effects of noise resulting from a proposed project on surrounding land uses. The following policies are applicable to the proposed Project[1]:

Noise Element

Goal 9.1 Protect residents from harmful and annoying effects of exposure to excessive noise.

Policy 9.1.1 New development shall use the land use compatibility table shown in Figure 9.1 [See Table 3.3-3] and the standards contained within Tables 9.1 and 9.3 [See Table 3.3-4] for determining noise compatibility.

Table 3.3-3
Land Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure Ldn or CNEL, dB 55 60 65 70 75 80
Residential – Low-Density Single Family, Duplex, Mobile Homes	
Residential- Multi-Family	
Transient Lodging – Motel, Hotel	
School, Libraries, Churches, Hospitals, Nursing Homes	
Auditoriums, Concert Halls, Amphitheaters	
Sports Arena, Outdoor Spectator Sports	
Playgrounds, Neighborhood Parks	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	
Office Buildings, Business, Commercial & Professional	
Industrial, Manufacturing, Utilities, Agriculture	

Normally Acceptable Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Normally Unacceptable New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Conditionally Acceptable New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Clearly Unacceptable New construction or development should generally not be undertaken

Table 3.3-4
Maximum Allowable Noise Exposure Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] L_{dn}/CNEL, dB	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}/dB[2]
Residences	65	45	--
Transient Lodging	65[3]	45	--
Hospitals, Nursing Homes	65	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meetings Halls	65	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

[1] Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.
[2] As determined for a typical worst-case hour during periods of use.
[3] In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.

Source: *Illingworth & Rodkin, December 12, 2005.*

Policy 9.1.3 Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 9-1 [See Table 3.3-3] as measured immediately within the property line of lands designated for noise-sensitive uses.

Policy 9.1.7 Where noise mitigation measures are required to achieve the standards of Table 9-1, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

Policy 9.1.8 Obtrusive, discretionary noise generated from residences, automobiles, commercial establishments, and/or industrial facilities should be minimized or prohibited.

Policy 9.1.9 Activities associated with agricultural operations are recognized as noise sources,

which may be considered annoying to some residents. These activities can occur during the daytime and nighttime hours. Activities include crop dusting, tractor operations, etc. The city will require that all new development of residential uses adjacent to agricultural uses provide full disclosure of potential noise sources to future residents.

Thresholds of Significance

Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. Based on the City's General Plan, these standards state that a noise impact may be considered significant if it would generate noise that would result in the following:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (60 dB for residential outdoor activity areas, 45 dB for residential indoor area, and 70 dB for commercial uses);
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impacts and Mitigation Measures

Basis for Impacts

The identified noise-producing elements associated with this Project are increased traffic on the local roadway network, parking lot activities, heavy truck movements primarily associated with the super-center and home improvement center, loading dock activities primarily associated with the three big-box retailers, rooftop HVAC equipment (Buildings A-C), and Project construction. Project operation noises would include operation of forklifts, parking lot cleaning equipment, leaf blowers, loudspeakers (in the garden center), trash compactors, and 24-hour operations.

Most of the Project uses (e.g., retail, restaurant) are not considered to be noise-sensitive, and are not expected to be impacted by perimeter roadway traffic noise

exposure. The proposed Project Hotel (Pad T), although a noise-sensitive use, is well removed from Main Street/State Route 4 and would not likely be impacted by traffic-related noise.

Traffic

To predict the noise levels due to traffic in the plus Project scenario, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The Model is based on the Calveno reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the Project site. The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. A day/night traffic distribution of 83 and 17 percent was factored into the calculations to determine L_{dn}, consistent with noise and traffic data compiled as part of the Oakley 2020 General Plan.

Project Parking Lots

As a means of determining potential noise exposure due to Project parking lot activities, Bollard Acoustical Consultants, Inc. utilized noise level data collected for previous parking lot noise studies (including those conducted for supercenters). It is assumed, based on analysis provided in the Project Transportation Impact Analysis (Appendix C), that approximately 240 cars could enter or leave the proposed Project parking lot within a worst-case hour.

The noise exposure from non-transportation noise sources to the residential uses to the east were not separately analyzed here or in the other components of this study, because the distance from these sensitive receptors to the closest buildings on site is substantially greater (approximately one-quarter mile), and the exposure would not require further analysis.

On-Site Truck Movements

Daily operations of the proposed super-center, home improvement center, and third big-box retailer would include deliveries of goods to the stores via tractor-trailer trucks. The conclusions included in the acoustical analysis (Appendix D) are based on information collected by Bollard Acoustical Consultants, Inc. from other noise studies involving big-box retailers (including supercenter, home improvement center, and other durable goods retailers). The expected delivery route would include access off of Main Street/State Route 4 with truck turn-around locations adjacent to each store (see the Project site plan).

The calculated noise exposure from assumed on-site truck movements does not account for any acoustical shielding provided by intervening Project buildings. This shielding would further reduce the noise exposure from this source.

Loading Docks

Primary noise sources associated with the supercenter, home improvement center, and third big-box retailer loading docks include heavy trucks stopping (air brakes), backing into the loading dock (back-up alarm), and pulling out of the loading dock (revving engine). Once a truck has backed into one of the docks, it is generally unloaded from inside of the store using a fork lift or hand cart, and a large portion of the unloading noise is contained within the building and truck trailer.

The calculated noise exposure from loading docks assumes loading dock activities does not account for any acoustical shielding provided by intervening Project buildings. This shielding would further reduce the noise exposure from this source. Operation of the three large scale retail uses is expected to include the distribution of materials from the loading docks, internally within the stores, with incidental distribution of garden materials to outdoor enclosures located between the Major Retail buildings depicted in the Development Plan. Forklift vehicles are expected to be utilized in the loading and unloading of trucks, and may also be utilized for incidental loading of customer vehicles adjoining the buildings. Forklift operations include back-up signals that would produce short-term sound levels audible within the parking lot. All of these incidental noise sources are incorporated into the foregoing calculations of noise exposure.

Operation of the Secondary Retail uses depicted in the Development Plan would involve use of daytime deliveries using smaller trucks and vans. Separate loading docks and forklift vehicle usage are not included as part of these smaller Secondary Retail uses.

Rooftop Mechanical Equipment (HVAC)

The mechanical systems for the proposed big-box stores (Pads A-C) are expected to consist primarily of packaged rooftop units. The analysis included in Appendix D is based on the mechanical equipment needs for the proposed building sizes, utilizing information from studies of supercenters, home improvement centers and other big-box uses prepared by Bollard Acoustical Consultants, Inc., and calculation procedures outlined in *Noise Control for Buildings and Manufacturing Plants (Hoover & Keith, Inc., 1981).* Operation of the smaller Secondary Retail uses scattered throughout the Project site would involve use of smaller rooftop units, the noise exposure from which would be substantially less, based on measurements of similar facilities by Bollard Acoustical Consultants, Inc.

Project Construction

During the construction phases of the Project, noise from construction equipment would be expected to add to the noise environment in the immediate Project vicinity. Activities involved in construction would likely generate maximum noise levels ranging from 85-88 dB at a distance of 50 feet (See Table 3.3-5). These unmitigated construction noise levels have been reviewed and verified by Bollard Acoustical Consultants, Inc., as reliable based on other recent developments involving use of modern equipment. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours (7:00 a.m.-6:00 p.m., Monday through Friday).

Table 3.3-5
Construction Equipment Noise Levels

Type of Equipment	L_{max}, dB at 50 feet
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85

Sources: Environmental Noise Pollution, Patrick R. Cunniff, 1977
Bollard Acoustical Consultants, Inc., 2007.

Noise would also be generated during the construction phases by increased truck traffic on local area roadways. A significant Project-generated noise source would be truck traffic associated with the transport of heavy materials and equipment to and from the Project site.

Analysis of Project Impacts

Maximum development as identified under the Specific Plan (770,000 square feet) has been identified as likely to result in primary noise-producing elements, consisting of: increased traffic on the local roadway network, daytime parking lot activities, heavy truck movements primarily associated with the super-center and home improvement center, loading dock activities primarily associated with the 24-hour supercenter and home improvement center, rooftop HVAC equipment (Major building pads A-C), and Project construction.

Impact N-1 - Increase in Off-Site Traffic Noise Due to the Project

The Project would generate increased traffic on existing local area roadways. As shown in Table 3.3-6, the Project-related traffic (shown in the Existing Plus Project column) would be expected to result in traffic noise level increases as high as 12 dB compared to the Existing (Baseline) condition with a resulting noise level of 42.4 dB. An increase in traffic noise exposure would be expected on Sandy Lane and Live Oak Avenue south of Main Street/State Route 4. However, noise-sensitive land uses are not located on Sandy Lane or Live Oak Avenue between Main Street/ State Route 4 and Oakley Road. These areas are occupied by existing commercial uses adjoining Main Street, and agricultural

uses extending south to Live Oak Avenue. Therefore the noise exposure within this area would be ***less-than-significant***.

Sandy Lane currently terminates at Oakley Road. Residential uses exist along Live Oak Avenue south of Oakley Road between Oakley Road and Laurel Road. The Project-related noise exposure increases at noise-sensitive uses in this area would (as shown in Table 3.3-6) measure 5.2 dB, resulting in noise levels of 59.7 dB. This increase is below the 60 dB threshold of significance for residential outdoor activity areas. The interior noise standard for residential uses is 45 dB. Typical construction reduces noise levels by approximately 25 dB which would ensure that interior noise levels are below the threshold. Therefore, because the noise levels would be within applicable standards, the noise exposure along Live Oak Avenue south of Oakley Road between Oakley Road and Laurel Road would be ***less-than-significant***.

As shown in Table 3.3-6, areas along Main Street in the existing plus Project scenario would range from 68.7 to 69.8 dB. The property along Main Street is developed with commercial uses and designated for commercial development and noise levels of 70 dB are acceptable for both indoor and outdoor uses. Therefore the noise exposure related to increased traffic on Main Street is ***less-than-significant***.

Impact N-2 - Operational Noise Exposure at Existing Sensitive Receptors

Noise exposure from on-site noise sources associated with operation of the completed Project, including maximum parking lot, truck movement, and loading dock operations in association with all three big-box uses and other Secondary Retail uses, would not be expected to exceed the thresholds of 55 dB Hourly L_{eq} and 45 dB Hourly L_{eq} during the daytime and nighttime hours, respectively, at the closest existing noise-sensitive receivers.

As calculated, unmitigated Project-related rooftop mechanical equipment noise exposure at the closest existing noise-sensitive receivers to the west of the Project site are expected to marginally exceed the applicable daytime noise exposure threshold of 55 dB Hourly L_{eq}. However, paragraphs 10 and 11 of Specific Plan Design Guidelines Section 6.5(d) call for the use of building parapets to screen all such roof-mounted equipment. In order to be effective in reducing off-site noise exposure at the nearest noise-sensitive receivers, these building parapets must be 4-6 feet high. Together with the building rooflines and intervening Project building shielding, the parapets would provide for approximately 10 dB of noise attenuation, resulting in HVAC noise exposure of approximately 52 dB Hourly L_{eq} during maximum daytime operations.

Nighttime operations of rooftop mechanical systems operating in connection with a 24-hour supercenter use and other facilities requiring nighttime equipment operation would produce less noise than daytime operations, because of lower

average system demands. The resulting noise exposure is not expected to exceed the established 45 dB Hourly L_{eq} threshold at the closest noise-sensitive receivers to the west.

Based on incorporation of the Specific Plan Design Guidelines, noise exposure from rooftop mechanical systems, and other operational noises planned as part of the proposed Project, is expected to comply with the City's noise exposure limits and would result in a ***less-than-significant*** impact on noise-sensitive receivers.

Impact N-3 - Noise Exposure to Proposed Hotel (Pad T)

Cumulative (2030) plus Project noise exposure at the proposed Hotel building would not be expected to exceed the City's 65 dB L_{dn} exterior noise exposure criterion based on the traffic noise assessment (See Table 3.3-6). Based on the estimated exterior noise exposure, interior noise exposure from local transportation noise sources would not likely exceed the City's 45 dB L_{dn} limit. Building Codes currently require compliance with this interior noise exposure standard. Therefore, this impact would be ***less-than-significant*****.** Additional mitigation is not required.

Impact N-4 - BNSF Railway Overpass

The Project includes completion of a partial extension of Live Oak Avenue, in preparation for a future overpass of the BNSF railroad right-of-way, as called for in the Oakley 2020 General Plan. Based upon the noise analysis conducted by Bollard Acoustical Consultants, the future traffic on this elevated roadway is not expected to produce significant noise exposure at the closest noise-sensitive properties to the east (more than 3,000 feet away), or to the nearest sensitive receptors to the east (approximately 2,500 feet away). Therefore, this impact would be ***less-than-significant*****.** Additional mitigation is not required.

Impact N-5 - Construction Noise

Activities associated with the Project construction will result in elevated noise levels, with maximum noise levels ranging from 85-88 dB at 50 feet as shown in Table 3.3-6. Although these levels would be audible at the nearest existing residences, they would be temporary in nature and would likely occur during normal daytime working hours. Nonetheless, because construction activities would result in periods of elevated noise levels, this impact would be ***potentially significant***. This impact will be reduced to ***less-than-significant*** through implementation of the following mitigation measure.

Table 3.3-6
Summary of Calculated Traffic Noise Levels at 75 Feet from Roadway Centerlines

		Ldn, dB					
Roadway	Roadway Segment	Existing	Existing Plus Project	Cumulative (2030) – No Ramps/No Project	Cumulative (2030) – No Ramps/Plus Project	Cumulative (2030) – With Ramps/No Project	Cumulative (2030) – With Ramps/Plus Project
Bridgehead Road	N. of Wilbur Road	52.1	52.1 (0)	53.1 (1.0)	53.1 (1.0) (0)	53.1 (1.0)	53.1 (1.0) (0)
Bridgehead Road	Main Street - Wilbur Road	59.8	61.4 (1.6)	60.4 (0.6)	61.8 (2.0) (1.4)	59.3 (-0.5)	61.2 (1.5) (1.9)
Bridgehead Road	Main Street - Project Entrance	59.8	61.1 (1.3)	60.4 (0.6)	61.8 (2.0) (1.4)	59.3 (-0.5)	61.2 (1.5) (1.9)
Bridgehead Road	Project Entrance - Wilbur Avenue	59.8	60.9 (1.1)	60.4 (0.6)	61.2 (1.5) (0.9)	59.3 (-0.5)	60.3 (0.5) (1.0)
Wilbur Avenue	W. of Minaker Drive	59.4	59.8 (0.4)	62.4 (3.0)	62.7 (3.3) (0.2)	62.3 (2.9)	62.6 (3.2) (0.3)
Wilbur Avenue	Minaker Drive - Viera Avenue	58.5	59.3 (0.8)	62.1 (3.6)	62.5 (3.9) (0.4)	62.0 (3.4)	62.3 (3.8) (0.4)
Wilbur Avenue	Viera Avenue – SR 160 SB Ramps	59.3	60.0 (0.7)	61.9 (2.5)	62.3 (3.0) (0.5)	61.6 (2.3)	62.1 (2.8) (0.4)
Wilbur Avenue	E. of Bridgehead Road	NA	NA	59.9 (NA)	60.2 (NA) (0.3)	60.0 (NA)	60.4 (NA) (0.4)
18th Street	Hillcrest Avenue - Viera Avenue	61.4	62.0 (0.6)	64.0 (2.6)	64.3 (2.9) (0.3)	63.9 (2.4)	64.2 (2.8) (0.3)
18th Street	Viera Avenue - Phillips Lane	59.9	60.9 (1.0)	63.3 (3.4)	63.7 (3.9) (0.5)	63.1 (3.3)	63.6 (3.8) (0.5)
Phillips Lane	S. of 18th Street	45.1	45.1 (0)	51.7 (6.7)	51.7 (6.7) (0)	51.7 (6.7)	51.7 (6.7) (0)
Main Street	Neroly Lane - Sandy Lane	69.0	69.8 (0.8)	**70.1** (1.1)	**70.7 (1.7)** (0.6)	**70.0** (1.0)	**70.8** (1.8) (0.8)
Main Street	Sandy Lane - Live Oak Avenue	68.9	69.7 (0.8)	69.9 (1.0)	**70.6 (1.7)** (0.7)	69.8 (0.9)	**70.7** (1.7) (0.8)
Main Street	Live Oak Avenue - Big Break Road	68.7	69.8 (1.1)	**70.1** (1.4)	**71.0 (2.3)** (0.9)	**70.0** (1.3)	**70.8** (2.1) (0.8)
Main Street	Big Break Road - Empire Avenue	68.5	69.6 (1.1)	69.7 (1.2)	**70.6 (2.0)** (0.8)	69.6 (1.1)	**70.4** (1.9) (0.8)
Main Street	Empire Avenue - Vintage Pkwy	67.6	68.7 (1.1)	66.3 (-1.3)	67.7 (0.1) (1.4)	66.3 (-1.3)	67.6 (0) (1.3)
Main Street	Vintage Pkwy - O'Hara Avenue	67.7	68.7 (1.0)	66.5 (-1.2)	67.7 (0) (1.3)	66.5 (-1.2)	67.6 (-0.1) (1.2)
Oakley Road	W. of Neroly Road	55.0	55.4 (0.4)	57.6 (2.6)	57.8 (2.8) (0.2)	57.6 (2.6)	57.9 (2.9) (0.3)
Oakley Road	Neroly Road - Live Oak Avenue	56.6	57.1 (0.5)	58.1 (1.5)	58.4 (1.8) (0.3)	58.1 (1.5)	58.5 (1.8) (0.4)
Oakley Road	Live Oak Avenue - Empire Avenue	58.2	59.3 (1.1)	61.0 (2.8)	61.7 (3.5) (0.7)	60.9 (2.8)	61.7 (3.5) (0.7)
W. Cypress Road	Empire Avenue - Main Street	57.7	58.6 (0.9)	60.1 (2.4)	60.7 (3.0) (0.6)	60.1 (2.4)	60.8 (3.2) (0.7)
Neroly Lane	Main Street - Oakley Road	60.7	61.2 (0.5)	61.6 (0.9)	62.0 (1.3) (0.4)	60.5 (-0.3)	60.8 (0.1) (0.3)
Neroly Lane	S. of Oakley Road	59.8	60.3 (0.5)	60.4 (0.6)	60.9 (1.1) (0.5)	59.5 (-0.3)	59.9 (0.1) (0.4)
Sandy Lane	S. of Main Street	30.6	42.4 (11.8)	57.7 (27.2)	57.9 (27.3) (0.1)	57.7 (27.2)	58.0 (27.4) (0.2)
Live Oak Avenue	Main Street - Oakley Road	54.1	60.6 (6.5)	60.9 (6.8)	63.3 (9.2) (2.3)	59.5 (5.4)	61.6 (7.5) (2.1)
Live Oak Avenue	S. of Oakley Road	54.5	59.7 (5.2)	59.9 (5.3)	62.1 (7.5) (2.2)	58.1 (3.6)	59.7 (5.2) (1.6)
Big Break Road	N. of Main Street	57.8	58.2 (0.4)	59.5 (1.6)	59.7 (1.9) (0.3)	59.5 (1.6)	59.7 (1.8) (0.2)
Empire Avenue	Oakley Road - W. Cypress Road	62.0	62.9 (0.9)	63.8 (1.8)	64.4 (2.4) (0.6)	63.4 (1.4)	64.1 (2.1) (0.7)
Empire Avenue	W. Cypress Road - Laurel Road	60.6	61.4 (0.8)	63.5 (2.8)	63.9 (3.3) (0.4)	63.0 (2.4)	63.5 (2.9) (0.5)

Notes: Change in first (or only) set of () is with respect to Existing condition (Baseline). Change in second set of () is with respect to the Cumulative (No Project) condition (reflecting the Project's contribution to Cumulative conditions). Numbers in **bold** represent noise exposure greater than 65 dB for residential and 70 dB for commercial.

Source: FHWA-RD-77-108 with inputs from Fehr & Peers Transportation Consultants (November 2006), and Bollard Acoustical Consultants, Inc.: 2007.

Mitigation Measure(s):

N-5 *All construction activities shall adhere to all applicable provisions of the City of Oakley Noise Ordinance and applicable Oakley 2020 General Plan mitigation measures. Construction activities shall be limited to 7 a.m. to 6 p.m., Monday-Friday and 8 a.m. to 5 p.m. on Saturdays. Construction shall not occur on Sunday. All internal combustion engines shall be fitted with factory specified mufflers, and should be in good working order. The Project contractor(s) shall locate equipment staging areas as far as possible from existing noise-sensitive receivers to the east and west of the Project site.*

Impact N-6 - Railroad Noise

The City of Oakley General Plan EIR conducted noise level measurements at two locations for railroad operations adjacent to the Burlington Northern & Santa Fe (BNSF) track along the eastern portion of the City of Oakley. The measurements were conducted to determine the contribution of railroad mainline operations to the area's noise environment. The purpose of these measurements was to determine typical sound exposure levels (SEL) for railroad line operations, accounting for the effects of travel speed, warning horns, and other factors, which may affect noise generation. In addition, the noise measurement equipment was programmed to identify individual train operations, so that the typical number of train operations could be determined.

The General Plan (See Table 9-7 in the City of Oakley General Plan) includes railway sound measurements at the nearby Big Break Road crossing. The measurements determined the railroad noise from the Big Break Road at grade crossing to be 67 dB Ldn at 100 feet without warning horn, and 76.5 dB Ldn at 100 feet with warning horn.

The proposed Project would include the construction of commercial and office land uses. As shown in Figure 9-1 of the City of Oakley General Plan, the Normally Acceptable noise levels for this land use range up to 70 dB Ldn, and Conditionally Acceptable noise levels range from 67.5 dB Ldn to 76.5 dB Ldn.

The proposed Project includes two major land uses. The primary land use is major retail, consisting of large buildings with loading operations in the rear. In addition, the Project includes a secondary retail land use. The construction methods used on a majority of the buildings associated with the proposed Project would dampen interior noise levels by at least 25 dB. As a result, the interior noise levels at the Major Retail and Secondary Retail land uses located +/- 100 feet from the BNSF tracks would reduce interior noise levels to approximately 51.5 dB Ldn at 100 feet from the BNSF rail lines, well below the normally acceptable level of 70 dB Ldn.

The Secondary Retail uses associated with the proposed Project may include outdoor seating and gathering areas. The rear of Secondary Retail pads identified as D and G in Development Plan A and buildings D, E and H in Development Plan B would be approximately 100 feet from the existing BNSF rail line. Though, based upon the sound measurements at Big Break Road, the sound levels at the rear of these buildings would be approximately 76.5 dB Ldn, exterior seating and gathering areas would be located in the front of the Secondary Retail pads, approximately 200 feet from the BSFR rail line. Therefore, noise levels at exterior receptors, such as outdoor seating and patio areas, would be shielded by the Secondary Retail buildings themselves and would be located nearly 200 feet from the existing rail lines. The additional distance and the reduction associated with the placement of the secondary retail buildings would be expected to reduce exterior noise levels to below thresholds at the outdoor areas associated with the secondary retail land uses.

Because the interior noise levels associated with the railway traffic along the BNSF railway would be reduced to acceptable levels via the noise reduction associated with the north/north-east facing walls for the major and secondary retail land uses, and because any outdoor gathering areas which maybe included with the secondary retail uses would be positioned on the front of the buildings, further from the BNSF rail lines, the impacts associated with noise generated from the BNSF rail lines would be ***less-than-significant***.

Impact N-7 – Railroad-related Vibration

The proposed Project would place commercial structures at or over 100 feet from the existing BNSF Rail lines. The daily passage of trains on the rail lines could result in vibration and ground shaking which could affect the businesses on the proposed Project site. In 2003, the Cypress Grove Residential project, located to the east of the proposed Project site along the BNSF rail lines, included a noise analysis by Bollard & Brennan Inc., which calculated the effects of rail-related vibrations on nearby structures. Because the Cypress Grove project is located along the same stretch of the BNSF railway within the City of Oakley, vibration generated by the BNSF railroad line would be expected to be similar to those expected at the proposed Project site.

The analysis found that, at 50-feet, railroad passages adjacent to the Cypress Grove site would generate vibration levels ranging from 0.064 to 0.108 inches/second. As shown in Table 3.3-7, the threshold of significance for architectural damage as a result of vibration is at 1.00 inches/second. As a result, the vibration levels at 50-feet from the railroad track would be expected to be slightly (0.008 inches/second) above the threshold for human annoyance. The proposed Project would place structures at approximately 100 feet from the railroad tracks. As a result, vibrations associated with passing trains would be expected to dissipate further to levels well below the existing architectural thresholds as well as the general threshold of human annoyance. Therefore, the

development of the proposed Project would result in a ***less-than-significant*** impact with regard to vibration.

Table 3.3-7
General Human and Structural Responses to Vibration Levels

Effects on Structures & People	Peak Vibration Threshold (in/sec PPV)
Structural damage to commercial structures	6.00
Structural damage to residential buildings	2.00
Architectural damage	1.00
General threshold of human annoyance	0.10
General threshold of human perception	0.01

Sources: Survey of Earth-borne Vibrations due to Highway Construction and Highway Traffic, Caltrans 1976.
Final Environmental Impact Report: Richmond Transport Project, Orion Environmental Associates, 1990.
Weekly Progress Report for Vibration Monitoring for Richmond Transport, Wilson, Ihrigg & Associates, 1994

Cumulative Impacts

Cumulative (2030) traffic increases with the proposed Specific Plan Project, both with and without the Highway 160 connector ramps, will result in noise increases compared to the Existing (Baseline) condition, as presented in Table 3.3-6. Several of the cumulative noise level increases are expected to exceed the threshold standards for significance with or without the Project. The cumulative plus Project noise levels exceed 70 dB along Main Street from Neroly Road to Vintage Parkway. Although the volume of traffic generated by the Project is consistent with volumes analyzed in the Oakley 2020 General Plan EIR, the City considers the cumulative contribution of the proposed Project to the traffic-related noise environment to be cumulatively considerable. Potential mitigation measures for cumulative noise impacts, such as the construction of sound walls around existing developments, were found to be infeasible. Therefore, the proposed Project's impact to Cumulative (2030) traffic noise levels would be ***significant and unavoidable***.

Endnotes

[1] It should be noted that, though the noise assessment prepared for the proposed Project utilizes FICON threshold standards, the City is utilizing noise threshold standards set forth in the City of Oakley General Plan.

3.4 BIOLOGICAL RESOURCES (BR)

The Specific Plan Project's effects on biological resources are analyzed in the detailed Biological Assessment Report prepared by Wood Biological Consulting, contained in Appendix E. Following is a summary of the analysis, including the Project's effects in relationship to standards of significance, and mitigation measures required to reduce potential impacts to a less-than-significant level.

Environmental Setting

Existing Conditions

The River Oaks Crossing Property extends east from Bridgehead Road nearly one mile, and is bordered along its entire northerly property line by the Burlington Northern & Santa Fe (BNSF) Railroad line. The site has a triangular shape, with increasing site depth moving from east (Big Break Road end) to west (Bridgehead Road end). Buildings or other structures do not currently exist on the site and the primary land use on the Project site is grape cultivation, which currently covers approximately 95 percent of the site. Commercial grape production activities on the Project site involve regular disking between rows of plants and all other areas adjoining the perimeter of the site. Production activities also involve pest control and harvesting of grapes, parking for employees, and truck access for delivery of materials and off-haul of harvested grapes. The Project site is relatively flat, draining to the northeast and northwest from a localized high point near the center of the site.

Surrounding land uses include the Burlington Northern/Santa Fe Railroad to the north, beyond which lie the former DuPont Chemical Plant and rural/agricultural properties. The southwest corner of Bridgehead Road and Main Street, adjoining the site is commercially developed, with an Arco station and a Caffino café stand. Land on site is dominated by a vineyard, which is bordered on all sides by a dirt road. Patches of ruderal habitat also exist onsite. One patch is at the southwest corner, adjacent to the commercial area, and a second, linear patch runs alongside the northern boundary of the site.

The Antioch Dunes National Wildlife Refuge (ADNWR) is located approximately 2.2 miles west of the proposed Project area, on the northern side of Wilbur Avenue. This area of stabilized interior dunes consists of extensive wind-blown deposits of sandy soils supporting numerous endemic plant and animal species. In the early part of the 20th century, the Antioch Dunes and much of their unique flora were destroyed by removal of sand for industrial purposes. Relictual portions of the dunes are now under management by the U.S. Fish and Wildlife Service.

Tree Inventory

An inventory of existing trees on the 76.4-acre Project site was performed on February 1, 2007 by reviewing aerial site photography and walking the entire length of both Main Street and Bridgehead Road where trees border the property. All trees were visually assessed and measured in order to determine location with respect to the Project boundary, circumference, and species, pursuant to the Heritage and Protected Tree Preservation guidelines contained in the Oakley Municipal Code (Title 9, Sections 9.1.1112-1114). Of the 78 trees on-site, 32 were not included in the inventory because their size and stature were well below the identified standards for protected or heritage trees. The remaining 46 trees were then inventoried by number (1 through 46), and classified according to circumference (See Figure 3.4-1 and Table 3.4-1).

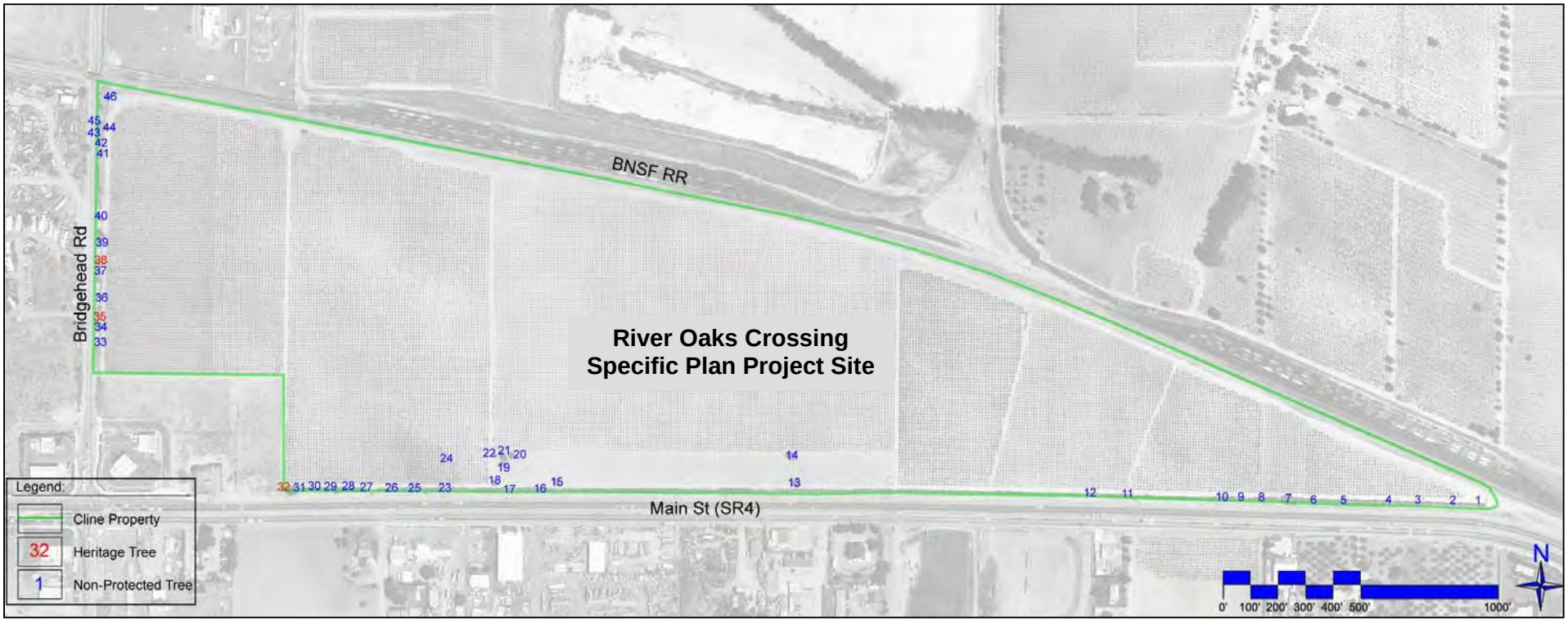
Those trees within or adjoining the site meeting the "Heritage Tree" standard, 50" in circumference, measured at a height of 54" (four and one half feet) above natural grade, have been noted. Three such trees were identified during the on-site tree survey.

All remaining trees located within the Project boundaries were evaluated for qualification as "Protected Trees," pursuant to the criteria in Section 9.1.1114 of the Municipal Code. This standard requires a primary trunk circumference of 20", measured at a height of 54" (four and one half feet) above natural grade (or 40 total inches in circumference for multi-trunk trees), and also requires that qualifying trees be "adjacent to or part of a riparian, foothill woodland, or oak savanna area, or part of a stand of four or more trees." None of the foregoing habitat conditions occur on or adjacent to the Project site. Based on these standards, the remaining 43 trees included in the inventory were not found to qualify as protected trees.

Plant Communities

The study area consists predominantly of actively cultivated vineyards, with the exception of ruderal habitat at the southwest corner and along the northern border, between the dirt road and railroad tracks. Other vegetation includes ornamental trees and shrubs planted alongside Main Street and Bridgehead Road, the western and southern borders of the property. The ruderal habitat in the southwest corner sits on clay fill, piles of dirt, and some native sand excavated from elsewhere. Virtually all of the naturally occurring vegetation on site has been removed by cultivation, grading, disking, and filling. Vegetation communities are described in more detail below.

Figure 3.4-1
Existing Trees On and Adjoining Project Site



Source: Richard T. Loewke, AICP, May 2007.

Table 3.4-1
Existing Tree Inventory

	Tree Number	Largest Trunk Size*	2nd	3rd	4th	Status**	On-Site***
	1	25				N	Y
	2	36				N	Y
	3	30				N	Y
	4	30				N	Y
	5	21	18			N	Y
	6	35				N	Y
	7	42	31	26	24	N	Y
	8	40				N	Y
	9	20	20	19		N	Y
	10	27				N	Y
	11	22				N	Y
	12	28	12	10	8	N	Y
	13	34	34	27	25	N	Y
	14	39	25	28	27	N	Y
	15	46	24	22		N	Y
	16	30				N	Y
	17	22				N	Y
	18	32	22			N	Y
	19	27	22	20		N	Y
	20	28	27	22		N	Y
	21	48	43	32	31	N	Y
	22	18	18	13		N	Y
	23	24				N	Y
	24	24				N	Y
	25	23				N	Y
	26	33				N	Y
	27	20				N	Y
	28	29				N	Y
	29	26				N	Y
	30	22				N	Y
	31	47				N	Y
	32	58	48	30		H	Y
	33	49	38	34		N	N
	34	40	24	10		N	N
	35	52	26	15		H	N
	36	35	23			N	N
	37	29	23	19		N	N
	38	58	48			H	N
	39	40	27			N	N
	40	31	24	23		N	N
	41	35	30			N	Y
	42	22	21			N	Y
	43	19	15	13	12	N	Y
	44	24				N	Y
	45	30	22	18	17	N	Y
	46	22	15	14	12	N	Y
Totals:	**46 Trees**					**3 Heritage Trees 43 Neither**	**38 On-Site 8 Off-Site**

* Trunk circumfrence measured 4 1/2 ft above the ground
* (H)eritage, (P)rotected, (N)either
** Trees not onsite adjoin site within right-of-way

Source: Richard T. Loewke, AICP, February 2007.

Disturbed and Cultivated Lands

Disturbed lands are those on which the native vegetation has been completely removed by grading, cultivation, development, and similar activities. Such areas include agricultural fields, orchards, developed areas, paved and unpaved roadways, parking areas, quarries, vacant lots, and storage yards. Such areas are not expected to support any natural vegetation, although invasive non-native and native species may become established where soil is present.

A large portion of the study area is actively cultivated as a vineyard consisting of common grapes (*Vitis vinifera*). Between the rows of vines, vegetation is routinely cleared of weeds. Where the vineyard has not been weeded, a sparse cover of herbaceous, mostly non-native, ruderal grasses and forbs is present.

Ruderal Vegetation and Non-Native Annual Grassland

Ruderal vegetation and non-native annual grassland are intergrading plant communities from which the native vegetation has been completely removed by grading, cultivation, grazing, or other surface disturbances. Such areas, if left undeveloped, may become recolonized by invasive exotic species, as well as by certain native species. The native vegetation may ultimately become at least partially restored if the soils are left intact and disturbance ceases.

Within the study area, a majority of the property has been subject to cultivation and grading, and the level of ground disturbance is high. Ruderal vegetation and non-native grassland make up most of the remainder of the site outside of the portions under active cultivation. Characteristic non-native species occurring on site include grasses such as ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), fescue (*Vulpia myuros*) and wild oats (*Avena fatua*), among others. Non-native forbs include yellow star thistle (*Centaurea solstitialis*), smooth cat's-ear (*Hypochaeris glabra*), sour clover (*Melilotus indica*), prickly lettuce (*Lactuca serriola*), filaree (*Erodium botrys*), hoary mustard (*Hirschfeldia incana*), bur-clover (*Medicago polymorpha*), common knotweed (*Polygonum arenastrum*) and many others. Native species detected on site include panicled willowherb (*Epilobium brachycarpum*), deerweed (*Lotus scoparius*), croton (*Croton californicus*) and annual lupines (*Lupinus nanus, L. succulentus*).

Within the study area, soils are sandy and probably represent remnants of interior dunes similar to the Antioch Dunes. However, based on the high degree of surface and soil disturbance within the study area, the potential for occurrence of any species endemic to the Antioch Dunes is considered to be low to none. Widespread species representing possible remnants of the Antioch Dunes formation and present on site include California broom (*Lotus scoparius*) and croton (*Croton californicus*). Both of these native species are fairly common in the region on highly disturbed sandy soils.

Wildlife Habitats

Wildlife species expected on site are those typically associated with cultivated lands and ruderal vegetation. Although the same native sandy soils that occur at the Antioch Dunes NWR (an area that supports the last remaining populations of endemic invertebrate and vertebrate species for this portion of the Bay-Delta area), are present in the Project area, the study area has been highly disturbed from historic agricultural practices.

Review of the USGS topographic maps and aerial photos reveal the site has been in agricultural production either as an orchard or a vineyard for a period in excess of 50 years. Remnant almond trees can be seen along the perimeter and throughout the existing vineyard. Vegetation around the perimeter of the site, particularly along the Burlington Northern/Santa Fe Railroad (BN/SF RR), is primarily ruderal, and includes non-native grasslands.

Ruderal

Occurring within the southwest corner of the site, ruderal vegetation is made-up of nonnative grasses and herbs and provides little habitat for wildlife species. Passerines (perching birds) may use the area for foraging, but are not expected to use the area for nesting, based on the lack of suitable canopy cover and escape from predators. California ground squirrels (*Spermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*) often move into areas with ruderal vegetation. However, neither ground squirrels nor evidence of gophers were observed on site.

Vineyards

Vineyards and orchards offer the least overall habitat value of all agricultural crops, mostly because of farming practices. Generally, in the cultivation of vineyards, all herbaceous ground cover is removed beneath the vines and between the rows, as is the case on the Project site. Although some wildlife species forage in vineyards, these lands are thought to be a "second choice" for most species and are unusable by some species, such as larger mammals, for foraging or refuge.

Some reptile species, such as western fence lizard (*Sceloporus occidentalis*) and sideblotched lizard (*Uta stansburiana*), may be associated with this habitat along the perimeter in the ruderal vegetation. Some raptors such as red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), and barn owl (*Tyto alba*) may use the area for foraging, depending on the cover crops, vine-row spacing, and small mammal control methods used. Other birds associated with cultivated lands such as vineyards may include fruit and insect eating species such as European starling (*Sturnus vulgaris*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Carpodacus mexicanus*) and northern mockingbird

(*Mimus polyglottus*). Other species, such as mourning dove (*Zenaida macroura*) and killdeer (*Charadrius vociferus*), may use the adjacent open sandy areas for nesting if the disturbance level associated with the vineyard is low.

If ground cover is available, rodents such as California vole (*Microtus californicus*) and pocket gophers, and small mammals such as brush rabbit (*Sylvilagus bachmanii*), may forage on the leaves and grasses of vineyards and, in turn, may attract predators such as hawks. Vineyards are known foraging grounds for aerial and ground foraging insect-eating bat species such as myotis (*Myotis* spp.) and pallid bat (*Antrozous pallidus*). Other mammalian species known to use vineyards include raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), and opossum (*Didelphius virginiana*). However, these species only use vineyards for foraging.

Wildlife Movement Corridors

Wildlife movement includes migration (*i.e.*, usually one way per season), inter-population movement (*i.e.*, long-term genetic flow) and small travel pathways (*i.e.,* daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities, such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations.

These linkages among habitat types can extend for miles from primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in discrete areas and populations located within larger habitat areas. The mosaic of habitats found within a large-scale landscape results in wildlife populations that consist of discrete sub-populations comprising a large single population, which is often referred to as a meta-population. Even where patches of pristine habitat are fragmented, such as occurs with coastal scrub, the movement between wildlife populations is facilitated through habitat linkages, migration corridors and movement corridors.

Depending on the condition of the corridor, genetic flow between populations may be high in frequency, thus allowing high genetic diversity within the population, or may be low in frequency. Potentially low frequency genetic flow may lead to complete isolation and, if pressures are strong, potential extinction.

Extensive industrial and residential development separate the Project area from the Antioch Dunes NWR, which is located approximately 2.2 miles to the west. Because of this dense suburban development, surface connection between these two sites providing for wildlife movement is not expected. The vineyards may provide a wildlife movement corridor for large mammals and birds moving west to east or vice versa. The surface streets of Main Street and associated

residential development act as an effective barrier to north-south movements for smaller species.

Special-status Natural Communities

CDFG has identified a variety of natural habitats as sensitive natural communities, which CEQA guidelines require to be evaluated and protected during environmental review. Sensitive natural communities identified in Contra Costa County include marshes, vernal pools, native grasslands, several types of woodland, unique vegetation found on serpentine soils, and coastal dunes. Many of these communities include special status species. Special-status natural communities do not exist on the Project site, and thus focused surveys (e.g., wetland delineation, habitat mapping) or mitigation recommendations are not warranted.

Special-status Plant Species

Special-status plant species may meet one or more of the following:

- Plants listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.12 for listed plants and various notices in the Federal Register for proposed species);
- Plants that are candidates for possible future listing as threatened or endangered under the FESA (64 FR 205, October 25, 1999; 57533-57547);
- Plants that meet the definitions of rare or endangered species under the California Environmental Quality Act (CEQA) (CEQA Guidelines, Section 15380);
- Plants considered by the California Native Plant Society (CNPS) to be “rare, threatened, or endangered” in California (Lists 1B and 2 species in CNPS [2001]);
- Locally important occurrences of plants listed by CNPS as plants for which more information is needed and plants of limited distribution (Lists 3 and 4, respectively, species in CNPS [2001]);
- Plants listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 CCR 670.5);
- Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.). Plants considered sensitive by other federal agencies (i.e., U.S. Forest Service, Bureau of Land Management) or state and local agencies or jurisdictions; or
- Plants considered sensitive or unique by the scientific community or occurring at the limits of its natural range (CEQA Guidelines, Appendix G).

Of the 29 special-status plant species expected in the Project region, none is considered to have a high or moderate potential to occur within the Project area due to the highly altered nature of the site. Significant impacts to special-status plant species resulting from development of the site are highly unlikely. Focused botanical surveys are not warranted (See Appendix A of Appendix E of this DEIR, Potentially occurring special-status plant species at the River Oaks Crossing Specific Plan Area.)

Special-status Animal Species

Special-status animal species include those listed as Endangered, Threatened, Rare, or as Candidates for listing by the USFWS (1996, 1998) and/or CDFG (2003b). Other species regarded as having special-status include special animals, as listed by the CDFG (2003b). Additional animal species receive protection under the Bald Eagle Protection Act and the Migratory Bird Treaty Act (16 U.S.C. 703-711). The Fish & Game Code of California provides protection for "fully protected birds" (§ 3511), "fully protected mammals"(§ 4700), "fully protected reptiles and amphibians" (§ 5050) and "fully protected fish" (§ 5515). The California Code of Federal Regulations (Title 14) prohibits the take of Protected amphibians (Chapter 5 §41), Protected reptiles (Chapter 5 §42) and Protected furbearers. Additional definitions are given in the California Environmental Quality Act Section 15380(d).

Special-status wildlife species not addressed in this discussion include those that are strictly associated with northern coastal salt marsh habitat present in the Bay-Delta, a habitat that is not present within the Project area. These species include California clapper rail (*Rallus longirostris obsoletus*), saltmarsh yellowthroat (*Geothlypis trichas sinuosa*), Suisun song sparrow (*Melospiza melodia maxillaris*), San Pablo song sparrow (*Melospiza melodia samuelis*), Suisun shrew (*Sorex ornatus sinuosus*), saltmarsh vagrant shrew (*Sore xvagrans halicoetes*), ornate saltmarsh shrew (*Sorex ornatus salicornicus*) and salt marsh harvest mouse (*Reithrodontomys raviventris*). The San Joaquin kit fox (*Vulpes macrotis mutica*) is not addressed in this report based on the isolation of the site from known locations further south.

Based on the California Natural Diversity Data Base (CNDDB 2003) and an understanding of the geographic range and habitat affinities of special-status animals, a total of 40 special status animal species were considered to have potential to occur within the study area. Below is a description of those species pertinent in today's regulatory environment and their potential for occurrence. (See Appendix B of Appendix E of this DEIR, Potentially occurring special-status animal species at the River Oaks Crossing Specific Plan Area.)

Vertebrates

The *silvery legless lizard* (*Anniella pulchra pulchra*), a federal Species of Concern and California Special Concern species, is associated with sandy soils with sparse vegetative cover. Soil moisture is critical for this species and may limit the distribution of the species. The local abundance and geographic distribution of this species is poorly understood for this region. Although two sightings of silvery legless lizards were reported in 2000 at the ADNWR (USFWS 2001), it is highly unlikely that this species occurs on the River Oaks Crossing property based on the intense agricultural practices. Areas that have been disturbed by agricultural practices or other human uses, such as plowing or bulldozing, apparently become inhospitable to legless lizards (Jennings and Hayes 1994). The presence of non-native plant species also reduces the potential for the species to occur because often the non-native species, such as eucalyptus trees, alter the soil moisture or substrate so that the area becomes inhospitable to the species. For these reasons, silvery legless lizard is considered not to have any potential for occurrence on site.

The *California horned lizard* (*Phrynosoma coronatum frontale*), a federal Species of Concern and California Special Concern species, is associated with sandy soils, and preys upon native ant species. This species was last observed in the ADNWR in 1977 (USFWS 2001). Surveys conducted in 1982 revealed only two lizard species extant in the ADNWR, side-blotched lizards and western fence lizards. The agricultural practices within the study area preclude the presence of California horned lizard.

California tiger salamander (*Ambystoma californiense*), a federally proposed Threatened species, and a California species of concern, spend most of the year as adults underground in the burrows of ground squirrels and other small animals feeding on insects (Stebbins 1985). Adult salamanders are nocturnal and emerge for only a few weeks per year from their underground retreats. Following heavy winter rains (normally December-February) adults emerge briefly to lay their eggs in seasonal wetlands, slow moving streams, ponds, and ephemeral pools, preferring rain pools, alkali sinks or cattle troughs that have muddy bottoms or contain some algal growth in the water for hiding in, but which are devoid of fish. Agricultural and urban development has eliminated much of the former habitat of this species (Stebbins 1985). Agricultural practices within the study area preclude the presence of this species.

Western burrowing owl (*Athene cunicularia*), is a federal species of concern and is currently being petitioned for listing as Threatened with the CDFG. Like other raptors and birds in general, the western burrowing owl is protected under California Fish and Game Code 3503.5 and the federal Migratory Bird Treaty Act. The burrowing owl is a small, longlegged owl, with dull brown plumage that is barred and spotted with white. Burrowing owls are typically observed on the ground, at or near a burrow, or on elevated areas such as dirt mounds or fence

posts that are used as observational or hunting perches. Burrows are the essential component of burrowing owl habitat (CDFG 1995, CBOC 1993) and are often the limiting factor in occupied habitat (Zarn 1974). Burrows used by burrowing owls are usually dug in loose soil by small mammals, such as California ground squirrel, and are enlarged by the owls for nesting. Other structures used for nesting include burrows located under slabs of concrete, railroad ties, wood debris piles, and other anthropogenic features (CBOC 1993, Tatarian, personal observations). Although individuals, signs, or burrows of a suitable size were not observed on site, even near the BN/SF RR, a moderate potential exists for this species to occur on-site.

Passerines observed on site, such as mocking birds and mourning doves, may nest in the few remaining walnut trees that are located around the perimeter of the study area and within the vineyard, as well as the oleander bushes lining the southern boundary of the Project site, on site. A high potential exists for occurrence of nesting passerines within these trees and bushes.

Invertebrates

The Project site is situated in a geographic area that historically supported numerous special-status invertebrate taxa. Twenty-one special-status invertebrates are known to have historically occurred, or currently occur in the general vicinity of this Project site. These species include 18 insects, one snail, and two crustaceans (Arnold 2003). Species are addressed here for one or more of the following reasons:

- The site is located within or near the geographic ranges of the species;
- Species are associated with particular soil types present on site; and/or
- Species are associated with plant communities that could occur at the site.

Historical records for all of the species included in the invertebrate assessment indicate that they have been observed in northeastern Contra Costa County or nearby areas (in particular a number of taxa indigenous to the Antioch Dunes, which is located approximately two miles northwest of the River Oaks Crossing property). Most of these species are associated either with sandbased terrestrial or freshwater aquatic habitats in the Delta area.

All of the target invertebrate taxa have status only at the federal level, as invertebrates are generally not recognized as rare or endangered by the State of California. Nonetheless, all of the 21 invertebrates would satisfy the criteria of a rare species as defined by the California Environmental Quality Act (CEQA).

None of these invertebrates are considered to have a high or moderate potential to occur in the study area. Future development of the site is not expected to adversely impact these species. Focused surveys for special-status invertebrates species are not warranted.

Lange's Metalmark Butterfly (*Apodemia mormo langei)*. The Project site was visited during the flight period of this endangered butterfly, but individuals were not observed. Because its larval food plant, *Eriogonum nudum* ssp. *auriculatum*, is absent from the site, potential for occurrence of this species does not exist on-site.

San Joaquin Dune Beetle (*Coelus gracilis*). This species burrows in the sand of well-developed sand dunes. Sand was briefly sifted in a few portions of the site, but specimens of this beetle were not found. Based on the degraded habitat conditions at the property, the potential for occurrence of this species is considered to be low.

Curved-foot Hygrotus Diving Beetle (*Hygrotus curvipes*). Aquatic habitats were not observed at the Project site, thus this beetle could not survive there. The Project site is a short distance from the type locality in Oakley. The study determined that the species did not have any potential for occurrence on the Project site.

Molestan Blister Beetle (*Lytta molesta*). This species is associated with grassland habitats and adults are found on various wild flowers or flowers of native shrubs. The sandy soils are potential areas where the ground-nesting bees, that the beetle parasites, would likely nest. However, burrows of ground-nesting bees known to serve as hosts for the beetle were not found on site. Because the native vegetation at the site has been converted to agricultural and is dominated by introduced species, the potential for occurrence of this species considered to be low.

Delta June Beetle (*Polyphylla stellata*). This species has been observed in the Sacramento area in riparian-savanna situations on sandy soils. Related species are known to feed on the roots of oaks. Individual coast live oak (*Quercus agrifolia*) are not present on site. The species is not considered to have any potential for occurrence on site.

Ciervo Aegialian Scarab Beetle (*Aegialia concinna*). A limited focus survey was performed for this beetle by sifting sand at a few locations on the property, and beetles were not observed. Because of the continued agricultural activities, it is doubtful that the Ciervo Aegialian scarab beetle occurs at the Project site.

Anthicid Beetles (*Anthicus antiochensis* and *A. sacramento*). Both species have been found at other small sand deposits, including dredge spoils. Sand was sifted at a few locations on site, but anthicid beetles were not found. However,

due to the presence of loose sand in the Project area, there is a low to moderate potential for occurrence of both anthicid beetles on site. Neither of these species has any formal status as a protected species.

Andrenid Bees (*Perdita hirticeps luteocincta* and *P. scitula antiochensis*). Historical records indicate that these sand dune indigenous bees are active in early fall. However, andrenids were not observed during the September 1 site visit. These species are known to visit the flowers of various native plants, especially *Eriogonum nudum* and *Gutierrezia*, which were not observed at the Project site. These species are considered not to have potential for occurrence on site due to a lack of favored food plants and the high level of disturbance to the soil surface.

Sphecid Wasps (*Eucerceris ruficeps* and *Philanthus nasalis*). Both of these species are associated with sand dunes, a habitat type that is not present at the property. Therefore, neither species has potential to occur on site.

Antioch Mutillid Ant (*Myrmosula pacifica*). This species is probably a synonym of a more widespread mutillid. Thus, this species may not be as unique as was originally believed. None were found on site and its potential to occur on site is considered to be low.

Robberflies (*Cophura hurdi*, *Efferia antiochi*, and *Metapogon hurdi*). Three robberfly species are associated primarily with sand dunes, a habitat type that does not occur at the property. The sandy soils on site are probably too disturbed to support any of these three species; these species are considered not to have potential for occurrence on site.

Katydids (*Idiostatus middlekauffi* and *Neduba extincta*). Two species of katydid were formerly found at the Antioch Dunes, but neither has been seen for several decades. *Neduba extincta* is known from only a single specimen. *Idiostatus middlekauffi* was associated with various native dune shrubs. Although likely to occur in the area, the potential for occurrence on site is considered to be low due to the lack of native plant communities.

Bridges Coast Range Shoulderband Snail (*Helminthoglypta nickliniana bridgesii*). This snail prefers to hide under downed branches or logs, or in crevices in boulders and rock outcrops. Because these types of habitats are not present on site, this snail was determined not to have potential for occurrence on-site.

Vernal Pool and Mid-Valley Fairy Shrimp (*Branchinecta lynchi* and *B. mesovallensis*). Vernal pools, swales, or other seasonally ponded wetlands normally inhabited by these fairy shrimp are not located at the site. these species are considered not to have potential for occurrence on site.

Regulatory Environment

Riparian areas, wetlands, waters of the U.S., and special-status species and communities are considered sensitive biological resources and fall under the jurisdiction of several regulatory agencies. Impacts to these areas often require federal, State, and/or local permits or agreements. The permits required vary depending upon the location of the project and the type and extent of impacts. However, prior to the issuance of any permit for actions that would result in impacts to wetlands, waters, or special-status species or communities, notification to all or some of the following agencies may be required:

- U.S. Army Corps of Engineers (USACE), Sacramento District
- California Department of Fish and Game (CDFG)
- California Regional Water Quality Control Board (RWQCB)
- U.S. Fish and Wildlife Service (USFWS)

An overview of the jurisdiction, application requirements and required permits for each of the above-listed agencies is provided in the following sections.

Federal

United States Army Corps of Engineers, Sacramento District

Section 404 of the Clean Water Act (CWA) of 1972 regulates activities that result in the discharge of dredged or fill material into waters of the United States, including wetlands. The primary intent of the CWA is to authorize the United States Environmental Protection Agency (EPA) to regulate water quality through the restriction of pollution discharges, which includes sediments. The United States Army Corps of Engineers (USACE) has the principal authority to regulate discharges of dredged or fill material into waters of the United States. However, the EPA has oversight authority over the USACE and retains veto power over the USACE's decision to issue permits.

Waters of the United States include the following:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;
- All interstate waters including interstate wetlands;
- All other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- Tributaries of the above; and

- Territorial seas.

Federally jurisdictional wetlands are defined as those areas that are inundated or saturated by surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, bogs, vernal pools, seeps, marshes and similar areas.

Because of the recent Supreme Court Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers decision, the USACE does not take jurisdiction over "isolated wetlands." The USACE does take jurisdiction over "adjacent wetlands," which are hydrologically connected wetlands that may in some cases appear "isolated." The Regional Water Quality Board (RWQCB) has authority over "waters of the State" under the Porter-Cologne Water Quality Control Act. Furthermore, in creek or river systems, RWQCB asserts jurisdiction similar to California Department of Fish and Game (CDFG), from top of bank to top of bank. The RWQCB asserts that it has authority over all wetlands, including isolated wetlands.

Any discharge of dredged or fill material into waters of the United States must be approved by the USACE pursuant to Section 404 of the CWA. Two permit types are possible:

- Discretionary Individual Permits; or
- Nationwide Permits (NWPs), which are already in place, non-discretionary, and generally less time-consuming than the Individual Permit. NWPs may be grouped together or "stacked" with certain limitations.

A standard Individual Permit for residential development such as this Project is required if either of the following would occur:

- Discharges that will result in the fill of any tidal waters or wetlands; or
- Impacts to more than one-half acre of non-tidal waters or wetlands, and/or impacts to greater than 300 linear feet of non-tidal waters or wetlands, including creeks (either perennial or ephemeral and generally intermittent as well), arroyos or vegetated and unvegetated tributaries.

In contrast, residential projects that result in impacts to less than one-half acre and/or less than 300 linear feet may be authorized under one of the existing USACE NWPs if they meet all of the NWP General Conditions.

United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries

The Federal Endangered Species Act (FESA) prohibits "take" of federally-listed Threatened or Endangered wildlife species. The FESA defines "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or attempt to engage in any such conduct" 16 U.S.C. Section 1532(19). The FESA requires that actions authorized, funded or carried out by federal agencies do not jeopardize the continued existence of a federally-listed species or adversely modify designated Critical Habitat for such species. If a federal agency determines that a proposed federal action (i.e., issuance of a Clean Water Act Section 404 permit for wetland fill) "may affect" a listed species and/or designated Critical Habitat, the agency must consult with the USFWS and/or NOAA Fisheries for protected marine and anadromous fish species in accordance with Section 7 of the FESA. If take of a federally-listed species may occur, the applicant may be required to obtain an Incidental Take Permit from the USFWS. The Incidental Take Permit allows "incidental" taking of federally-listed species if the take is "incidental to and not the purpose of, the carrying out of an otherwise lawful activity" 16 U.S.C. Section1539(a)(1)(B). An Incidental Take Permit is issued by USFWS only if the applicant, to the maximum extent possible, has minimized and mitigated for the impacts of the taking, provided adequate funding for the mitigation plan, and if the taking would not appreciably reduce the likelihood of the survival and recovery of the species in the wild 16 U.S.C. Section1539(a)(2)(B).

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of state and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

State

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA is similar to the FESA but pertains to state-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Game (CDFG) when preparing California Environmental Quality Act (CEQA) documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. CESA directs

agencies to consult with CDFG on projects or actions that could affect listed species, directs CDFG to determine whether jeopardy would occur, and allows CDFG to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that "overriding considerations" exist; however, the agencies are prohibited from approving projects that would result in the extinction of a listed species.

The CESA prohibits the taking of state-listed endangered or threatened plant and wildlife species. CDFG exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. CDFG may authorize taking if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. CDFG requires preparation of mitigation plans in accordance with published guidelines.

California Department of Fish and Game (CDFG)

The CDFG exercises jurisdiction over wetland and riparian resources associated with rivers, streams, and lakes under CDFG Code Section 1600 to 1607. The CDFG has the authority to regulate work that will do any one or more of the following:

- Divert, obstruct, or change the natural flow of a river, stream, or lake;
- Change the bed, channel, or bank of a river, stream, or lake; or
- Use material from a streambed.

CDFG asserts that its jurisdictional area along a river, stream or creek is usually bounded by the top-of-bank or the outermost edges of riparian vegetation. Typical activities regulated by CDFG under Section 1600-1607 authority include installing outfalls, stabilization of banks, creek restoration, implementing flood control projects, constructing river and stream crossings, diverting water, damming streams, gravel mining, logging operations and jack-and-boring.

Careful project design, including the minimization of impacts and reduction of hard structure surface area (i.e., minimal amounts of cement or rip-rap), is critical for CDFG approval. The CDFG emphasizes the use of biotechnical or bioengineered creek-related components (emphasis on natural materials, sometimes in conjunction with hard materials) that minimize the need for hard structures in creeks.

CDFG Species of Special Concern

In addition to formal listing under FESA and CESA, plant and wildlife species receive additional consideration during the CEQA process. Species that may be considered for review are included on a list of

"Species of Special Concern" developed by the CDFG. CDFG tracks species in California whose numbers, reproductive success, or habitat may be threatened.

CDFG Birds of Prey Protection

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, (1992), which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG.

Regional Water Quality Control Board

Pursuant to Section 401 of the Clean Water Act and EPA 404(b)(1) guidelines, in order for a USACE federal permit applicant to conduct any activity which may result in discharge into navigable waters, they must provide a certification from the RWQCB that such discharge will comply with the state water quality standards. The RWQCB has a policy of no-net-loss of wetlands in effect and typically requires mitigation for all impacts to wetlands before it will issue water quality certification.

Under the Porter-Cologne Water Quality Control Act (Cal. Water Code Section 13000-14920), the RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State's waters. Therefore, even if a project does not require a federal permit (i.e., a NWP from the USACE), it may still require review and approval of the RWQCB. In light of the approval of the new NWPs by the USACE on March 9, 2000 and the SWANCC decision. The RWQCB in response to this, issued guidance for regulation of discharges to "isolated" water on June 25, 2004. The guidance states:

Discharges subject to Clean Water Act section 404 receive a level of regulatory review and protection by the USACE and are also subject to streambed alteration agreements issued by the CDFG; whereas discharges to waters of the State subject to SWANCC receive no federal oversight and usually fall out of CDFG jurisdiction. Absent of RWQCB attention, such discharges will generally go entirely unregulated. Staffing constraints require the RWQCB to regulate some dredge and fill discharges of similar extent, severity, and permanence to federally-protected waters of similar value. Dredging, filling, or excavation of "isolated" waters constitutes a discharge of waste to Waters of the State, and

prospective dischargers are required to submit a report of waste discharge to the RWQCB and comply with other requirements of Porter-Cologne.

When reviewing applications, the RWQCB focuses on ensuring that projects do not adversely affect the "beneficial uses" associated with waters of the State. Generally, the RWQCB defines beneficial uses to include all of the resources, services and qualities of aquatic ecosystems and underground aquifers that benefit the State. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration of water quality control measures into projects that will result in discharge into waters of the State. For most construction projects, RWQCB requires the use of construction and post-construction Best Management Practices (BMPs). In many cases, proper use of BMPs, including bioengineering detention ponds, grassy swales, sand filters, modified roof techniques, drains, and other features, will speed project approval from RWQCB. Development setbacks from creeks are also requested by RWQCB as they often lead to less creek-related impacts in the future.

Additional requirements of the RWQCB are discussed in the hydrology section of this EIR.

Waters of the State

Waters of the state, including wetlands, are considered sensitive biological resources and fall under the jurisdiction of California Department of Fish and Game (CDFG) California Regional Water Quality Control Board (RWQCB).

The CDFG exercises jurisdiction over wetland and riparian resources associated with rivers, streams, and lakes under California Fish and Game Code Section 1600 to 1616. The CDFG has the authority to regulate work that will substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. California Department of Fish and Game's jurisdictional area along a river, stream or creek is usually bounded by the top-of-bank or the outermost edges of riparian vegetation. Typical activities regulated by CDFG under Section 1600-1616 authority include installing outfalls, stabilizing banks, implementing flood control projects, constructing river and stream crossings, diverting water, damming streams, gravel mining, and logging.

Natural Community Conservation Planning Act

The Natural Communities Conservation Planning Act (NCCP) program is an unprecedented effort by the State of California, as well as numerous private and public partners that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. The program, which began in 1991 under the California Natural Community Conservation Planning Act, is broader in its orientation and objectives than CESA and ESA; these laws are

designed to identify and protect individual species that are already listed as threatened or endangered. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use (CDFG, 2003).

Local

East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan

On January 25, 2000, the Contra Costa County Board of Supervisors declared its intent to participate in the development of a Habitat Conservation Plan (HCP) for East Contra Costa County. On June 30, 2000, the East Contra Costa County Habitat Conservation Plan Association Agreement went into effect. This agreement established the East Contra Costa Habitat Conservation Plan Association (HCPA) as the lead agency in drafting the Habitat Conservation Plan for submittal to the governing boards and councils of member agencies, oversee compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), and would serve as the lead agency under CEQA for developing the HCP. The City of Oakley elected to participate in the development of the HCP and is a member of the HCPA.

The City of Oakley approved the East Contra Costa County Habitat Conservation Plan (HCP) and authorized execution of the Implementation Agreement and Joint Exercise of Powers Agreement on January 22, 2007 (Resolution No. 12-07). The U.S. Fish and Wildlife Service signed the federal permit for the HCP on July 25, 2007. The California Department of Fish and Game signed the state permit for the HCP on August 6, 2007. Therefore, East Contra Costa County has an officially approved HCP as of August 6, 2007. The next step is for the participating cities and county to approve the implementing ordinance (within 90 days of the August 6th date) and adopt the fee structure that is set forth in the HCP. The City anticipates the HCP and its fee schedule will be in effect prior to its consideration to certify the River Oaks Crossing EIR.

The River Oaks Crossing property is within the HCP inventory area. The HCP development fee is based on the project location. The HCP includes three Fee Zones, defined by a map that determines the fee paid by development (Figure 9-1 of the HCP), regardless of the land cover type within them. The River Oaks Crossing Specific Plan site is within the HCP Development Fee Zone I: Cultivated and Disturbed Lands. Land within this zone is generally dominated by cultivated agriculture but also includes undeveloped areas within the existing urban area of Pittsburg, Brentwood, and Oakley. The development fee in Zone I is approximately $12,000 per acre.

City of Oakley General Plan

The following applicable goals and policies are from the Oakley 2020 General Plan Land Use Element:

General Land Use

Goal 2.1 Guide development in a manner that creates a balanced and desirable community, maintains and enhances the character and best qualities of the community, and ensures that Oakley remains an economically viable City.

Policy 2.1.5 Preserve open space areas, of varying scales and uses, both within development projects and at the City's boundary.

Policy 2.1.6 Ensure a strong physical connection to the Delta and the waterfront, including convenient public access and recreational opportunities.

Policy 2.1.10 When considering large-scale development projects, the City may, at its discretion, authorize a Specific Plan (SP) or Planned Unit Development (PUD) approach that allows flexibility within a project area. Under this approach, the distribution of land uses may vary from the land uses as designated on the Land Use Diagram. The SP/PUD approach shall not allow either an overall greater development density than allowed under the Land Use Diagram, or a combination of uses that undermines the overall intent of the project area as established under the General Plan policies and Land Use Diagram.

Implementation Program 2.1.F Provide public access to the Delta and the Oakley waterfront through discretionary approvals of development projects, coordinated efforts with involved agencies and organizations, and the improvement of City public facilities.

The following applicable goals and policies are from the Oakley 2020 General Plan Open Space and Conservation Element:

Open Space

Goal 2.6 Ensure that open space areas are properly managed and designed to conserve natural resources and enhance the community's character and provide passive recreational activities.

Policy 2.6.2 Preserve, enhance and/or restore selected existing natural habitat areas, as feasible.

Policy 2.6.3 Create new wildlife habitat areas in appropriate locations, which may serve multiple purposes of natural resource preservation and passive recreation, as feasible.

Biological Resources

Goal 6.3 Encourage preservation of important ecological and biological resources.

Policy 6.3.1 Encourage preservation of important ecological and biological resources as open space.

Policy 6.3.2 Develop open space uses in an ecologically sensitive manner.

Policy 6.3.3 Use land use planning to reduce the impact of urban development on important ecological and biological resources identified during application review and analysis.

Policy 6.3.4 Encourage preservation and enhancement of the natural characteristics of the San Joaquin Delta and Dutch Slough in a manner that encourages public access.

Policy 6.3.5 Encourage preservation and enhancement of Delta wetlands, significant trees, natural vegetation, and wildlife populations.

Policy 6.3.6 Encourage preservation of portions of important wildlife habitats that would be disturbed by major development, particularly adjacent to the Delta.

Policy 6.3.7 Preserve and expand stream corridors in Oakley, restoring natural vegetation where feasible.

Implementation Program 6.3.A Prior to development within identified sensitive habitat areas, the area shall be surveyed for special status plant and/or animal species. If any special status plant or animal species are found in areas proposed for development, the appropriate resource agencies shall be contacted and species-specific management strategies established to ensure the protection of the particular species. Development in sensitive habitat areas should be avoided or mitigated to the maximum extent possible.

Implementation Program 6.3.B Participate with regional, state, and federal agencies and organizations to establish and preserve open space that provides habitat for locally present wildlife.

Protection and Preservation Ordinance

The City of Oakley Zoning Ordinance for Heritage Tree Preservation and Tree Preservation was adopted by the City Council in October 2005. The City of Oakley Heritage Tree Preservation Ordinance defines heritage trees as those that have a circumference of 50 inches or greater, or any tree or group of trees particularly worthy of protection. The Heritage Tree Preservation Ordinance prohibits the removal or destruction of any heritage tree unless a permit has been obtained. It should be noted that a permit is not required for the maintenance of heritage trees, including trimming and pruning.

Other Statutes, Codes, and Policies Affording Limited Species Protection

California Native Plant Society

The California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (Tibor, 2001). Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review. The following identifies the definitions of the CNPS listings:

List 1A: Plants believed extinct.
List 1B: Plants rare, threatened, or endangered in California and elsewhere.
List 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere.
List 3: Plants about which we need more information - a review list.
List 4: Plants of limited distribution - a watch list.

Thresholds of Significance

For the purposes of this EIR, the following standards of significance were adapted from Appendix G of the CEQA Guidelines, impacts are considered significant if implementation of the proposed Project would do any one or more of the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- Conflict with the provisions of an adopted Habitat Conservation Plan Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish or result in the loss of an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important, but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of a defined important resource on a population-wide or region-wide basis.

Impacts and Mitigation Measures

Basis for Impacts

The findings included in the biological constraints report prepared for the proposed Project are based on the following: 1) a printout for the Antioch North, Antioch South, Jersey Island and Brentwood 7.5 minute quadrangles from the California Natural Diversity Database (CNDDB 2003), 2) assessment of habitat types and surrounding land use completed by reviewing recent aerial photographs, and 3) reconnaissance-level surveys by biologists completed for the Project site.

Biologists Mike Wood and Autumn Garrett of Wood Biological Consulting conducted a general habitat assessment on August 8, 2003. Wildlife biologist Trish Tatarian of Wildlife Research Associates conducted an assessment of wildlife habitats on August 4, 2003 to assess the site's potential to host special-status animals. Dick Arnold of Entomological Consulting Services, Ltd. conducted a habitat assessment for special-status invertebrates on September 1, 2003. These surveys were intended only as reconnaissance-level site visits to identify habitat types and to assess the potential for the presence of special-status species within the study area. Focused special-status plant or animal surveys were not conducted as part of these efforts. The Project site did not support any indicators of wetland habitat during the reconnaissance surveys; consequently formal wetland delineation was not performed as part of this study.

Surveys were conducted on foot during daylight hours; the entire perimeter of the study area, and all distinct habitats were visited and described. Dominant plant species for each plant community were recorded and the site was surveyed for any potential drainages or wetlands. All wildlife species observed were also recorded. This survey was intended only as a reconnaissance-level evaluation of habitats and to assess the potential for the presence of special-status species.

Focused special-status plant or animal surveys were not conducted as part of this effort. Information on special-status plant species was compiled through a review of the California Natural Diversity Data Base (CNDDB 2003), the California Native Plant Society's *Electronic Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2003), the California Department of Fish and Game's (CDFG) *Special Plants* (CDFG 2003a), *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CDFG 1999a), the U.S. Fish and Wildlife Service's (USFWS).

Analysis of Project Impacts

Based upon the biological assessment reports prepared for the proposed Project the analysis determined that the proposed Project would result in potential impacts to heritage trees, passerines, and the burrowing owl (discussed in detail in Impacts BR-1 through BR-3).

The biological resources study for the proposed Project determined that, because the of the density of suburban development in the vicinity of the proposed Project and because surface streets such as Main Street act as an effective barrier to north-south migration movements, that impacts related to habitat modification and fragmentation would not be expected.
The study area consists predominantly of actively cultivated vineyard uses, with the exception of ruderal habitat at the southwest corner and along the northern border, between the dirt road and railroad tracks. Because virtually all of the naturally occurring vegetation on site has been removed by cultivation, grading, disking, and filling, the biological study did not find that any special-status plant species would be impacted by the development of the proposed Project. In addition, because the proposed Project site is primarily cultivated vineyard land uses, the proposed Project would not be expected to conflict with the City's General Plan Goal 2.6 and associated policies which advocate the conservative management of open space.

Furthermore, the proposed Project site does not support any existing wetlands and is designated for development by the City of Oakley General Plan. The development of the proposed Project would not result in any conflicts to the recently approved East Contra Costa County HCP.

Impact BR-1 - Tree Removal

The Oakley Heritage Tree Preservation Ordinance states that a heritage tree is a tree either 50 or more inches diameter at breast height; or any tree or trees "worthy of protection" because they have historical or ecological interest or significance, is dependent upon other trees for health or survival, or is considered an outstanding specimen due to location, size, age, rarity, shape or health. A total of 46 trees were included in the tree inventory prepared for the Project site (see Figure 3.4-1 and Table 3.4-1). Of these, only three were found to qualify as

Heritage Trees. These include tree numbers 32, 35 and 37, two of which are located adjoining the Project site, within the Bridgehead Road street right-of-way. The remaining tree (#32) is situated just inside the southwest Project boundary adjoining Main Street.

A remaining 43 trees were found to occur within the Project boundary. None of these trees were found to quality for Protected Tree status, because each is either situated adjoining the public right-of-way or otherwise located in an isolated setting not adjacent to a riparian, foothill woodland, or oak savanna habitat. An additional 32 trees were not included in the inventory because their size and stature were well below the identified standards for protected or heritage trees.

Grading operations on the Project site may result in the loss of up to 78 trees, including three Heritage Trees (numbers 32, 35 and 37). Loss of the three Heritage Trees (one on-site and two off-site) would result in a ***potentially significant*** impact, but implementation of the following measure would reduce this impact to a ***less-than-significant*** level.

Mitigation Measure(s):

BR-1 *Prior to the issuance of grading permits that would result in the removal of Heritage Trees, the Project developer shall apply for a tree removal permit and submit a tree replacement plan for the review and approval of the Community Development Department. The plan shall be in compliance with the City of Oakley Zoning Ordinance. The plan shall include but not be limited to:*

- *A map showing where the replacement and new trees will be located; and*
- *Tree removal shall be mitigated at a minimum 3:1 ratio or other ratio acceptable to the City of Oakley, or an in-lieu fee shall be paid on a per-inch basis as determined by the Community Development Department.*

Impact BR-2 – Passerines

The biological assessment determined that the proposed Project site contains habitat, such as the walnut trees located around the perimeter of the study area and within the existing vineyards as well as the oleander bushes lining the southern boundary of the Project site, which could support the Loggerhead Shrike, a California Species of Concern. Therefore, the proposed Project could result in the removal of potential passerine nesting habitat in the trees and bushes on site. A reconnaissance-level survey was conducted on the site, indicating the potential for Loggerhead Shrike nesting in trees existing and adjoining the site. Disturbance during the nesting season could result in potential

nest abandonment and mortality of young. This is a ***potentially significant*** impact that can be reduced to ***less-than-significant*** with the following mitigation measures incorporated.

Mitigation Measure(s):

BR-2(a) *The removal of any trees or shrubs shall occur outside of the avian nesting season. If removal of buildings, trees, emergent aquatic vegetation, or shrubs occurs, or construction begins between February 1 and August 31 (nesting season for passerine or non-passerine land birds), a nesting bird survey shall be performed by a qualified biologist within one week prior to the removal or disturbance of a potential nesting structure, trees, or shrubs, or the initiation of other construction activities. During this survey, a qualified biologist shall inspect all potential nesting habitat (trees, shrubs, structures, grasslands, pastures, etc.) in and immediately adjacent to the impact areas for nests.*

If a nest is not found, mitigation is not required. If a nest is found onsite, then Mitigation Measure BR-2(b) shall be implemented.

BR-2(b) *All vegetation and structures with active nests shall be flagged and an appropriate non-disturbance buffer zone shall be established around the nesting tree. The size of the buffer zone shall be determined by the Project biologist in consultation with CDFG, shall be submitted to the City for review and will depend on the species involved, site conditions, and type of work to be conducted in the area. Typically, if active nests are found, construction activities shall not take place within 500 feet of the raptor nests and within 75 - 100 feet of other migratory birds until the young have fledged. A qualified biologist shall monitor active nests to determine when the young have fledged and are feeding on their own. The Project biologist and CDFG shall be consulted for clearance before construction activities resume in the vicinity.*

Impact BR-3 - Burrowing Owls

Burrowing owls were not observed, and burrows or other indicators of the presence of burrowing owls were not found during the site reconnaissance. If grading or ground disturbance occurs during or after the winter period, on-site conditions may change, and burrowing owls could be attracted to the site. Grading/filling operations would also affect areas along the perimeter of the site that could potentially be used by burrowing owls for nesting purposes, either before or after grading operations. Disturbance during either the winter or nesting season, when owls could be present, could result in the take of adults, nest abandonment and mortality of young. This is a ***potentially significant*** impact,

but will be reduced to ***less-than-significant*** with implementation of the following mitigation measures.

Mitigation Measure(s):

BR-3(a) *Prior to issuance of a grading permit, pre-construction surveys of all potential burrowing owl habitat shall be conducted by a qualified biologist within the Project area and within 250 feet of the Project boundary. Presence or sign of burrowing owl and all potentially occupied burrows shall be recorded and monitored according to CDFG and California Burrowing Owl Consortium guidelines. If burrowing owls are not detected by sign or direct observation, construction may proceed.*

BR-3(b) *Prior to issuance of a grading permit, focused over-wintering surveys of all potential burrowing owl habitat shall be conducted by a qualified biologist within the River Oaks Crossing Specific Plan area. Presence or sign of burrowing owl shall be recorded and monitored according to CDFG and California Burrowing Owl Consortium guidelines.*

BR-3(c) *If potentially nesting burrowing owls are present during pre-construction surveys conducted between February 1 and August 31, grading shall not be allowed within 250 feet of any nest burrow during the nesting season (February-August), unless approved by the CDFG.*

BR-3(d) *If burrowing owl is detected during pre-construction surveys outside the nesting season (September 1-January31), passive relocation and monitoring may be undertaken by a qualified biologist following CDFG and California Burrowing Owl Consortium guidelines, which involve the placement of one-way exclusion doors on occupied and potentially occupied burrowing owl burrows. Owls shall be excluded from all suitable burrows within the Project area and within a 160-foot buffer zone of the impact area. A minimum of a week shall be allowed to accomplish this task and allow for owls to acclimate to alternate burrows. These mitigation actions shall be carried out prior to the burrowing owl breeding season (February 1- August 31) and until construction begins, the site shall be monitored weekly by a qualified biologist to ensure that burrowing owls do not re-inhabit the site.*

BR-3(e) *The City is in the process of approving an ordinance to enforce mitigation fee payment schedules based upon the recently approved East Contra Costa County Habitat Conservation Plan (HCP). The River Oaks Crossing Specific Plan area is within the*

HCP inventory area. The HCP development fee is based on the project location. The HCP includes three Fee Zones, defined by a map that determines the fee paid by development (Figure 9-1 of the HCP), regardless of the land cover type within them. The River Oaks Crossing site is within the HCP Development Fee Zone I: Cultivated and Disturbed Lands. The development fee in Zone I is approximately $12,000 per acre. The HCP fee will apply to the entire 76.4-acre site, which would is approximately $916,800 in present day dollars (76.4 acres times $12,000).

BR-3(f) *Before construction activities begin, all construction personnel shall receive training that includes photos of burrowing owl for identification purposes, habitat description, limits of construction activities in the Project area, and guidance regarding general measures being implemented to conserve burrowing owl as they relate to the Project.*

BR-3(g) *A monitoring report of all activities associated with pre-construction surveys, avoidance measures, and passive relocation of burrowing owls shall be submitted to the City and CDFG no later than two weeks before initiation of grading.*

Cumulative Impacts

The Oakley area, like many other communities in the Bay Area, is experiencing a great deal of urban growth. Many housing developments are already approved in the surrounding areas (See Chapter 4 for a listing of the cumulative projects). In the immediate vicinity of the Project site are several projects in various stages of the entitlement and development process.

The Oakley 2020 General Plan EIR (Impact 3.9-F) states that a potentially significant impact to biological resources would result from the cumulative conversion of habitat; however, implementation of applicable General Plan policies and programs would reduce the impact to a less-than-significant level. One of the programs that the Oakley General Plan EIR lists under Impact 3.9-A is Program 6.3.A, which is in the Open Space and Conservation Element of the Oakley 2020 General Plan. Program 6.3.A states that prior to development within identified sensitive habitat areas, the area shall be surveyed for special status plant and/or animal species. If any special status species are found, the program requires consultation with the appropriate resource agency to establish management strategies to ensure the protection of the particular species. The mitigation measures pertaining to special status plant and animal species included in this EIR would be consistent with program 6.3.A and the impacts associated with the potential loss of the animal species identified above would be mitigated to less-than-significant levels by the mitigation measures included in this DEIR. Therefore, because the impacts pertaining to the loss of special-status

species and heritage trees would be mitigated to a less-than-significant level, and proposed Project's contribution to the cumulative condition would not be cumulatively considerable; therefore, the impact would be ***less-than-significant***.

3.5 CULTURAL RESOURCES (CR)

The Specific Plan Project's effects on cultural resources are analyzed in the detailed Cultural Resources Assessment contained in Appendix F. The assessment includes a record search, archaeological field survey and complete assessment of potential cultural resources conducted for the Project site in compliance with Section 21084.1 of the California Environmental Quality Act (CEQA). Following is a summary of the analysis, including the Project's effects in relationship to standards of significance, and mitigation measures required to reduce potential impacts to a less-than-significant level.

Environmental Setting

Existing Conditions

The River Oaks Crossing Specific Plan Project area is situated on the western margin of California's Central Valley, one of two principal grassland communities that exist in California (the second being the coastal grassland that covers middle-elevation hillsides from San Francisco to southern Oregon). Together these are known as the Pacific Prairie (Brown 1985:84). The Project vicinity, located east of Antioch, comprises a series of low, rolling hills west of the Project area that rise in elevation to nearly 300 feet above sea level, and flat expanses on the Project site and to the east toward the Delta.

Annual precipitation in the region varies from six to 29 inches, with precipitation concentrated in the fall, winter, and spring months. This climate is much like that found in the Mediterranean: mild, rainy winters, and hot, dry summers. After the first rain at the end of October or early November, the vegetation becomes green and remains green, but not growing, until late February, when the grasses begin to grow rapidly. By early May, the area has usually changed to dry, golden-colored grasses, and stays that way until fall.

Temperatures in the summer are high, often reaching over 38° C (100° F) (Brown 1985:87). The combination of this climate and the arable soils of the Central Valley have proven irresistible to farmers; the extensive agricultural use of the region has resulted in the disappearance of much of the original grassland community. Grasslands persist, but the dominant species are completely different from those found 150 years ago by settlers (Brown 1985:84). With some exceptions, however, the flora and fauna have not changed as dramatically in this part of Contra Costa County as in other areas of California. Grazing cattle have prevented the overgrowth of vegetation and trees that would require protective fire control. Common vegetation observed during the survey include: lupine, blue dicks (Brodiaea pulchella), blue bells, mustard (Brassica sp.), common groundsel (Senecio vulgaris), purple sanicle (Sanicula bipinnatifida), yellow fiddleneck (Amsinckia sp.), shepherd's-purse (Capsella Bursa-pastoris),

chamomile, cilantro, miner's lettuce (Montaiper foliata), oak (Quercus sp.), buckeye (Aesculus californica), and various other native and imported grasses.

Animal life within the region is diverse. Unlike prehistoric times when animals such as pronghorn, antelope, tule elk, mule and black-tail deer, and grizzly bears occupied the area, today the region favors small, herbivorous mammals – especially voles, pocket gophers, ground squirrels, and pocket mice (Brown 1985:87). The larger, open areas in the vicinity of the Project site attract some larger animals including deer, coyotes, rabbits, skunks, opossum, raccoons, and a number of birds including several types of owls, buzzards, and various raptors.

Paleoenvironment

Most of the western United States was subjected to a series of climatic fluctuations over the past several millennia; the central interior valley portion of California is no exception. Warm/dry episodes were followed by intermittent cool/moist periods (Moratto et al. 1978). The Holocene or Recent Epoch has seen six cool periods followed by five warm periods. The Altithermal period, ending about 2,900 years ago, was a warm/dry episode that apparently had wide-ranging implications throughout the west, leading to changes in animal migrations and plant productivity and distribution. A cooler period followed for the next 1,400 years, followed by yet another warm/dry climate starting about 600 years ago, which remains to the present day.

Native grasses covered the upland environment throughout the area before livestock was introduced to the region in the early 1800s. Although the species of animals inhabiting the Central Valley before the influx of humans is largely known, the type of plants that may have occupied the valley grassland is not as well defined. Purple needlegrass, a bunchgrass found only in California, may have been the dominant grass species. Truly purple in color, purple needlegrass's dried stalks would have lent a distinctive color to the valley grasslands in the summer (Brown 1985:87).

Ethnography

At the time of historic contact with the Spanish missionaries and explorers, the Project area was occupied by the Bay Miwok group of Native Americans. The Bay Miwok spoke a language now considered one of the major subdivisions of the Miwok-Costanoan, which belonged to the Utian family within the Penutian language stock (Shipley 1978: 82-84). Levy (1978:399) places the Bay Miwok territory from the Suisun Bay to just south of Mount Diablo and from there eastward to the Sacramento-San Joaquin Delta. The tribal group associated with the Antioch area was known as the Chupcan. Levy (1978:401) states that on April 3, 1776, members of an exploring expedition visited a village near Antioch. Anza (1930:144) estimated the population of the settlement at 400 persons. The settlement visited probably belonged to the tribelet referred to in the mission

books as Chupcan. Baker and Shoup (1990:4) [citing Bennyhoff (1977) and Milliken (1983)] suggest that the Bay Miwok tribal group living just south of the survey area was probably the Wolwon (also cited as Volvon or Bolbon) people who occupied the upper Marsh Creek drainage east of Mount Diablo. The time at which the Bay Miwok migrated into this area is disputed. Beeler (1959), who has studied the Saclan language, claims it was originally spoken to the east along the lower courses of the Tuolumne, Stanislaus, and the Mokelumne rivers. He surmises that these people were displaced to the west by a northerly push of the Yokuts, which may have been completed as recently as 300 years ago. This implies the Bay Miwok were in their historical territory only a century or less before the first Spanish explorers arrived in the region (Beeler 1959:68).

Farris, Davis, and McAleer (1988:2), in their analysis of ethnographic and ethnolinguistic data, find some support for this position from scholar William Shipley, who maintains the Yokuts' homeland appears to be in the southern San Joaquin Valley. James Bennyhoff; however, disputes this scenario in a personal communication with Farris, Davis, and McAleer (1984). This raises the question: if the Bay Miwok came into this area only as recently as 300 years ago "...whom did they displace? Was it the Costanoan-speaking peoples, Patwin, or some other group?" (Farris, Davis, and McAleer 1988:2) At present there is no answer to the question of the native occupancy of the area before 300 years ago.

The Miwok comprised a group of people united by language but broken into tribal groups (independent political entities such as the Chupcan and Wolwon), each occupying defined territories over which they controlled access to natural resources. Although each tribal group had one or more permanent villages, their territory contained numerous smaller campsites used as needed during a seasonal round of resource exploitation.

Extended families lived in domed, conical structures built of thatched grass. Semisubterranean men's houses were built at the larger village sites, also using thatched grass and earth cover (Kroeber 1970). Tule or balsa canoes were used to navigate to and from islands and for hunting and gathering forays into the delta. Given an abundant and continuous subsistence base, ceremony in Miwok life was fairly extensive, and scholars have written much about it based on early ethnographic accounts (Bennyhoff 1977:11; Kroeber 1970; Levy 1978). Rituals associated with death were of great importance. Two forms of interment were practiced and mortuary goods were often placed into the grave at the time of burial. Cremation was also occasionally practiced. Scholars have suggested the early California environment offered a large assortment of resources for use by native people, although acorns, fish, and game mammals formed the staples of their diet (Baumhoff 1963). Researchers have stressed that acorns, with various seeds, grasses, nuts, berries, and roots were of utmost importance, as plant food collection and preparation formed the center of Miwok technology (Bennyhoff 1977:10; Kroeber 1970:814-815; Gifford 1916:139-194).

The arrival of the Spanish in the San Francisco Bay Area in 1775 led to the rapid demise of native populations, including the Bay Miwok. Diseases introduced by early expeditions and missionaries killed a large number of local peoples, exemplified by a mass burial of 18 individuals adjacent to the Hotchkiss Mound site near Oakley (Heizer 1954). On an expedition through the Central Valley in 1832-1833, Ewing Young observed: In the Fall of 1832 the banks of the Sacramento River, in its whole course through the valley, were studded with Indian villages. On our return, late in the summer of 1833, we found the valleys depopulated. From the head of the Sacramento to the great bend and slough of the San Joaquin, we did not see more than six or eight Indians; while large numbers of their skulls and dead bodies were to be seen under almost every shade-tree near water, where the uninhabited and deserted villages had been converted into graveyards (Cook 1955:318).

With abandonment of the mission system and Mexican takeover in the 1840s, numerous ranchos were established. The few remaining Indians were then forced, by necessity, to work for the ranchos. The native lifestyle in much of northern California ceased to exist by the mid-19th century, and most of the native population vanished with it. For further ethnographic information on the Bay Miwok, refer to Levy (1978) and Bennyhoff (1977).

Regional History

The history of northern California, Contra Costa County, and the Project area in particular, can be divided into several periods of influence. For the purposes of establishing a historic context from which to assess the potential significance of historic sites in the Project area, various periods and local sub-periods, some of which overlap, are defined below. Due to its location beyond the eastern slope of Mount Diablo, about 30 (air) miles from San Francisco Bay, the Project area was largely isolated from the Spanish and Mexican periods of California. Therefore, events associated with the Spanish and Mexican periods, and cultural remains from those periods, are not expected to be reflected in the Project area but are discussed briefly as a point of reference:

- Spanish Period (in California) 1775 – 1822
- Mexican Period 1822 – 1848
- American Period 1838 – present

Spanish Period (1775-1822)

The Spanish period in Alta California began in 1775 when Captain Juan Manuel Ayala's expedition explored the San Francisco Bay and ventured up the Sacramento and San Joaquin rivers in search of a suitable mission site. The first mission in the region was established the following year with the completion of Mission San Francisco de Asis (Mission Dolores) in San Francisco. The mission

era ensued, lasting over the next 46 years, leading to the establishment of numerous missions and outposts, and the subsequent "missionization" of native groups, which contributed to their decimation due to disease and subjugation.

The earliest historical accounts of the Project area come from the Spanish explorers who ventured to Mount Diablo in the late 18th century. Although it is not known if they came into the Project area, they must have passed within a few miles of it (Farris, Davis, and McAleer 1988:7). The Anza-Font expedition of 1776 traveled along the southern shore of Suisun Bay until reaching Antioch where they noticed numerous rancherias before turning southeast in an attempt to cross the tule swamps (Cook 1957:135).

Mexican Period (1822-1848)

Under the Spanish, the missions controlled the land. After Mexico seceded from Spain in 1822, land was granted to private citizens, a practice that increased significantly after the 1833 act of the Mexican legislature that established the secularization of the missions. By 1845, the last of the mission land holdings were relinquished, opening the way for the large ranchos common to California in the mid-1800s. Predominant land-use on the ranchos was the raising of livestock and ranching. American explorers, mostly traders and beaver trappers, were also flocking to the west during this time, and their "trail blazing" led to the settlement of the territory. Jedediah Smith, in 1827, led a party of trappers up the Sacramento River from the San Joaquin Delta region, leading to the establishment of the "California-Oregon Road," followed by numerous explorations over the next twenty-five years (Kyle 1990: preface).

Jose Noriega and his wife, Manuela Fenendez, took possession of the Rancho de Los Meganos (sand dunes ranch) soon after their arrival in 1834. The parcel Noriega claimed was four leagues long and three leagues wide (approximately 17,000 acres), extending east from the foot of Mount Diablo to the mouth of the San Joaquin River. Standing architectural remains from this period are not known to exist in the area. Deterioration of relations between the United States and Mexico resulted in the Mexican War, which ended with Mexico relinquishing California to the United States under the Treaty of Guadalupe Hidalgo of 1848. With the formation of the new State of California, and the onset of the American period, rapid changes were in store for the region. The discovery of gold in the Sierra Nevada in 1848 produced a major population increase in the northern half of California as emigrants sought gold or various jobs producing goods or services for miners. Land use changes resulted as livestock grazed some native grasses to extinction, woodlands were cut for lumber, railroad ties, and mine timbers, and agricultural development occurred on nearly all arable land.

American Period (1838 - present)

In 1836, near the end of the Mexican period, John Marsh arrived in Los Angeles, Alta California. While riding north in search of a place to settle down, he met Jose Noriega. Noriega agreed to accept all of Marsh's money, $500, in exchange for Noriega's Rancho de Los Meganos. Marsh thus became the first Anglo-American to settle in Contra Costa County (Emanuels 1993:204). From 1838 until he built what became known as the "Stone House" in 1856, Marsh lived on the rancho in a small adobe structure. This adobe was apparently located very close to a group of Indians, likely to have been Bay Miwok. Farris, Davis, and McAleer (1988:8) cite a letter from Abby Tuck Marsh (John Marsh's wife) stating that about twenty Indians lived in huts "a few rods from the door of the adobe" (a rod being 16.5 feet). Marsh may have moved a village of natives across Marsh Creek to the northwest in order to put the Stone House where he wanted it (site record for CA-CCO-548 by Farris 1987).

When twin brothers William and Joseph Smith moved their families from Massachusetts to California in 1849, John Marsh was there to greet them. Accounts vary somewhat, but it seems clear that shortly after their arrival the brothers were met by Marsh and quickly acquired land, either from Marsh's vast holdings or from an unknown party (Emanuels 1993:216; Slocum & Co. and Munro-Fraser 2000:671; Kyle 1990:64). The brothers were both carpenters and ordained ministers and they quickly found jobs in "New York of the Pacific," today known as Pittsburgh, constructing housing for the flood of migrants coming to California in search of gold. Joseph died of malaria that first winter.

The following summer, William received news that a ship docking in San Francisco was carrying passengers from Maine wanting to settle permanently in California (Kyle 1990:64). He immediately went to greet them and offered each family a lot at Smith's Landing on which to build a home. Approximately half of the families accepted his offer, and the settlement they created was named Antioch at their 1851 Fourth of July picnic (Slocum & Co. and Munro-Fraser 2000:672-3).

On June 24, 1851, Marsh, who was then in his fifties, married Abbie Tuck. She was a devout Baptist living with missionaries near San Jose. He took her to live in his four-room, earthen floor adobe house. In 1854 he hired artisans to build a more permanent and stately structure, later to be known as the Stone House. The cost of the building was about $20,000 (Historic Record Company 1926:381). Abbie Marsh died in August 1855 before the house was finished, leaving behind John Marsh and their young daughter, Alice (Emanuels 1993:204).

On September 24, 1856, Marsh was stabbed to death on the road just outside Martinez by Jose Olivas, Juan Garcia, and Felipe Moreno, three disgruntled employees who felt he had cheated them out of their wages. They overtook his

buggy on mustangs while he was traveling to Martinez. They lassoed him, pulled him off his buggy, and then stabbed him to death. His driverless horse and buggy continued on to Martinez where it was spotted by some citizens, who went back and found his body (Historic Record Company 1926:382).

After a series of events, Marsh's rancho was finally acquired by James T. Sanford. According to Emanuels (1993:199) the only noteworthy aspect of Sanford was his sale of a few acres to the San Pablo and Tulare Railroad, thereby defining the land for the village of Brentwood. Sanford, together with John F. Williams, owned all of the Brentwood Coal Company, which also held partial title to the Marsh land. In 1878, Sanford missed his mortgage payments on the Marsh property, and the Savings and Loan Society wasted no time in acquiring it (Emanuels 1993:200). The Savings and Loan Society of San Francisco kept most of the rancho land for 22 years, renting it out to dry-land farmers. Rent was paid in the form of wheat or barley at a rate between one-quarter to one-third of their crop (Emanuels 1993:200).

On October 23, 1900, a group of Scottish investors, Balfour-Guthrie Investment Company, bought Rancho de Los Meganos from the Savings and Loan Society for $200,799.43. Even though Balfour-Guthrie purchased the land in 1900, it took until 1913 for the firm to obtain a portion of the ranch still owned by the estate of James T. Sanford (a little more than 5.25 percent of the land), which was offered $50,000 for the parcel. At the same time, the company acquired another 500 acres from a Peter G. King (Hohlmayer 1991a).

On September 16, 1912, a permit was issued by the chief of the U.S. Army Corp of Engineers and authorized by the Secretary of War to divert two hundred cubic feet per second of water from Indian Slough, a branch of Old River (which, in turn, was a branch of the San Joaquin River) in Contra Costa County (Hohlmayer 1991a). Balfour-Guthrie spent $500,000 that same year, building an irrigation system to spread water over more than 22,000 acres, including lands near the cities of Brentwood and Knightsen, Discovery Bay to the east, and the town of Oakley to the north.

The development of this irrigation system changed the land use in the area from cattle, grain, and alfalfa production to dairy farms, orchards (walnuts, cherries, almonds, apricots, peaches, and plums), and vineyards (Hohlmayer 1991b). Other crops, such as tomatoes, strawberries, and beans were begun in the 1950s.

Regulatory Environment

Federal, State and local governments have developed laws and regulations designed to protect significant cultural resources that could be affected by actions that they undertake or regulate. The National Environmental Policy Act (NEPA), National History Preservation Act (NHPA) and California Environmental

Quality Act (CEQA) are the basic federal and State laws governing preservation of historic and archaeological resources of national, regional, State and local significance.

Federal Regulations

Federal regulations for cultural resources are governed primarily by Section 106 of the NHPA of 1966. Section 106 of NHPA requires federal agencies to take into account the effects of their undertaking on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Council's implementing regulations, "Protection of Historic Properties," are found in 36 Code of Federal Regulations (CFR) Part 800. The goal of the Section 106 review process is to offer a measure of protection to sites, which are determined eligible for listing on the National Register of Historic Places. The criteria for determining National Register eligibility are found in 36 CFR Part 60. Amendments to the Act (1986 and 1992) and subsequent revisions to the implementing regulations have, among other things, strengthened the provision for Native American consultation and participation in the Section 106 review process. While federal agencies must follow federal regulations, most projects by private developers and landowners do not require this level of compliance. Federal regulations only come into play in the private sector if a project requires a federal permit or if the project uses federal money.

National Historic Preservation Act (NHPA)

The NHPA establishes laws for historic resources to preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice. The Historic Sites Act of 1935 established national policy to preserve historic sites, buildings, and objects of national, state and local significance.

National Register of Historic Places

The National Register of Historic Places is maintained by the National Park Service and the State Historic Preservation Offices. Structures and sites are eligible for listing on the National Register when they are a minimum of 50 years-old.

State Regulations

Historical resources are recognized as part of the environment under CEQA statutes and guidelines (Public Resources Code sections 21001(b), 21083.2 and 21084.1; and section 15064.5 of the CEQA Guidelines). CEQA requires lead agencies to carefully consider the potential effects of a project on historical resources. Properties of local significance, including those identified in a local

historical resource inventory, are presumed to be significant for the purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC sections 5024.1, 14 CCR section 4850).

Section 15064.5 of the CEQA Guidelines specifies criteria for evaluating the importance of cultural resources. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource (Public Resources Code section 5020.1). A resource may be considered to be "historically significant" if the resource meets the criteria for listing on the California Register, including the following:

- The resource is associated with events that have made a contribution to the broad patterns of California history;
- The resource is associated with the lives of important persons from our past;
- The resource embodies the distinctive characteristics of a type, period, region or method construction, or represents the work of an important individual or possesses high artistic values; or
- The resource has yielded, or may be likely to yield, important information in prehistory or history.

Integrity is the authenticity of the historical resource's physical identity as evidenced by the survival of characteristics that existed during the resource's period of significance. The property must meet at least one of the criteria as described above and retain enough of its historic character or appearance to be recognizable as an historical resource and also to convey the reasons for its significance. Integrity is evaluated with regard to the aspects of location, design, setting, materials, workmanship, feeling, and association.

CEQA also applies to effects on archaeological sites. When a project will impact an archaeological site, the lead agency shall determine if the site is an historical resource as defined above. Advice on procedures to identify such resources, evaluate their importance, and estimate potential effects is given in several agency publications, such as the series produced by the Governor's Office of Planning and Research (OPR). The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including, but not limited to, museums, historical commissions, associates and societies, be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of the antiquity and provides for the sensitive treatment and disposition of those remains.

State Office of Historic Preservation

The State Office of Historic Preservation implements preservation laws regarding historic resources, and is responsible for the California Historic Resources Inventory (CHRI), which uses the National Criteria for listing resources significant at the national, State, and local level.

Native American Consultation (SB 18)

SB-18 Tribal Consultation; Government Code section 65352.3 (Senate Bill [SB] 18) requires local governments to consult with California Native American tribes identified by the California Native American Heritage Commission prior to adoption or amendment of a general plan or specific plan. The purpose of this consultation is to preserve or mitigate impacts to cultural places. SB 18 does not set a time limit on a local government's consultation, which may extend up and until the time of approval of the specific plan.

Local Regulations

City of Oakley General Plan

Few archaeological or paleontological finds exist in the City of Oakley. However, given the rich history of the General Plan Area and region, the City will continue to require site evaluation prior to development of undeveloped areas, as well as require procedures if artifacts are unearthed during construction.

The following applicable goals and policies are from the Oakley 2020 General Plan Open Space and Conservation Element:

Cultural Resources

Goal 6.4 Encourage preservation of cultural resources within the Plan Area.

Policy 6.4.1 Preserve areas that have identifiable and important archaeological or paleontological significance.

Program 6.4.A Assess development proposals for potential impacts to significant archaeological resources pursuant to Section 15064.5 of the CEQA Guidelines. Require a study conducted by a professional archaeologist for projects located near creeks or identified

archaeological sites to determine if significant archaeological resources are potentially present and if the project will significantly impact the resources. If significant impacts are identified, either require the project to be modified to avoid the impacts, or require measures to mitigate the impacts. Mitigation may involve archaeological investigation or recovery.

Historical Resources

While some historic structures and land uses within the community date back to the late 1800s, most of the City's historic resources date from the period of Oakley's growth and development, roughly from 1901 to 1955. While officially designated historic structures do not exist in Oakley, numerous buildings, primarily in the old town area, may be eligible for such designation or listing. The City intends to evaluate such resources and establish preservation policies and practices for qualified historic resources.

Goal 6.5 Encourage preservation and enhancement of selected historic structures and features within the community.

Policy 6.5.1 Promote the compatibility of new development located adjacent to existing structures of historic significance with the architecture and site development of the historic structure.

Policy 6.5.2 Respect the character of the building and its setting during the remodeling and renovation of facades of historic buildings.

Policy 6.5.3 Encourage the use of the State Historic Building Code for historic buildings and other structures that contribute to the City's historic character. Use flexibility when applying zoning regulations to historic sites and buildings.

Policy 6.5.4 Recognize the value of Oakley's historic resources as an economic development tool.

Policy 6.5.5 Ensure that the integrity of historic structures and the parcels on which they are located are preserved through the implementation of applicable design, building, and fire codes.

Policy 6.5.6 Work with property owners to preserve historic features within the community.

Program 6.5.A Encourage owners of eligible historic properties to apply for State and Federal registration of these sites and to participate in tax incentive programs for historic restoration.

Program 6.5.B Identify funding mechanisms, including funding from the City to the extent possible, to support programs to preserve, restore, and enhance unique historic sites.

Program 6.5.C Assess development proposals for potential impacts to significant historic resources pursuant to Section 15064.5 of the CEQA Guidelines. For structures that potentially have historic significance, require a study conducted by a professional archaeologist or historian to determine the actual significance of the structure and potential impacts of the proposed development. Require modification of projects to avoid significant impacts, or require mitigation measures. Protect historical buildings and sites to the extent possible, including modifications to Uniform Code requirements for historic structures.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, an impact to the cultural resources on the proposed Project site would be considered significant if the proposed Project would:

- Cause a substantial adverse change in the significance of an historical resource pursuant to CEQA § 15064.5 which states: Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852) including the following:

    - Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    - Is associated with the lives of persons important in our past;
    - Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
    - Has yielded, or may be likely to yield, information important in prehistory or history.

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outside of formal cemeteries.

Impacts and Mitigation Measures

Basis for Impacts

In accordance with CEQA regulations, if the area has not been previously surveyed, or if surveyed and/or documented inadequately, a qualified archaeologist must then conduct a survey of all Project components as a means of identifying and assessing the potential impact of the Project on known or predicted cultural resources. Literature on the history, prehistory, and ethnography of the area was also consulted as an aid in developing the archaeological potential of the area, and to prepare a setting section for use in evaluating the significance of known or predicted resources.

CEQA contains provisions relative to preservation of historic and prehistoric cultural sites. Section 15126.4 of CEQA directs public agencies to "avoid damaging effects" on an archeological resource whenever feasible. If avoidance

is not feasible, the importance of the site shall be evaluated to determine impact and develop mitigation measures.

The Oakley General Plan EIR on page 3-149 states, "While there are no officially designated historic structures in Oakley, there are numerous buildings, primarily in the old town area, eligible for such designation or listing […] Oakley's historic resources are generally in need of official recognition." The proposed Project site does not contain any evidence of past habitation or known cultural resources. In addition, historic structures do not exist on the proposed Project site.

Results of the Records and Literature Search

The staff at the California Historical Resources Information System, Northwest Information Center (NIC) at Sonoma State University conducted a record search of the Project vicinity on September 30, 2003 (File No. 03-209). The record search included a review of all cultural resource and excavation reports and recorded archaeological sites within a ¼-mile radius of the Project area. The study included a review of archaeological, ethnographic, historical, and environmental literature as well as records and maps on file at the California Archaeological Inventory. Historic resources are not shown on the 1910 USGS, Jersey Topographic Quadrangle historic map for the Project area, and known cultural resources do not exist within or directly adjacent to the Project area.

Thirteen surveys have been conducted within ¼-mile of the Project area (Baker 1990, 1999; Bramlette et al. 1991, Busby 1976; Chavez 1982; Dougherty 1991; Holman 1999; Losee 2001; Moratto et al. 1995; Price 1992; Scott 1999, Werner 1986; West and Welch 1996). As a result of the surveys, one prehistoric site was identified within one quarter mile of, but outside the Project area (CA-CCO-135). No other historic or prehistoric cultural resources were located. CA-CCO-135 was recorded in 1945 by J.J Farrar and W. Wallace. The original location of the site, nearly ¼ mile north of the Project area, may have been misplotted, and the site record notes that CA-CCO-135 is probably located on the Bethel Island USGS Quadrangle map. The site reportedly consisted of a prehistoric archaeological deposit with pestle, mortar rim fragment, an antler flaker, a square-cut olivella shell bead, and an obsidian point fragment. The site record indicates that CA-CCO-135 was destroyed by grading.

Results of Native American Consultation

On September 29, 2003, Leigh Martin of William Self Associates, Inc. (WSA) contacted the Native American Heritage Commission (NAHC) in writing to request information on known Native American traditional or cultural properties within the Project area, and to request a listing of individuals or groups with cultural affiliation to the Project area. Debbie Pilas-Treadway from the Native American Heritage Commission responded to the request and indicated, "…a search of the sacred lands file has failed to indicate the presence of Native

American cultural resources in the immediate Project area." (See Appendix A for letter dated October 10, 2003, and list of Native American Contacts.)

Since the adoption of SB 18 in 2004 post-dates the City's first discussions with the Native American Heritage Commission, the City re-notified the NAHC regarding the Project pursuant to SB 18 and is awaiting information as to any Native American tribes the City should contact regarding the need for any consultation.

Site Evaluation

A pedestrian survey of the Project site was conducted on October 1-2, 2003. A follow-up survey was conducted on October 9, 2003. The area was evaluated for the presence of historic or prehistoric site indicators. The objective of the cultural resource evaluation within the Project site was to locate, record, and evaluate the significance of all cultural resources within the proposed Project site. Visible ground surface was examined for the presence of historic or prehistoric site indicators, such as charcoal, obsidian or chert flakes, grinding bowls, shell fragments, bone, and pockets of dark, friable soils (for prehistoric sites), and glass, metal, ceramics, brick, wood and similar debris (for historic sites).

The entire Project area was surveyed. Ground visibility was excellent due to recent disking of the level agricultural field. Soil throughout the property is described as loosely consolidated yellow silt with few rocks. The majority of the Project area is flat and open and was covered in grape rows at the time of the survey. The survey resulted in the discovery of a light scatter of prehistoric and historic debris strewn across the majority of the western half of the property. Agricultural disking of the grape vineyard has clearly disrupted the original location and association of the artifacts.

Three prehistoric artifacts were found while searching for the boundaries of the historic trash concentration described above. The artifacts, which include two cores and a flake tool, were found widely dispersed and their original association is unclear. The three prehistoric artifacts are further detailed in Appendix F. In addition, State of California Department of Parks and Recreation (DPR) forms have been prepared for the site.

The site survey located the scattered remains of a historic trash scatter in a centralized area on the proposed Project site (Site 1). Site 1 contains both historic and prehistoric artifacts. Due to historic and recent agricultural soil disturbance the original association or location of the artifacts is unclear. The historic artifacts do not appear to be associated with the location of any historic structure or feature within the Project area. Based on a paucity of diagnostic features, the historic artifacts can only be broadly dated from more recent to the early 20th Century in date. Similarly, the prehistoric artifacts are few in number and were found widely dispersed across the ground surface. The prehistoric

artifacts are not spatially or temporally diagnostic. Site 1 does not appear to be eligible for the California Register of the criteria listed above at this time. Significant historic and prehistoric artifacts or features associated with the surface finds from Site 1 may still exist below the ground surface in the Project area. Destruction of potentially significant cultural resources without mitigation would be a significant impact under CEQA.

Analysis of Project Impacts

Cultural Resources

Impacts to cultural resources may result either directly or indirectly during the pre-construction, construction, and operational phases of the Project. Direct impacts are those, which may result from the immediate disturbance of resources, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or alteration of the setting of a resource. Indirect impacts are those that may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resources due to improved visibility or access.

Exposure of cultural resources during preconstruction site preparation or during construction excavation can also have a beneficial effect by making the data accessible for research. If these resources and their temporal and spatial context receive proper protection and analysis, they can add to the understanding of human adaptation to the environment and subsequent uses of the land and its resources. Analysis of cultural resources also can provide a very important key to changes in population and human movement within and throughout a geographic region.

The potential for the Project to impact sensitive cultural resources is directly related to the likelihood that such resources are present and whether they are actually encountered during Project development and construction activities. During the current effort to locate and identify historic or prehistoric cultural resources, one prehistoric site (CA-CCO-130) was documented within ¼ mile of the Project area (though this resource could have been mapped erroneously). The archaeological survey identified a scatter of historic and prehistoric artifacts within the River Oaks Crossing Specific Plan Project area.

Historic Resources

Because the proposed Project does not contain any evidence of past habitation or historic structures, the Project would not result in a significant impact to historic resources.

Impact CR-1 – Disruption of Known Historic and Prehistoric Artifacts

Because prehistoric cultural resources (as evidenced by site CA-CCO-130) have been recorded within ¼ mile of the Project, and historic and prehistoric artifacts were found within the Project site, a strong possibility exists that other potentially significant artifacts may be encountered during Project-related site clearance and excavation. The historic refuse scatter identified in the pedestrian survey appears to lack integrity and does not appear to be eligible for listing in the California or National Register of Historic Places. However, given the proposed Project's close proximity to Site CA-CCO-130 the possibility of encountering potentially significant buried historic deposits associated with the surface scatter would be a ***potentially significant*** impact. The City of Oakley 2020 General Plan EIR found that the implementation of the goals, policies and programs set forth in the City of Oakley General Plan would reduce potential impacts to cultural resources to a less-than-significant level. Based upon this conclusion, the analysis associated with this DEIR has determined that the impacts associated with the proposed Project would be reduced to a ***less-than-significant*** level through the proposed Project's conformity to the City of Oakley General Plan goals and policies through the implementation of the following mitigation measures, which are tiered from the City of Oakley 2020 General Plan.

Mitigation Measure(s):

CR-1(a) *All construction personnel shall be trained regarding the recognition of possible buried cultural remains, including prehistoric and historic resources during construction, prior to the initiation of construction or ground-disturbing activities. The Project sponsor shall complete training for all construction personnel. Training shall inform all construction personnel of the procedures to be followed upon the discovery of archaeological materials, including Native American burials.*

CR-1(b) *Any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend training so they are aware of the potential for inadvertently exposing buried archaeological deposits.*

CR-1(c) *The Project sponsor shall provide a background briefing for supervisory construction personnel describing the potential for exposing cultural resources and anticipated procedures to treat unexpected discoveries.*

CR-1(d) *Should unanticipated finds be uncovered during construction, work in the immediate vicinity must cease until an archaeologist is informed and an assessment of the historic or prehistoric resources is conducted.*

Impact CR-2 – Unearthing of previously unknown archaeological and paleontological resources, including human remains, as a result of Project grading

Development associated with the proposed Project, such as road improvements, utility corridors, and excavation associated with commercial development could result in the destruction or damage of unknown archaeological, or paleontological resources. The Archaeological Resource Assessment of the Project area stated that, based on a review of pertinent records, maps and other documents, and a field inventory, the proposed Project would not be expected to encounter any known archeological resources.

Archeologists have found few prehistoric sites in the Oakley area. One substantial shell mound was discovered early in the twentieth century near what is now the east edge of town. The Northwest Information Center of the California Historical Resources Information System now keeps track of archaeological investigations undertaken in Oakley. Around three-dozen such Projects have been completed in the past 25 years, yielding only four prehistoric sites in the City. However, the Information Center believes there is a high possibility that other prehistoric sites remain within the City.

Knowledge about the Oakley area prior to European settlement is limited and evidence of early native peoples who occupied the area is scarce; any artifact or information is therefore valuable. The intensity of prehistoric and historic human activities in this region increases the potential presence of a substantial number of as yet undiscovered important heritage resources within the Project area.

The Oakley General Plan indicates that given the rich history of the General Plan area and region, the City will continue to require site evaluation prior to development of undeveloped areas, as well as require procedures if artifacts are unearthed during construction. Isolated artifacts can occur in a wide variety of environments. Many other areas of California, for which there is a significant body of archaeological information, including zones adjacent to creeks, rivers, and springs, are consistently considered to be of high archaeological sensitivity. Prehistoric encampments may occur on high ground along drainages, though subsequent flooding and construction of oil wells may have either destroyed or buried these deposits.

Although studies suggest that the Project area does not contain a large number of prehistoric sites or artifacts, archaeological sensitivity within the Project area cannot be ruled out. In addition, Oakley General Plan Policy 6.4.1 requires the preservation of areas that have been identified as having important archaeological or paleontological significance. Therefore, because potential exists for archaeological resources to occur virtually anywhere in Oakley, even in areas thought to be of relatively low sensitivity, a ***potentially significant*** impact

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

Mitigation Measure(s):

CR-2(a) *In the event that Native American human remains or funerary objects are discovered, the provisions of the California Health and Safety Code should be followed. Section 7050.5(b) of the California Health and Safety Code should be implemented in the event that human remains or possible human remains are located.*

The County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the Native American Heritage Commission within twenty-four hours. The Commission has various powers and duties to provide for the ultimate disposition of any Native American remains, as does the assigned Most Likely Descendant. Sections 5097.98 and 5097.99 of the Public Resources Code also call for "protection to Native American human burials and skeletal remains from vandalism and inadvertent destruction." A combination of preconstruction worker training and intermittent construction monitoring by a qualified archaeologist will serve to achieve compliance with this requirement for protection of human remains. Worker training typically instructs workers as to the potential for discovery of cultural or human remains, and both the need for proper and timely reporting of such finds, and the consequences of failure thereof. Once the find has been identified, the archaeologist will make the necessary plans for treatment of the find(s) and for the evaluation and mitigation of impacts if the finds are found to be significant according to CEQA.

CR-2(b) *Archaeological monitoring shall be conducted by a qualified archaeologist familiar with the types of historic and prehistoric resources that could be encountered on site. Monitoring shall occur during ground disturbing construction within the Project area, or at the discretion of the consulting principal archaeologist. The qualifications of the principal archaeologist shall be approved by the City of Oakley.*

Cumulative Impacts

Buildout of approved and planned uses such as the River Oaks Crossing Specific Plan Project and other projects within the City have the potential to uncover previously unknown resource sites. Each site is a unique contributor to the overall scientific understanding of a region's pre-history. Evaluation of cultural finds and resources within their original context is a critical component of their

value. Disturbance, movement, and destruction of such resources would remove or preclude the analysis of the resource within the resource's origin and therefore adversely affect the understanding of the development of human cultural history. Increased population and intensified land use patterns associated with cumulative growth could also increase the potential for vandalism and/or inadvertent destruction of such resources. Consequently, the Oakley 2020 General Plan EIR found that cumulative development would create a significant impact to cultural resources. However, General Plan EIR found that the adoption of the Policies and Programs involved with the General Plan would reduce cumulative impacts related to cultural resources to a less-than-significant level (See page 5-13 of the 2020 General Plan EIR). The proposed Project would implement the goals, policies and programs regarding cultural resources, as outlined in the City of Oakley General Plan. Therefore, cumulative impacts from implementation of the proposed Project would be considered to be ***less-than-significant*** after the implementation of the plans, policies and programs outlined in the City of Oakley General Plan.

3.6 AIR QUALITY (AQ)

The Specific Plan Project's effects on air quality are analyzed in the detailed report contained in Appendix G. The chapter discusses existing air quality, construction-related impacts, direct and indirect emissions associated with the Project, the impacts of these emissions on both the local and regional scale, and mitigation measures to reduce or eliminate any identified significant impacts.

Environmental Setting

Existing Conditions

Oakley is located on the south side of the San Joaquin River delta, east of the Carquinez Straits. The location between the greater Bay Area and the Central Valley has great influence on the climate and air quality of the area. Oakley is located at the eastern boundary of the nine-county San Francisco Bay Area Air Basin. Oakley is a few miles west of San Joaquin County, which is part of the neighboring eight-county San Joaquin Valley Air Basin.

Oakley has a relatively low potential for air pollution given the persistent and strong winds typical of the area. Wind records from the closest wind-measuring sites show a strong predominance of westerly winds. Average wind speed is relatively high and the frequency of calm winds is quite low, as documented in Appendix G. These winds dilute pollutants and transport them away from the area, so that emissions released in the Project area have more influence on air quality in the Sacramento and San Joaquin valleys than they do locally. However, several major stationary sources exist in upwind cities that can influence local air quality and the Project's location downwind of the greater Bay Area also means that pollutants from other areas are transported to the area.

Ambient Air Quality Standards

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards for each contaminant represent safe levels that avoid specific adverse health effects. The ambient air quality standards cover what are called "criteria" pollutants because the effects of each pollutant are described in the criteria documents. Table 3.6-1 identifies the major pollutants, characteristics, health effects, and typical sources. The federal and State ambient air quality standards are summarized in Table 3.6-2.

The federal and state ambient standards were developed independently with differing purposes and methods. As a result, the federal and state standards differ in some cases. In general, the State of California standards are more stringent, particularly for ozone and particulate matter (PM_{10} and $PM_{2.5}$).

Table 3.6-1
Major Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive photochemical pollutant created by the action of sunshine on ozone precursors (primarily reactive hydrocarbons and oxides of nitrogen). Often called photochemical smog.	• Eye irritation. • Respiratory function impairment.	Combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	An odorless, colorless gas that is highly toxic. Formed by the incomplete combustion of fuels.	• Impairment of oxygen transport in the bloodstream. • Aggravation of cardiovascular disease. • Fatigue, headache, confusion, dizziness. • Can be fatal in the case of very high concentrations.	Automobile exhaust, combustion of fuels, and combustion of wood in woodstoves and fireplaces.
Nitrogen Monoxide	Reddish-brown gas that discolors the air, formed during combustion.	• Increased risk of acute and chronic respiratory disease.	Automobile and diesel truck exhaust, industrial processes and fossil-fueled power plants.
Sulfur Dioxide	Sulfur dioxide is a colorless gas with a pungent, irritating odor.	• Aggravation of chronic obstruction lung disease. • Increased risk of acute and chronic respiratory disease.	Diesel vehicle exhaust, oil-powered power plants, industrial processes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Solid and liquid particles of dust, soot, aerosols and other matter that are small enough to remain suspended in the air for a long period of time.	• Aggravation of chronic disease and heart/lung disease symptoms.	Combustion, automobiles, field burning, factories, and unpaved roads. Also a result of photochemical processes.

Source: Don Ballanti, December 2005.

Table 3.6-2
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary	Secondary
Ozone	1 Hour	0.09 ppm	-	Same as primary
Ozone	8 Hour	0.07 ppm	0.08 ppm	Same as primary
Carbon Monoxide	8 Hour	9 ppm	9 ppm	None
	1 Hour	20 ppm	35 ppm	
Nitrogen Dioxide	Annual Average	-	0.053 ppm	Same as primary
	1 Hour	0.25 ppm	-	
Sulfur Dioxide	Annual Mean	-	0.030 ppm	-
	24 Hour	0.04 ppm	0.14 ppm	-
	3 Hour			0.50 ppm
	1 Hour	0.25 ppm		-
Respirable Particulate Matter (PM_{10})	Annual Mean	20 ug/m^3	50 ug/m^3	Same as primary
	24 Hour	50 ug/m^3	150 ug/m^3	
Fine Particulate Matter ($PM_{2.5}$)	Annual Mean	12 ug/m^3	15 ug/m^3	Same as primary
	24 Hour	-	65 ug/m^3	
Sulfates	24 Hour	25 ug/m^3	-	-
Lead	30 Day Average	1.5 ug/m^3	-	-
	Calendar Quarter	-	1.5 ug/m^3	Same as primary
Hydrogen Sulfide	1 Hour	0.03 ppm	N/A	N/A
Vinyl Chloride	24 Hour	0.01 ppm	N/A	N/A

ppm = Parts per Million
ug/m^3 = Micrograms per Cubic Meter

Source: California Air Resources Board, Ambient Air Quality Standards, February 22, 2007.

The State of California regularly reviews scientific literature regarding the health effects and exposure to particulate matter and other pollutants. On May 3, 2002, the CARB staff recommended lowering the level of the annual standard for PM_{10} and establishing a new annual standard for $PM_{2.5}$ (particulate matter 2.5 micrometers in diameter and smaller). The new standards became effective on July 5, 2003. In early 2006, a new 8-hour standard for ozone (0.07 ppm) went into effect.

Ozone

Ozone is the most prevalent of a class of photochemical oxidants formed in the urban atmosphere. The creation of ozone is a result of a complex chemical

reaction between reactive organic gases (ROG) and nitrogen oxide (NO_X) emissions in the presence of sunshine. Unlike other pollutants, ozone is not released directly into the atmosphere from any sources. Factories, automobiles, and evaporation of solvents and fuels are the major sources of ozone precursors. The health effects of ozone are difficulty breathing, lung tissue damage, and eye irritation.

Particulate Matter

Suspended particulate matter (airborne dust) consists of solid and liquid particles small enough to remain suspended in the air for long periods. "Respirable" PM consists of particles less than 10 microns in diameter, and is defined as "suspended particulate matter" or PM_{10}. Particles between 2.5 and 10 microns in diameter arise primarily from natural processes, such as wind-blown dust or soil. Fine particles are less than 2.5 microns in diameter ($PM_{2.5}$). $PM_{2.5}$, by definition, is included in PM_{10}. Fine particles are produced mostly from combustion or burning activities. Fuel burned in cars and trucks, power plants, factories, fireplaces, and wood stoves produces fine particles.

Particulate matter is a complex mixture that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These tiny particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. Particulate matter is divided into two classes, primary and secondary. Primary particles are released directly into the atmosphere from sources of generation. Secondary particles are formed in the atmosphere as a result of reactions that involve gases.

Particles greater than 10 microns in diameter can cause irritation in the nose, throat, and bronchial tubes. Natural mechanisms remove many of these particles, but smaller particles are able to pass through the body's natural defenses and the mucous membranes of the upper respiratory tract and enter into the lungs. The particles can damage the alveoli, tiny air sacs responsible for gas exchange in the lungs. The particles may also carry carcinogens and other toxic compounds, which adhere to the particle surfaces and can enter the lungs.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, poisonous gas produced by incomplete burning of carbon-based fuels such as gasoline, oil, and wood. When CO enters the body, the CO combines with chemicals in the body, which prevents blood from carrying oxygen to cells, tissues, and organs. Symptoms of exposure to CO can include problems with vision, reduced alertness, and general reduction in mental and physical functions. Exposure to CO can result in chest pain, headaches, and reduced mental alertness.

Nitrogen Oxide

Nitrogen oxides (NO_X) are reddish-brown gasses that discolor the air and are produced from burning fuels, including gasoline and coal. Nitrogen oxides react with ROG (found in paints and solvents) to form smog, which can harm health, damage the environment, and cause poor visibility. Additionally, NO_X emissions are a major component of acid rain. Health effects related to NO_X include lung irritation and lung damage and can cause increased risk of acute and chronic respiratory disease.

Sulfates

Sulfates (SO_X) are colorless gases and constitute a major element of pollution in the atmosphere. SO_X is commonly produced by fossil fuel combustion. In the atmosphere, SO_X is usually oxidized by ozone and hydrogen peroxide to form sulfur dioxide and trioxide (a pollutant). If SO_X is present during condensation, acid rain may occur. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. Children, the elderly, those with chronic lung disease, and asthmatics are especially susceptible to these effects.

Toxic Air Contaminants

In addition to the criteria pollutants (Table 3.6-1), Toxic Air Contaminants (TACs) are also a category of environmental concern. Toxic Air Contaminants are present in many types of emissions with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different TACs. In terms of health risks, the most volatile contaminants are diesel particulate, benzene, formaldehyde, 1, 3-butadiene and acetaldehyde.

Public exposure to TACs can result from emissions from normal operations as well as accidental releases. Heath effects of TACs include cancer, birth defects, neurological damage, and death.

Attainment Status and Regional Air Quality Plans

The Federal Clean Air Act of 1990 and the California Clean Air Act of 1988 require that the CARB, based on air quality monitoring data, designate portions of the State where the federal or State ambient air quality standards are not met as “nonattainment areas.” Because of the differences between the national and State standards, the designation of nonattainment areas is different under the federal and State legislation.

The Bay Area is currently designated as a nonattainment area for 1-hour ozone standard. However, in April 2004, U.S. EPA made a final finding that the Bay Area has attained the national 1-hour ozone standard. The finding of attainment does not mean the Bay Area has been reclassified as an attainment area for the 1-hour standard. The region must submit a re-designation request to EPA in order to be reclassified as an attainment area.

The U.S. EPA has classified the San Francisco Bay Area as a nonattainment area for the federal 8-hour ozone standard. The Bay Area is designated as unclassifiable/attainment for the federal $PM_{2.5}$ standards.

Under the California Clean Air Act, Contra Costa County is a nonattainment area for ozone and particulate matter (PM_{10} and $PM_{2.5}$). The County is either attainment or unclassified for other pollutants. The California Clean Air Act requires local air pollution control districts to prepare air quality attainment plans. These plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods or, provide for adoption of "all feasible measures on an expeditious schedule."

Local Air Quality Monitoring

The Federal Clean Air Act and the California Clean Air Act require all areas of California to be classified as attainment, non-attainment, or unclassified as to their status with regard to the national and/or State Ambient Air Quality Standards.

The Bay Area Air Quality Management District (BAAQMD) has for many years operated a multi-pollutant monitoring site in nearby Bethel Island. Table 3.6-3 shows historical occurrences of pollutant levels exceeding the state/federal ambient air quality standards for the three-year period 2004-2006. The number of days that each standard was exceeded is shown.

Table 3.6-3 shows that, with the exception of ozone, all federal ambient air quality standards are met in the Oakley area. Additionally, the State ambient standards of ozone and PM_{10} are regularly exceeded.

Table 3.6-3
Air Quality Data Summary for Bethel Island, 2004-2006

Pollutant	Standard	Days Standard Exceeded During:		
		2004	2005	2006
Ozone	1-Hour State	1	0	9
	1-Hour Federal	0	0	0
	8-Hour Federal	0	0	1
Carbon Monoxide	8-Hour State and Federal	0	0	0
	1-Hour State	0	0	0
Nitrogen Dioxide	1-Hour State	0	0	0
Sulfur Dioxide	1-Hour State	0	0	0
	24-Hour State	0	0	0
PM_{10}	24-Hour State	0	1	0
	24-Hour Federal	0	0	0

Source: Air Resources Board, Aerometric Data Analysis and Management (ADAM), 2006. (http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start).

Sensitive Receptors

The Bay Area Air Quality Management District defines sensitive receptors as facilities where sensitive receptor population groups (children, the elderly, the acutely ill and the chronically ill) are likely to be located. These land uses include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals and medical clinics. Sensitive land uses near the Project site include residences adjacent to the northwest corner of the site.

Regulatory Environment

Air quality is monitored through the efforts of various federal, State, and local government agencies. These agencies work jointly and individually to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for regulating and improving air quality within the Oakley area are discussed below.

Federal

U.S. Environmental Protection Agency (EPA)

The U.S. EPA is responsible for enforcement of National Ambient Air Quality Standards. The EPA has adopted policies requiring states to prepare State Implementation Plans (SIP) that demonstrate attainment and maintenance of the National Ambient Air Quality Standards. After a review of the SIP, the EPA will further classify non-attainment areas according to a District's projected date of attainment. Districts that Project attainment of standards in three to five years would be classified as near-term non-attainment, whereas Districts that cannot meet standards within five years would be classified as long-term non-

attainment. For an area to be classified as near-term non-attainment, the District would be required to demonstrate that pollutant reductions of three-percent-per-year are obtainable and that maintenance of standards could occur for ten years.

In 1997, the EPA adopted new national air quality standards for ground-level ozone and for fine particulate matter ($PM_{2.5}$). These standards determined that the existing 1-hour ozone standard of 0.12 parts-per-million (ppm) would be phased out and replaced by an 8-hour standard of 0.08 ppm. New national standards for fine particulate matter (diameter 2.5 microns or less) were established for 24-hour and annual averaging periods.

The established PM_{10} standards were retained, but the method and form for determining compliance with the standards were revised. Implementation of the new ozone and Particulate Matter standards was delayed by a lawsuit. On May 14, 1999 the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the Clean Air Act as applied in setting the new public health standards for ozone and particulate matter was unconstitutional and an improper delegation of legislative authority to the Environmental Protection Agency, clearing the way for implementation of the new standards. During the interim period, the California Clean Air Resources Board developed recommended designations for California air basins, proposing that Contra Costa County be designated as non-attainment for the new 8-hour ozone standard. Designations for $PM_{2.5}$ have not been made; however, a minimum three-year monitoring period is required.

State

California Air Resources Board (CARB)

The CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing its own air quality legislation called the California Clean Air Act (CCAA) adopted in 1988. The CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the U.S. EPA.

The CCAA requires that air quality plans be prepared for areas of the State that have not met State air quality standards for ozone, carbon monoxide, nitrogen dioxide, and sulfur dioxide. Areas that met standards by 1994 were classified as moderate, those that attained standards between 1994 and 1997 were classified as serious, and those that could not attain standards until after 1997 were classified as severe. In order to implement the transportation-related provisions of the CCAA, local air pollution control districts have been granted explicit authority to adopt and implement transportation controls.

Local

Bay Area Air Quality Management District (BAAQMD)

The Bay Area Air Quality Management District (BAAQMD) has permitting authority for stationary air pollutant sources in the region and operates a total of seven air monitoring sites within Contra Costa County. The BAAQMD has prepared *CEQA Guidelines* to assist in CEQA review. The BAAQMD maintains annual daily thresholds for ROG, NO_x and PM_{10}. Under these guidelines, any proposed Project that would have a significant air quality impact would also be considered to have a significant cumulative air quality impact.

City of Oakley General Plan

The following applicable goals and policies are from the Oakley 2020 General Plan Open Space and Conservation Element:

Air Quality

Goal 6.2 Maintain or improve air quality in the City of Oakley.

Policy 6.2.1 Support the principles of reducing air pollutants through land use, transportation, and energy use planning.

Policy 6.2.2 Encourage transportation modes that minimize contaminant emissions from motor vehicle use.

Policy 6.2.3 Interpret and implement the General Plan to be consistent with the regional Bay Area Air Quality Management Plan (AQMP), as periodically updated.

Policy 6.2.4 Ensure location and design of development projects so as to conserve air quality and minimize direct and indirect emissions of air contaminants.

Policy 6.2.5 Encourage air quality improvement through educational outreach programs, such as Spare the Air Day.

Thresholds of Significance

Based upon the existing BAAQMD standards, as well as the standards identified in the City of Oakley General Plan, the Project would have a significant effect on the environment if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation. The BAAQMD CEQA Guidelines provide the following definitions of a significant air quality impact:
    - A project contributing to carbon monoxide (CO) concentrations exceeding the State Ambient Air Quality Standard of nine parts per million (ppm) averaged over eight hours or 20 ppm for one hour would be considered to have a significant impact;
    - A project that generates criteria air pollutant emissions in excess of the BAAQMD annual or daily thresholds would be considered to have a significant air quality impact. The current thresholds are 15 tons/year or 80 pounds/day for Reactive Organic Gases (ROG), Nitrogen Oxides (NO_x) or PM_{10}. Any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact; or
    - Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact;

- Any project with the potential to expose sensitive receptors to substantial pollutant concentrations would be deemed to have a significant impact;
- Result in a cumulative considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Impacts and Mitigation Measures

Basis for Impacts

Project impacts were evaluated pursuant to the foregoing thresholds, and in relation to the effects analyzed in the Oakley 2020 General Plan EIR based on contributions from commercial development of the Project site. An air quality impact analysis was prepared based on background information from the

certified General Plan EIR and current Project data, based on a maximum aggregate building square footage of 770,000 gross square feet. The analysis, as presented in Appendix G, finds that the proposed Specific Plan Project would not introduce any new point sources of air pollution, but would present a range of short-term construction-related effects, which could be significant without the application of conventional mitigation.

Analysis of Project Impacts

Maximum development as identified under the Specific Plan (770,000 square feet) has been identified as likely to result in short-term construction-related impacts related to dust emissions and would contribute to significant and unavoidable impacts as identified by the City of Oakley 2020 General Plan EIR. The proposed Specific Plan would include commercial and business-related land uses and would not be expected to produce any objectionable odors. Because the proposed Project is consistent with the buildout anticipated in the City of Oakley General Plan, the Specific Plan would not be expected to conflict with any existing air quality management plans.

Impact AQ-1 - Construction Dust Emissions

Construction activities such as clearing, excavation and grading operations, construction vehicle traffic and wind blowing over exposed earth would generate fugitive particulate matter emissions that may temporarily affect local air quality.

Construction dust would affect local air quality during implementation of the Project. The dry, windy climate of the area during the summer months creates a high potential for dust generation if underlying soils are exposed to the atmosphere. The movement of earth on the site is a construction activity with a high potential for creating air pollutants. After grading of the site, dust may continue to affect local air quality during construction of the Project.

According to the *BAAQMD CEQA Guidelines*, emissions of ozone precursors (ROG and NO_x) and carbon monoxide related to construction equipment are already included in the emission inventory that is the basis for regional air quality plans, and thus are not expected to impede attainment or maintenance of ozone and carbon monoxide standards in the Bay Area. The effects of construction activities would be increased dustfall and locally elevated levels of PM_{10} downwind of construction activity. Construction dust has the potential for creating a nuisance at nearby properties.

The proposed River Oaks Crossing Specific Plan Project would result in a range of short-term construction-related effects, including the generation of dust and equipment exhaust emissions, which would be ***potentially significant***. However, the implementation of the following mitigation measure would reduce this impact to a ***less-than-significant*** level.

Mitigation Measure(s):

AQ-1(a) *Consistent with guidance from the BAAQMD, and prior to issuance of a grading permit, the applicant shall incorporate the following mitigation measures into the construction contract documents, which shall be submitted for the review and approval of the City Engineer:*

- *Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers or dust palliatives;*
- *Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard;*
- *Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;*
- *Sweep daily (preferably with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality;*
- *Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets;*
- *Apply non-toxic soil stabilizers to inactive construction areas;*
- *Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);*
- *Limit traffic speeds on unpaved roads to 15 mph;*
- *Install sandbags or other erosion control measures to prevent silt runoff to public roadways; and*
- *Replant vegetation in disturbed areas as quickly as possible.*

The following additional mitigation measure is recommended by the BAAQMD to reduce engine exhaust emissions, and shall be required as part of the Project.

AQ-1(b) *Consistent with guidance from the BAAQMD, and prior to issuance of a grading permit, the applicant shall incorporate the following mitigation measures into the construction contract documents,*

which shall be submitted for the review and approval of the City Engineer:

- *Use alternative fueled construction equipment (where available)*
- *Minimize idling time (5 minutes maximum);*
- *Use post-combustion controls to treat exhaust;*
- *Maintain properly tuned equipment;*
- *Use CARB-certified engines (i.e. three years old or less, and comply with CARB emission standards)*
- *Limit the hours of operation of heavy equipment and/or the amount of equipment in use, such that heavy equipment is only operating between the hours of 7 AM and 6 PM, Monday through Friday, and 8 AM to 5 PM on Saturday. (No use of heavy equipment on Sunday.)*

The above measures include all feasible measures for construction emissions identified by the Bay Area Air Quality Management District for large sites.

Impact AQ-2 - Construction TAC Emissions

During construction various diesel-powered vehicles and equipment would be in use on the site.

In 1998 the California Air Resources Board identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines. High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truckstop) were identified as having the highest associated risk.

Health risks from Toxic Air Contaminants are function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks. Additionally, construction related sources are mobile and transient in nature, and the bulk of the emission occurs within the Project site at a substantial distance from nearby receptors. Although build-out of the Specific Plan would occur over several years, it is anticipated that the entire site will be graded at the initiation of the construction process. Individual developments over time would only require minimal grading. Because of the short duration of construction, and because nearby sensitive receptors would not be down-wind of construction activity when the wind is from the prevailing west direction, health risks from construction emissions of diesel particulate would be a ***less-than-significant***

impact. In addition, implementation of Mitigation Measure AQ-1(b) will help further reduce the impacts of construction TAC emissions.

Impact AQ-3 - Operational Air Quality Impacts

Project traffic would add to carbon monoxide concentrations near streets and intersections providing access to the site. On the local scale, the Project would change traffic on the local street network, changing carbon monoxide levels along roadways used by Project traffic. Carbon monoxide is an odorless, colorless poisonous gas whose primary source in the Bay Area is automobiles. Concentrations of this gas are highest near intersections of major roads. Carbon monoxide concentrations under worst-case meteorological conditions have been predicted for the most heavily traveled nearby intersections. PM peak traffic volumes were applied to the screening form of the CALINE-4 dispersion model to predict maximum one-and eight-hour concentrations near these intersections under the worst-case assumption that Project traffic changes would occur in 2006. The model results were used to predict the maximum one- and eight-hour concentrations, corresponding to the one- and eight-hour averaging times specified in the state and federal ambient air quality standards for carbon monoxide.

Table 3.6-4 shows the results of the CALINE-4 analysis for the peak one-hour and eight-hour traffic periods in parts per million (PPM). The one-hour values are to be compared to the federal one-hour standard of 35 PPM and the state standard of 20 PPM. The eight-hour values in Table 3.6-4 are to be compared to the state and federal standard of nine PPM. Table 3.6-4 shows that Project traffic changes would increase concentrations by up to 1.3 PPM, but concentrations would remain below the most stringent state and federal standards.

The air quality analysis for the traffic emissions associated with the proposed Project was performed by the URBEMIS2002 program. The calculations formulated in the URBEMIS2002 program included area source emissions (such as HVAC units, lawn mowers and other small-scale uses) associated with the proposed Project. The total traffic emissions associated with the proposed Project are included in Table 3.6-4.

Concentrations in 2030 with cumulative traffic increases would be below current levels, despite increased traffic, due to the effect of declining emission rates for vehicles. Because Project traffic would not cause any new violations of the eight-hour standards for carbon monoxide, nor contribute substantially to an existing or projected violation, Project impacts on local carbon monoxide concentrations are considered to be ***less-than-significant***.

Table 3.6-4
Worst Case Carbon Monoxide Concentrations Near Selected Intersections, in Parts Per Million

Intersection	Existing (2006)		Existing + Project (2006)		Existing+Project+ Cumulative (2030)	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
Main/ Empire	6.8	4.9	7.2	5.2	3.3	2.4
Main/ Live Oak	6.7	4.8	8.2	5.9	3.4	2.4
Main/ Bridgehead	7.6	5.5	8.2	5.9	3.1	2.3
Main/ SR 160 SB Off	5.4	3.9	6.7	4.8	3.1	2.3
Main/ SR 160 NB On	7.9	5.6	8.4	6.1	3.5	2.5
Main/ Sandy	6.7	4.8	7.4	5.3	3.3	2.4
Most Stringent Standard	20.0	9.0	20.0	9.0	20.0	9.0

Source: Don Ballanti, November 2006.

Cumulative Impacts

Vehicle trips generated by the Project would result in air pollutant emissions affecting the entire San Francisco Bay Air Basin. Regional emissions for area sources and vehicle sources associated with Project vehicle use have been calculated using the URBEMIS2002 emission model, as recommended by the BAAQMD. The incremental daily emission increase associated with Project land, including vehicular and area source emissions (such as HVAC units, lawn mowers and other small-scale uses) are identified in Table 3.6-5 for reactive organic gases and oxides of nitrogen (two precursors of ozone) and PM_{10}. The BAAQMD has established threshold of significance for ozone precursors and PM_{10} of 80 pounds per day.

Additional trips to and from the Project would result in new air pollutant emissions within the air basin. Under the cumulative plus Project condition, the emissions from these new trips combine with the cumulative development of the City of Oakley would exceed the BAAQMD thresholds of significance.

These emissions would contribute to the significant and unavoidable cumulative impact on regional air quality documented in the Oakley 2020 General Plan EIR, for which a Statement of Overriding Consideration was adopted (see DEIR Appendix I). The proposed Project, however, would contribute to the cumulative regional air quality impact resulting in a ***significant and unavoidable*** impact. Mitigation Measure AQ-1 mitigates the proposed Project's construction-related

air quality impacts and would reduce the cumulative impacts; however, not to a less-than-significant level. The Air Quality Analysis for the proposed Project included a list of mitigation measures designed to reduce cumulative impacts, although not to a less-than-significant level. These Mitigation Measures include, but are not limited to, providing sidewalks and landscaping on site, connecting to a regional trail system, and providing bicycle parking and storage on site. The applicable Mitigation Measures are incorporated into the Specific Plan policies for implementation. Additional feasible mitigation measures are not available to reduce the Project's cumulative regional air quality impacts.

Table 3.6-5
Project Regional Emissions in Pounds Per Day

	Reactive Organic Gases	Nitrogen Oxides	PM_{10}
Area Sources	12.1	8.1	0.1
Vehicular Sources	244.4	235.8	186.4
Total	256.5	243.9	186.5
BAAQMD Significance Threshold	80.0	80.0	80.0

Source: Don Ballanti, November 2006.

3.7 ENERGY CONSERVATION

Energy is consumed during the construction, operation and maintenance of projects, both directly and indirectly. This section describes the existing energy resources, derived from petroleum products, electricity and natural gas available within the Project area and analyzes the impacts related to these resources that would result from the implementation of the proposed Project.

Environmental Setting

This section addresses the City of Oakley's energy sources, as well as the local efforts to conserve energy and use energy more efficiently. Although these terms are used interchangeably, it is useful to differentiate between energy efficiency and energy conservation. Energy efficiency means using less energy/electricity to perform the same function. Conservation means "doing without" in order to save energy rather than using less energy to do the same thing. For example, turning off lights, turning down the air conditioner, and making fewer vehicle trips are all conservation measures. Installing lighting that uses less electricity, installing additional insulation, and switching to a vehicle with better gas mileage are energy efficiency measures.

Utility Energy

Pacific Gas & Electric (PG&E) currently provides gas and electric services to the City of Oakley homes and businesses and is regulated by the California Public Utilities Commission (CPUC). PG&E's service area extends from Eureka to Bakersfield (north to south) and from the Sierra Nevada to the Pacific Ocean (east to west).

PG&E obtains its energy supplies from power plants and natural gas fields in northern California and from energy purchased outside its service area and delivered through high voltage transmission lines. PG&E purchases both gas and electrical power from a variety of sources, including utility companies in other western states and Mexico (CEC, 2003). To promote the safe and reliable maintenance and operation of utility facilities, the CPUC has mandated specific clearance requirements between utility facilities and surrounding objects or construction activities.

Energy Consumption

Based upon data and reports compiled by the California Energy Commission and the Energy Information Administration of the U.S. Department of Energy, in 2003, California used over 276,000 gigawatt hours of electricity. This electricity was produced from power plants fueled by natural gas (37 percent), coal (21 percent), hydro (16 percent), nuclear (15 percent), and renewables (11 percent).

Approximately 78 percent of the electricity was generated within California, with the balance imported from other states, Canada, and Mexico.

Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. That said, the average annual usage of electricity is roughly 13 kWhr/square foot for all commercial buildings. Electricity supply in California involves a complex grid of power plants and transmission lines located in the Western United States, Canada, and Mexico. The issue is complicated by market forces that have become prominent since 1998, which is when a new regulatory environment commonly referred to as "deregulation" took effect in California. Supply is further complicated by the fact that the peak demand for electricity is significantly higher than the off-peak demand. For example, in August 2004, peak electric demand - due in large part to hot weather - reached a record high of 44,497 megawatts, which is almost double the lowest demand period.

In 2000-2001, electric demand exceeded supply on various occasions, which required utilities to institute systematic rotating outages to maintain the stability of the grid and to prevent widespread blackouts. Since that time, additional generating capacity has come on-line and upgrades to various transmission lines are occurring. According to the California Energy Commission's 2003 Integrated Energy Policy Report, the current outlook is that California will have an adequate supply of electricity through 2009.

Natural Gas

In 2001, California used almost 2.4 trillion cubic feet of natural gas. The natural gas was used to produce electricity (41 percent), in industrial uses (28 percent), in commercial uses (10 percent), and in residential uses (21 percent). Approximately 16 percent of the natural gas was produced within California, with the balance imported from other states and Canada.

Natural gas usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all gas-consuming devices within a building. That said, the average annual usage of natural gas is roughly 45,000 cubic feet/residence. The average annual usage of natural gas is roughly 37 cubic feet/square foot for commercial buildings.

California Energy Supply

California’s major sources of energy are petroleum products (i.e., gasoline, diesel and oil), electricity, and natural gas. The California Energy Commission (CEC) indicates that California petroleum resources in 2005 came from in-state (37.22 percent), foreign sources (41.79 percent), and Alaska (20.99 percent). In 2005,

natural gas resources in California came from the Southwest (38.0 percent), Canada (23.0 percent), in-state (15.0 percent), and the Rocky Mountains (24.0 percent). Electricity production by resource type in California in 2006 included natural gas at 41.5 percent, coal at 15.7 percent, hydroelectric at 19.0 percent, nuclear at 12.9 percent, and renewable at 10.9 percent. Renewable consisted of geothermal (4.7 percent), biomass (2.1 percent), small hydro (2.1 percent), and solar and wind (2.0 percent). Imports from the northwest and southwest added 6.72 percent and 15.25 percent, respectively[1].

California Energy Use Patterns

Detailed information about energy use in the Project area is limited; therefore, state-level and county trends are relied upon to characterize energy consumption at the local level.

Currently, the top three fossil fuels, coal, oil and natural gas, provide more than 85 percent, of all the energy consumed in the United States, nearly two-thirds of our electricity, and virtually all of our transportation fuels. Petroleum products themselves supply more than 40 percent of our total energy demands and more than 99 percent of the fuel we use in our cars and trucks. As for electricity, more than half of the amount generated in the United States derives from coal. It is estimated that for the foreseeable future, coal will continue to be the dominant fuel used for electric power production. The next biggest fuel source of electricity is nuclear power, which supplies about 20 percent of the electricity produced in the United States. On the other hand, natural gas is the fastest growing fuel. More than 90 percent of the power plants to be built in the next 20 years will likely be fueled by natural gas; virtually all of which will be domestically produced[2].

In California, total statewide energy consumption was 8364.6 Trillion BTU[3] for 2004. Petroleum use accounted for approximately 45 percent of all energy consumption, of which approximately 51 percent was for motor vehicle fuel. Motor gasoline use accounted for about 23 percent of total use, or 1,929.9 Trillion BTU. The electric power sector accounted for about 23 percent of all energy consumption, while natural gas accounted for about 30 percent of all energy consumption. By end-use sectors, transportation was by far the biggest energy consumer, which accounted for approximately 38 percent of all energy consumption. The other three sectors, industrial, commercial and residential, were about equal consumers accounting for approximately 25 percent, 19 percent and 19 percent of all energy consumption, respectively[4]. Tables 3.7-1 and 3.7-2 illustrate California electricity deliveries and State natural gas demand.

Table 3.7-1
California Utility Electricity Consumption by County for 2005

	Residential		Nonresidential		Total	
County	**Number of Accounts**	**kWh (million)**	**Number of Accounts**	**kWh (million)**	**Number of Accounts**	**kWh (million)**
Contra Costa	382,264	2,646	36,326	5,529	418,590	8,175

Kilowatt-hour (kWh): The most commonly used unit of measure telling the amount of electricity consumed over time, which is one kilowatt (1,000 watts) of electricity supplied for one hour.

Source: California Energy Commission's website, http://www.energy.ca.gov/electricity/electricity_by_county_2005.html , accessed on August 17, 2007.

Table 3.7-2
California Natural Gas Demand 2005, in MMcfd (Million Cubic Feet Per Day)

	PG&E	SoCal Gas	SDG&E	Utility Sum	Non-Utility	State Total
Residential	532	659	82	1,286	N/A	1,286
Commercial	229	233	48	567	N/A	567
Industrial	430	404	10	844	630	1,474
Electric Gen	818	729	163	1,711	683	2,394
Storage	Not available					
Losses	Not available					
State Total	2,009	2,095	4,419	1,313	1,313	5,732

Notes: Non-utility EG based on Kern Rivers Ferc Form 567 (Assumes little or no EG delivered by Mohave)
Utility demand based on CEC 1308 schedules 1 and 2 filed by the natural gas utilities.

Source: California Energy Commission Staff, accessed July 20, 2007.

Regulatory Setting

This section summarizes the federal, State and local laws and regulations applicable to energy resources and energy use.

Federal Agencies

Federal agencies regulate energy production, transmission and consumption through various regulations and programs. Federal agencies, such as the Environmental Protection Agency (EPA), the U.S. Department of Energy (US-DOE), and the U.S. Department of Transportation (USDOT) affect energy consumption in the transportation sector through fuel economy standards, funding for transportation infrastructure and funding for energy related research and development projects. The USDOE also promotes a diverse supply and delivery of reliable, affordable and environmentally sound energy. The Federal Energy Regulatory Commission (FERC) is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines as well as licensing hydropower projects.

Energy Policy Act of 2005 (EPACT)

The EPACT is intended to establish a comprehensive, long-range energy policy, and the USDOE is responsible for its implementation. It provides incentives for traditional energy production as well as newer, more efficient energy technologies and conservation. Those incentives come in the form of various tax credits and deductions, which include automobile tax credits, home energy efficiency improvement tax credits, energy efficient commercial building deduction and business tax credits for businesses that produce biodiesel/alternative fuels and manufacture or purchase energy-efficient appliances[5].

Power Plant and Industrial Fuel Use Act

The Power Plant and Industrial Fuel Use Act is administered by the USDOE. In summary, the purpose of the Act is to reduce the importation of petroleum and increase the Nation's capability to use indigenous energy resources of the United States to the extent such reduction and use further the goal of national energy self-sufficiency and otherwise are in the best interests of the United States; to encourage and foster the greater use of coal and other alternate fuels, in lieu of natural gas and petroleum, as a primary energy source; and to the extent permitted by the Act, to encourage the use of synthetic gas derived from coal or other alternate fuels[6].

Transportation Equity Act for the 21st Century (TEA-21)

TEA-21 builds on the initiatives established in the *Intermodal Surface Transportation Efficiency Act of 1991(ISTEA)*, which was the last major authorizing legislation for surface transportation. TEA-21, enacted on June 9, 1998, authorizes highway, highway safety, transit, and other surface transportation programs for a six-year period (1998-2003). However, because Congress could not agree on funding levels, the Act has continued past 2003 by means of temporary extensions[7]. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

State and Local Agencies

California Energy Commission (CEC)

The CEC is the State's primary energy policy and planning agency. Created by the Legislature in 1974, the Commission has five major responsibilities: forecasting future energy needs and keeping historical energy data; licensing thermal power plants 50 megawatts or larger; promoting energy efficiency through appliance and building standards; developing energy technologies and supporting renewable energy; and planning for and directing state response to energy emergency. With the signing of the Electric Industry Deregulation Law in 1998 (Assembly Bill 1890), the Commission's role includes overseeing funding programs that support public interest energy research; advance energy science and technology through research, development and demonstration; and provide market support to existing, new and emerging renewable technologies. California is preempted under federal law from setting state fuel economy standards for new on-road motor vehicles[8].

California Public Utilities Commission (PUC)

The PUC regulates privately owned electric, telecommunications, natural gas, water and transportation companies, in addition to household goods movers and rail safety. The PUC is responsible for ensuring that customers have safe, reliable utility service at reasonable rates, protecting against fraud, and promoting the health of California's economy[9].

State and Local Regulations

State of California Energy Action Plan (EAP)

Administered by the California Energy Commission, the EAP was initially created in 2003 and updated in 2005. The EAP established shared goals and specific actions to ensure that adequate, reliable, and reasonably-priced electrical power and natural gas supplies are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers. Also incorporated in the EAP are specific actions reflecting the importance of transportation fuels to California's economy and the need to mitigate the environmental impacts caused by their use, as well as the importance of taking actions in the near term to mitigate California's contributions to climate change from the electricity, natural gas and transportation sectors[10].

California's Energy Efficiency Standards for Residential and Non-residential Buildings of 2005 (Title 24 Building Standards)

The California Energy Commission administers Title 24 Building Standards, which were established in 1978 in response to a legislative mandate to reduce

California's energy consumption. Last updated in October 2005, the standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods[11].

City of Oakley General Plan

The following applicable goals and policies are from the Oakley 2020 General Plan Growth Management Element:

Policy 4.7 Utilizing the energy and nutrient value of the solid waste (waste to energy and composting) to help reduce the amount of waste disposed of in landfills.

Policy 4.7.6 Encourage solid waste resource recovery (including recycling, composting, and waste to energy) so as to extend the life of sanitary landfills, reduce the environmental impact of solid waste disposal, and to make use of a valuable resource, provided that specific resource recovery programs are economically and environmentally desirable.

The following applicable goals and policies are from the Oakley 2020 General Open Space and Conservation Element:

Policy 6.2.1 Support the principles of reducing air pollutants through land use, transportation, and energy use planning. – Open Space and Conservation Element

The following applicable goals and policies are from the Oakley 2020 General Circulation Element:

Goal 3.7.G Review site plans and area plans to encourage mixed uses, thereby decreasing the number of vehicle trips required between uses. Promote land use patterns that maximize trip-linking opportunities. Locate mixed uses within walking or bicycling distance, and ensure that there are not physical barriers to walking and bicycling

Standards of Significance

The Proposed Project would have a significant energy impact if it would result in:

- Wasteful, inefficient and unnecessary usage of energy as identified by CEQA Section 21100(b)(3) and CEQA Guidelines 15126(a)(1); or
- Placement of a significant demand on regional energy supply or requirement of substantial additional capacity.

Impacts and Mitigation Measures

This section discusses the potential impacts of the proposed Project on overall energy consumption.

Impact EC-1 - Project Impacts Concerning Wasteful, Inefficient, or Unnecessary Consumption of Energy by Commercial Uses

The proposed Project consists of a mix of retail space configurations in several large buildings and free-standing pads, including three anchor spaces of more than 100,000 square feet, additional store spaces ranging from 4,000 to 30,000 square feet, and several pad spaces suitable primarily for restaurants. At this time, the proposed Project does not have any committed tenants but for the purposes of this analysis the EIR assumed anchor tenants are a large-format 230,000 square foot general merchandise discount supercenter with approximately 65,000 square feet of supermarket-equivalent use and also providing sales of garden, and other goods and services typically found in a large store of this type; a 170,000 square foot home improvement center; a third approximately 120,000 square foot large scale retailer such as a large apparel or durable goods store; up to an additional 220,000 square feet of general retail use including restaurants; and one hotel providing up to 100 rooms (maximum of between 30,000 and 40,000 square feet).

The Specific Plan provides for commercial development of the 76.4-acre Project site, including clearing, grading, utility and site improvements, development and ongoing operation of up to 770,000 square feet of retail and restaurant uses. Based upon reports and data provided by California Energy Commission and the Energy Information Administration of the U.S. Department of Energy, the average annual usage of electricity is roughly 13 kWhr/square foot and the average annual usage of natural gas is roughly 37 cubic feet/square foot for commercial buildings. Based upon these figures the proposed Project would be expected to produce 10,010,000 kWhr of electricity annually and 28,490,000 cubic feet of natural gas annually.

Although the proposed Project would result in the consumption of large quantities of energy typical for a project of this size, several aspects of the Project would help manage the amount and efficiency of energy consumption and would ensure that the related consumption is not inefficient, wasteful or unnecessary or place a significant demand on regional energy supplies.

Section 6.6 of the Specific Plan identifies a set of energy conservation measures that must be implemented in order to minimize inefficient energy usage, and promote conservation of energy resources throughout the life of the Project. As proposed, the individual development phases within the Project would comply with the following standards that are intended to reduce waste and use of non-renewable sources of energy, while promoting an overall program of long-term energy conservation. The Specific Plan requires compliance with the following standards, with verification by the community development director or his/her designee with each application for building permit:

Daylighting (compliance mandatory for all buildings 100,000 sf or greater)

Each interior public space shall be equipped with a "daylighting system" to reduce use of electricity for area lighting. The daylighting system shall include switching mechanisms to automatically and continuously dim all lights as the daylight contribution increases through use of properly placed windows and skylights.

Night Dimming (compliance mandatory for all uses)

Each business that operates on extended hours shall provide an automatic switching system to dim lighting within all interior public spaces to between 60% and 70 percent illumination between the hours of 10:00 pm and 7:00 am (standard time).

Energy Efficient HVAC Systems (compliance mandatory for all uses)

All mechanical equipment provided for the purpose of heating and cooling interior public spaces shall satisfy all California title 24 requirements; in addition, all such equipment shall achieve a minimum EER (energy efficiency ratio) of rating of 10.0.

Central Energy Management (compliance mandatory for all buildings 100,000 sf or greater)

Each Major Retail use as identified on the approved development plan shall be equipped with energy management systems which are monitored and controlled by a designated energy conservation manager whose office shall be located either on the premises or at an approved off-site location. The energy conservation manager shall be trained in optimization of all available technology, and shall monitor energy usage and performance to provide continuous compliance 24-hours a day.

Water Heating (compliance mandatory for all buildings 100,000 sf or greater)

Waste heat from the refrigeration equipment shall be captured in order to pre-heat water for use in kitchen preparation applications or other on-premises uses requiring heated water.

White Roofs (compliance mandatory for all uses)

All built-up roof surfaces (excluding hip, gable and other decorative architectural elements) shall be provided with a "white" membrane roof, also known as a cool roof. The solar reflectivity of such roof membrane systems are intended to lower interior cooling loads in the Oakley climate zone by roughly 10%, compared to conventional darker roof colors. Solar reflectivity on roofs also reduced the amount of conversion of UV rays to infrared heat, possibly reducing the heat island effect created by most large, developed parcels of land.

Interior Lighting Systems (compliance mandatory for all uses)

All interior public spaces shall be provided with lighting systems that utilize high efficiency T-8 fluorescent lamps and electronic ballasts, or approved equivalent systems. Fluorescent lamps shall be of the "low-mercury" variety.

LED Interior Signage Illumination (compliance mandatory for all buildings 100,000 sf or greater)

Light emitting diode (LED) lighting, or an approved equivalent, shall be used for all internally illuminated building signage. LED lighting technology is recognized as consuming substantially less electricity than fluorescent or other illumination sources. In addition, the longer lamp life afforded by LED technology substantially reduces need to manufacture and dispose of fluorescent lamps.

Integrally Colored Concrete Floors (compliance mandatory for all buildings 100,000 sf or greater)

A minimum of 80 percent of the interior public floor space within Major Retail buildings shall be of a natural or integrally colored concrete finish. This requirement is intended to limit the relative volume of carpet and vinyl tile finishes, thereby reducing the ultimate need for manufacture and disposal of PVC, and also reducing the use of chemical cleaners, wax, and wax strippers.

Recycled Materials in Building Construction (compliance mandatory for all buildings 200,000 sf or greater)

The following materials shall be used in the fabrication of Major Retail use building systems:

- Steel Recycling: a minimum of 80 percent of the structural steel used in the construction of buildings shall be recycled.
- Recycled Plastic: a minimum of 80 percent of all plastic baseboards and plastic shelving used in Major Retail buildings shall be manufactured from recycled material.

In addition to the above design features of the proposed Project, the California Building Standards Code, energy conservation requirements in Title 24, Part 6, California Code of Regulations, for non-residential buildings would be applied. The California Energy Commission adopted new Energy Efficiency Standards for Residential and Nonresidential Buildings that went into effect on October 1, 2005. Among the reasons that the Energy Commission adopted the 2005 changes to the Building Energy Efficiency Standards was to respond to California's energy crisis to reduce energy bills and increase energy delivery system reliability. The Commission also wanted to emphasize energy efficiency measures that save energy at peak periods and seasons and to improve the quality of installation of energy efficiency measures. Projects that apply for a building permit on or after October 1, 2005, must comply with the 2005 standards.

Pursuant to the California Building Standards Code and the Energy Efficiency Standards, the Building Department would review the design components of the Project's energy conservation measures when the Project's building plans are submitted. Conservation measures could include: insulation; the use of energy-efficient heating, ventilation and air conditioning equipment (HVAC); solar-reflective roofing materials; energy-efficient indoor and outdoor lighting systems; the reclamation of heat rejection from refrigeration equipment to generate hot water; the incorporation of skylights, etc.

In terms of energy consumption related to vehicle use, the location of the proposed Project would focus the destination of vehicle trips and benefit fuel consumption. Oakley's population has been increasing at an average annual rate of 3.1 percent, from 25,619 persons in 2000 to an estimated 29,800 persons in 2005. Based on existing development approvals (as shown in DEIR Appendix H), Oakley's population has been steadily increasing at an average annual rate of three percent since 2000. Based on existing development approvals, the City of Oakley projects that Oakley's growth will exceed eight percent annually, through 2015. The subregion's population, which has grown at a consistently strong rate since 1990, will slow in the next few years to an average annual rate of 1.6 percent. An additional 55,700 persons are expected by 2015, with the subregion population projected to reach 232,100 persons. While the specific trip length reduction associated with sales capture from population increases cannot be precisely quantified, it is estimated that the 770,000 square feet of retail space included in the Specific Plan Project would have a substantial positive impact in reducing the average shopping trip length for this growing base of local residents. The proposed mix of retail uses in the Specific Plan would encourage multi-

purpose shopping trips and reduce fuel consumption by reducing the number of trips some people might otherwise make between different stores.

The Specific Plan ensures that development within the Project area would be subject to the above-identified guidelines to ensure that the proposed Project as well as Title 24 guidelines and regulations. Therefore, the proposed Project would be expected to have ***less-than-significant*** impact regarding the wasteful, inefficient or unnecessary consumption of energy.

Impact EC-2 - Increased Demand on Electric and Natural Gas Infrastructure

The Project site is currently served by electric and gas services, as shown in Figures 3.7-1 and 3.7-2. Overhead electric lines with a 21 KV capacity currently extend along both street frontages of the Project site. A 12-inch natural gas line extends along the Project frontage on Main Street, and turns north at a point opposite the southwesterly corner of the site to extend through the site. Natural gas lines of size varying from four-inch to six-inch extend along the Bridgehead Road frontage. Gas and electric service providers would be subject to increased pressure to supply additional energy resources, which could result in the need to expand existing facilities or to build new power plants. However, in response to the Notice of Preparation (NOP) for the proposed Project, Gene Tedder, Senior New Business Representative for PG&E, noted that “PG&E has adequate gas and electric facilities in the area to serve [the] proposed project.”

In addition, the construction of the proposed Project site would result in potential conflicts regarding existing natural gas lines. The building envelope of Major Pad A would encroach within an existing gas pipeline on the Project site. The construction of Major Pad A and surrounding improvements could result in a potential conflict with the existing natural gas line.

Because the Project would require the extension of existing gas and electric facilities to adequately service the development associated with the proposed Specific Plan, the proposed Project would have a ***potentially significant*** impact.

The implementation of the mitigation measures included below would reduce the impacts associated with electric and natural gas services to a ***less-than-significant*** level.

Figure 3.7-1
Electric Power Services

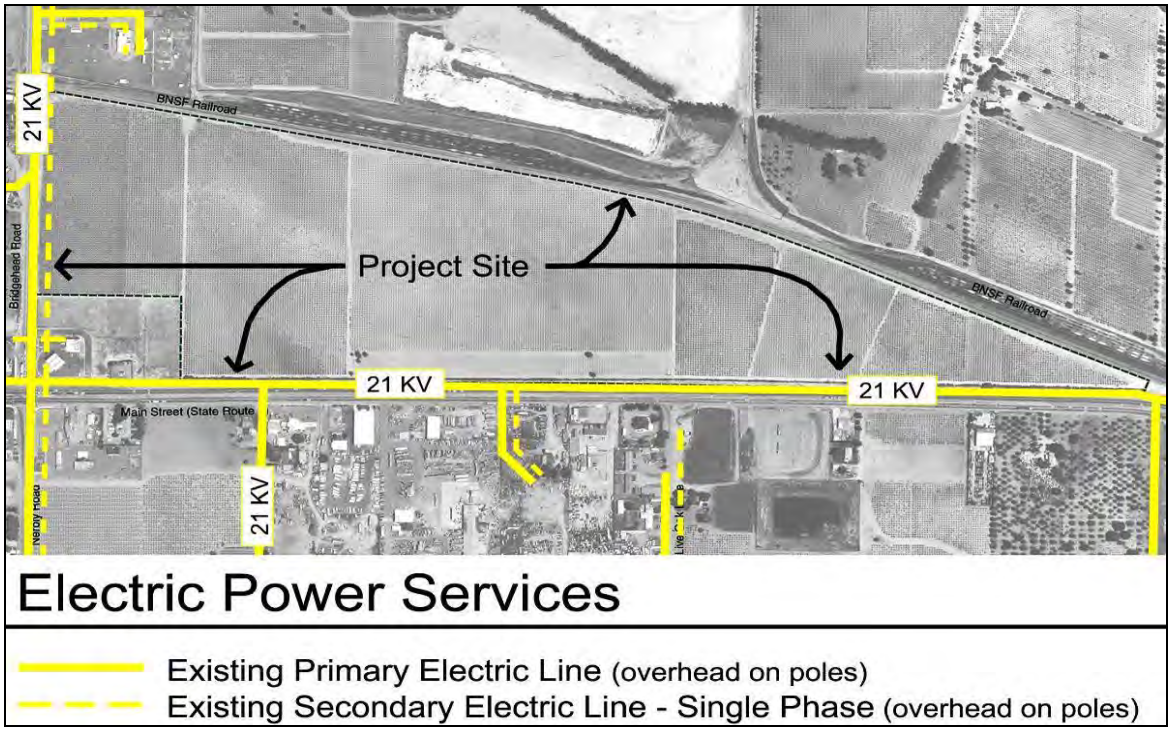
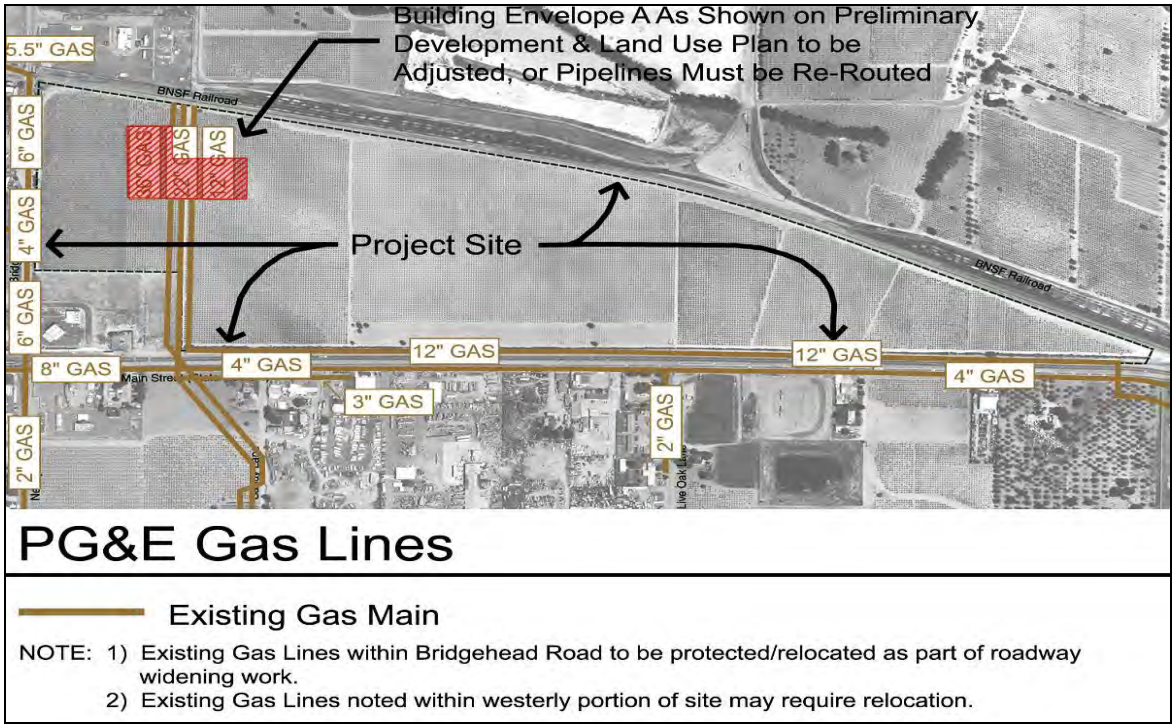


Figure 3.7-2
PG&E Gas Lines



Source: Oakley Industrial Area Infrastructure Analysis, Carlson, Barbee & Gibson, Inc., September 2001.

Mitigation Measure(s):

EC-2(a) *Each improvement plan shall show the location and method of connection to the existing natural gas supply line located along the Main Street frontage of the site. In addition, development of Major Building Envelope A and all nearby site improvements shall either require that the lines be realigned or the envelope for Building A be adjusted, in order to avoid construction and/or operational conflicts. Plans shall be designed to the satisfaction of the City Engineer, pipeline owner(s) and utility provider.*

EC-2(b) *Each improvement plan shall provide for underground installation of all onsite utilities, with the exception of high voltage lines, to the satisfaction of the City Engineer. In addition, improvement plans shall be prepared to provide for the undergrounding of existing overhead utility lines along Bridgehead Road, as required by the City and utility pole owners.*

EC-2(c) *Each developer shall pay any and all connection fees to which the property may be subject prior to issuance of building permits. The type and amount of the fees shall be those in effect at the time the building permit is issued.*

Cumulative Impacts Related to Increased Energy Consumption from the Proposed Project in Combination with other Foreseeable Projects in the Region

The proposed Project in combination with other future development projects would result in an increased demand on energy resources. Gas and electric service providers would be subject to increased pressure to supply additional energy resources, which could result in the need to expand existing facilities or to build new power plants. However, in response to the Notice of Preparation (NOP) for the proposed Project, Gene Tedder, Senior New Business Representative for PG&E, noted that "PG&E has adequate gas and electric facilities in the area to serve [the] proposed project" and that the proposed Project would not result in any major conflicts with PG&E's existing gas and electric facilities.

As indicated above (See Impact EC-1), the Project would be subject to the minimum energy conservation requirements of Title 24 of the California Code of Regulations, which would serve to reduce the amount of energy resources needed to operate the Project. The Project applicant would also be required to fund the necessary infrastructure improvements to ensure that the Project receives adequate energy resources. Because other future developments would also be required to comply with Title 24 and fund the construction of the necessary utility infrastructure improvements, and because PG&E noted that they maintain adequate supplies of natural gas and electricity to supply the

proposed Project in combination with other developments, cumulative energy impacts would be considered ***less-than-significant***.

Endnotes

[1] State of California Energy Commission's website. http://www.energy .ca.gov/html/energysources.html, accessed on August 17, 2007. Page was last updated on April 16, 2007. Renewable numbers derived from http://www.energy.ca.gov/electricity/gross_systems_power.html, also accessed on August 17, 2007.
[2] U.S. Department of Energy's website. http://www.energy.gov/energysources/index.htm, accessed on August 17, 2007.
[3] Btu is defined as the quantity of energy necessary to raise the temperature of 1 lb. of water 1° Fahrenheit.
[4] U.S. Department of Energy's website. http://www.eia.doe.gov/emeu /states/_seds.html, accessed on August 17, 2007.
[5] Federal Energy Regulatory Commission's website. http://www.ferc.gov/legal/maj-ord-reg/fed-sta.asp, accessed on August 17, 2007.
[6] Cornell Law School, United States Code Collection. http://www4.law.cornell.edu/uscode/html/uscode42/usc_sup_01_42_10_92.html. Accessed on August 17, 2007.
[7] Transportation Equity Act for the 21st Century. http://en.wikipedia.org/wiki/Transportation_Equity_Act_for_the_21st_Century. Accessed on October 10, 2006.
[8] California Energy Commission's website. http://www.energy.ca.gov/ commission/index.html, accessed on August 18, 2006.
[9] California Public Utilities Commission's website. http://www.cpuc.ca. gov/static/aboutcpuc/pucmission.htm, accessed on August 18, 2006.
[10] California Energy Commission's website. http://www.energy.ca.gov/energy_action_plan/index.html, accessed on August 18, 2006.
[11] California Energy Commission's website. http://www.energy.ca.gov/title24/, accessed on August 18, 2006.

3.8 GREENHOUSE GASSES AND GLOBAL CLIMATE CHANGE (GCC)

Global climate change (GCC) is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation, and temperature. The existence of GCC is widely accepted both nationally and internationally, according to the Association of Environmental Professionals[1]. The extent of the change or the exact contribution from sources influenced by human activity, including development and operation of facilities, such as that contemplated in the proposed Specific Plan Project, remains in debate. This analysis does not attempt to quantify the specific cumulative contribution of the proposed Project to GCC; rather, it provides a qualitative assessment of the issue as it relates to the proposed Project.

Environmental Setting

The following setting information provides an overview of the existing body of knowledge related to global climate change.

Existing Conditions

Greenhouse Gases (GHG) are those that trap heat in the atmosphere. GHG are emitted by both natural processes and human activities. The accumulation of GHG in the atmosphere regulates the earth's temperature. Without natural GHG, scientists estimate that the Earth's surface would be about 61°F cooler[2]. However, it is also believed that the combustion of fossil fuels (coal, petroleum, natural gas, etc.) for human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. The increase in atmospheric concentrations of GHG has resulted in more heat being held within the atmosphere, which is the accepted explanation for GCC.

According to the EPA, the global warming potential of a gas, or aerosol, to trap heat in the atmosphere is the "cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas". Common GHG components include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydro-fluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Carbon dioxide is widely used as the reference gas for comparison of equivalent global warming potential. The carbon dioxide equivalent is a good way to assess emissions because it gives weight to the global warming potential of the gas. Methane gas, for example, is estimated by the Association of Environmental Professionals and the EPA to have a comparative global warming potential 21 times greater than that of carbon dioxide. At the extreme end of the scale, sulfur hexafluoride is estimated to have a comparative global warming potential 23,900 times that of

carbon dioxide. The "specified time horizon" is related to the atmospheric lifetimes of such GHGs, which are estimated by the EPA to vary from 50-200 years for carbon dioxide, to 50,000 years for tetrafluoromethane. Longer atmospheric lifetimes allow GHG to buildup in the atmosphere; therefore, longer lifetimes correlate with the global warming potential of a gas.

One teragram (equal to one million metric tons) of carbon dioxide equivalent (Tg CO2 Eq.) is defined by the EPA as the emissions of the reference GHG multiplied by the equivalent global warming potential. In 2004, total worldwide GHG emissions have been estimated to be 20,135 Tg in CO2 equivalents. In 2004, the U.S. contributed the greatest percentage of worldwide GHG emissions (35%). In 2004, the EPA estimates that GHG emissions in the U.S. were 7074.4 Tg of CO2 equivalent, which is an increase of 15.8 percent from 1990 emissions. California is a substantial contributor of GHG as it is the second largest contributor in the U.S. and the sixteenth largest in the world. In 2004, California is estimated to have produced seven percent of the total U.S. emissions. The major source of GHG in California is transportation, which contributes 41 percent of the State's total GHG emissions, followed by electricity generation, which contributes 22 percent of the State's GHG emissions.

Global Changes

The Intergovernmental Panel on Climate Change (IPCC) report indicates that the average global temperature is likely to increase between 3.6 and 8.1 degrees Fahrenheit by the year 2100, with larger increases possible but not likely. Temperature increases are expected to vary widely in specific locations depending on a variety of factors. The increase in temperature is expected to lead to higher temperature extremes, precipitation extremes leading to increased flooding and droughts, ocean acidification from increase carbon content, and rising sea levels.

Changes in the Western United States and California Climate

Climate models indicate that if GHG emissions continue to proceed at a medium or high rate, temperatures in California are expected to increase by 4.7 to 10.5 degrees Fahrenheit by the end of the century[3]. Lower emission rates would reduce the projected warming to 3 to 5.6 degrees Fahrenheit. Almost all climate scenarios include a continuing trend of warming through the end of the century given the vast amounts of greenhouse gases already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. According to the 2006 California Climate Action Team Report (CCAT, 2006) the following climate change effects are predicted in California over the course of the next century:

- A diminishing Sierra snowpack declining by 70% to 90%, threatening the State's water supply.

- Increasing temperatures from 8 to 10.4 degrees F under the higher emission scenarios, leading to a 25 to 35% increase in the number of days ozone pollution levels are exceeded in most urban areas.
- Coastal erosion along the length of California and seawater intrusion into the Delta from a 4- to 33-inch rise in sea level. This would exacerbate flooding in already vulnerable regions.
- Increased vulnerability of forests due to pest infestation and increased temperatures.
- Increased challenges for the State's important agriculture industry from limited water shortage, increasing temperatures, and saltwater intrusion into the Delta.
- Increased electricity demand, particularly in the hot summer months.

Therefore, temperature increases would lead to environmental impacts in a wide variety of areas, including: reduced snowpack resulting in changes to the existing water resources, increased risk of wildfires, changing weather expectations for farmers and ranchers, and public health hazards associated with higher peak temperatures, heat waves, and decreased air quality.

Water Resources

Depending on the climate model, precipitation is predicted to increase or decrease slightly. However, the form in which precipitation occurs could change substantially. Warmer winters would lead to less snow and more rain. As a result, the Sierra snowpack would be reduced and would melt earlier. This change could lead to increased flood risks as more water flows into reservoirs and rivers during the winter rainy period. Furthermore, the late spring and summer flows to reservoirs would be reduced due to snowpacks and would help reduce the chance of restricted water supplies for cities, agriculture, and rivers.

Increased temperatures would also lead to a rise in the sea level, from both thermal expansion and the melting of land-based glaciers. During the past century, sea levels along the California coast have risen by approximately seven inches. Climate forecasts indicate the sea level would rise by 7 to 23 inches over the next 100 years depending on the climate model[4]. Substantial melting of either the Greenland or Antarctic ice sheets would lead to an even greater increase; however, the IPCC models do not indicate that this would occur within the next 100 years, which is the boundary of most climate models. Longer forecast periods are inherently less reliable as they require more assumptions, and tend to compound the effects of assumptions that may be incorrect. Increases in sea level could lead to increased coastal flooding, salt water intrusion into aquifers, and disrupt wetlands and estuaries.

Wildfires

Increased temperatures would lead to increases in evapotranspiration. The summers would likely be drier, and vegetation would also be more likely to dry out, resulting in increasingly more flammable forests and wildlands. In addition, warmer temperatures could lead to the expansion of pests that kill and weaken trees, leading to increases in the amount of highly flammable dead trees, increasing the risk of large forest fires.

Weather Extremes

The temperature increases presented in climate change models are yearly averages. Within those averages is the potential for substantially hotter summers and/or colder winters. As a result of GCC, the weather is expected to become more variable, with larger extremes. In California, the increase in temperatures is expected to lead to more days with temperatures in excess of 95 degrees. More days of extreme heat has implications for public health as Californians would face greater risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat. In addition, increased temperatures have implications for agricultural crops, particularly long-term crops such as grapes and fruit trees that are planted in particular locations to take advantage of micro-climates.

Air Quality

As indicated in the discussion of weather extremes, increased temperatures can increase air quality problems. Increased temperatures create the conditions in which ozone formation can increase. In addition, hotter temperatures would likely result in increased electricity use to power air conditioners and refrigerators. Increased power use has the potential to result in increased air pollutant emissions as more electrical generation is needed to meet the demand.

Uncertainty Regarding Global Climate Change

The scientific community has largely agreed that the earth is warming, and that humans are contributing to that change. However, the earth's climate is composed of many complex mechanisms, including: ocean currents, cloud cover, as well as the jet-stream and other pressure/temperature weather guiding systems. These systems are in turn influenced by changes in ocean salinity, changes in the evapotranspiration of vegetation, the reflectivity (albedo) of groundcover, as well as numerous other factors. Some changes have the potential to reduce climate change, while others could form a feedback mechanism that would speed the warming process beyond what is currently projected. The climate system is inherently dynamic; however, the overall trend is towards a gradually warming planet.

Regulatory Setting

Thus far the approach to addressing the emission of GHGs is through environmental regulations enforced through air quality laws. The Supreme Court had determined that GHGs are pollutants that can be regulated under the Clean Air Act. In addition, California has passed laws directing the Air Resources Board to develop actions to reduce GHG emissions. However, at the time of this writing, regulations setting ambient air quality emissions standards for greenhouse gases do not exist.

Federal

U.S. Environmental Protection Agency

The United States Environmental Protection Agency (USEPA) is charged with enforcing the Clean Air Act. The USEPA has established air quality standards for common pollutants. These ambient air quality standards represent the allowable levels for each contaminant, according to the various thresholds of each pollutant for causing adverse health effects. The standards cover what are called "criteria" pollutants because health and other effects of each pollutant are described in criteria documents. The USEPA has been directed to develop regulations to address the GHG emissions of cars and trucks. At the time of this writing, EPA regulations for GHGs do not exist, and are not expected until late 2008 at the earliest.

Western Regional Climate Action Initiative

On February 26, 2007, five states (Washington, Oregon, Arizona, New Mexico, and California) signed the Western Regional Climate Action Initiative with British Columbia and Canada joining on April 20, 2007. The goal of the Initiative is to collaborate in order to identify, evaluate, and implement ways to reduce GHG emissions as well as to design a regional market-based multi-sector mechanism by August 2008. In addition, a multi-state registry will track, manage, and credit entities that reduce GHG emissions.

State

Assembly Bill 1493

In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493. AB 1493 requires that the California Air Resources Board (ARB) develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty truck and other vehicles determined by the Air Resources Board (ARB) to be vehicles whose primary use is noncommercial personal transportation in the state." Currently, the

State is waiting for a determination on the State's request for a waiver from the USEPA to begin regulation of GHG emissions from vehicles.

Executive Order S-3-05

In 2005, Governor Schwarzenegger signed Executive Order S-3-05, which established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050. The Executive Order directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary is also directed to submit biannual reports to the governor and state legislature describing: (1) progress made toward reaching the emission targets; (2) impacts of global warming on California's resources; and (3) mitigation and adaptation plans to combat these impacts.

To comply with the Executive Order, the Secretary of the CalEPA created a Climate Act Team (CAT) made up of members from various state agencies and commissions. CAT released its first report in March 2006. In addition, the CAT has released several "white papers" addressing issues pertaining to the potential impacts of climate change on California.

Executive Order S-01-07

On January 18, 2007, Governor Schwarzenegger signed Executive Order S-01-07, which mandates that a statewide goal be established to reduce carbon intensity of California's transportation fuels by at least 10 percent by 2020. The Order also requires that a Low Carbon Fuel Standard for transportation fuels be established for California.

Assembly Bill 32, The California Climate Solutions Act of 2006

In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

Senate Bill 1368

SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission (PUC) to establish a GHG emission performance standard for baseload generation from investor owned utilities by February 1, 2007. The California Energy Commission (CEC) must establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas fired plant. On January 27, 2007, the PUC adopted an interim Greenhouse Gas Emissions Performance Standard to require that all new long-term commitments for baseload power generation to serve Californians do not exceed the emissions of a combined cycle gas turbine plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC and CEC. On May 28, 2007 the Energy Commission adopted regulations pursuant to SB 1368 establishing and implementing a GHG emission performance standard for baseload generation of local publicly owned electric utilities. The final rulemaking package was submitted to the Office of Administrative Law (OAL) on June 1, 2007 with a request for expedited review. On June 29, 2007 OAL issued a decision disapproving the rulemaking action. Revised regulations have not been submitted as of the writing of this DEIR (August, 2007).

California Air Resources Board (CARB)

The CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for the California Clean Air Act (CCAA) adopted in 1988. The CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the National Ambient Air Quality Standards established by the USEPA. As discussed above, the CARB is charged with developing rules and regulations to cap and reduce GHG emissions.

Discussion of Impacts and Significance

Regulatory Setting and CEQA

AB 32 includes the declaration by the Legislature that “global warming poses a serious threat to the economic wellbeing, public health, natural resources, and environment of California.” Section 38501(a) of AB 32 also states that: “the potential effects of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snow pack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.” Section 38598(b) directs

that "nothing in this division shall relieve any state entity of its legal obligations to comply with existing law or regulation." These legislative findings have been used to challenge the adequacy of environmental and planning documents that do not address GCC. However, in the absence of standards of significance, or legislative direction, to lead agencies, the piecemeal analysis and mitigation of a global phenomena at a local level would require speculation and assignment of mitigation that may not meet the "roughly proportional" standard established by CEQA case law (Ehrlich v. City of Culver City (1996)). If an accurate means to measure and determine a project's significance is not available, then making a conclusion whether the mitigation measures applied to a project mitigate the project's impact cannot be reached.

Quantification of Project Emissions

As described above in the "Environmental Setting" sub-section, increases in greenhouse gas emissions in the State and City could contribute to increases in global average temperatures and climate change. Climate change in turn could lead to sea level rise and other changes in environmental conditions.

The major sources of GHG emissions generated from the proposed Project are vehicle source CO_2 emissions. Vehicle transportation is one of the major contributors to GHG emissions in Contra Costa County and the City of Oakley. Vehicle emissions primarily consist of CO_2 from the tailpipe during vehicle operation. The traffic analysis conducted for the Project (See Appendix D of this DEIR) provides data that can be used to estimate CO_2 emissions from Project generated vehicle trips. The proposed Project is estimated to generate 32,030 new vehicle trips per day (see Table 7 of Appendix D of this DEIR)[5]. Using the URBEMIS outputs contained in Air Quality Assessment (Appendix G of this DEIR), the proposed Project would generate an average of 122,230 vehicle miles traveled (VMT) per day, or approximately 44,613,950 VMT annually. Assuming an emissions factor for future CO_2 emissions from vehicles of approximately 366 grams CO_2/mile[6], approximately 17,999.3 tons (US) of CO_2 per year would be generated by the vehicle trips associated with the proposed Project. It should be noted that while the CO_2 emissions factor does assume certain reductions in vehicle emissions due to future vehicle models operating more efficiently, the factor does not take into account additional reductions in vehicle emissions that might take place in response to AB 1493, if mobile source emission reductions are ultimately implemented through legislation.

In addition, based on information in Chapter 3.7, Energy, the proposed Project would use approximately 10,010,000 kilowatt hours per year, and 28,490,000 cubic feet of natural gas. According to PG&E the average CO_2 emissions rate for electricity sold to customers was 500 pounds per megawatt of electricity (0.00025 tons/kilowatt)[7]. In addition, natural gas use results in the 0.1206 pounds of CO_2 per cubic foot[8]. Therefore, the buildings associated with the proposed Project would result in the emission of approximately 4,220.4 tons of CO_2 per year (See

Table 3.8-1). Issues related to building energy efficiency have been addressed in Section 3.7, Energy.

Table 3.8-1
Carbon Dioxide Emissions

	Use	Conversion Rate	Emissions
Natural Gas	28,490,000 cubic feet	0.1206 lbs/cubic foot	1,717.9 tons of CO_2
Electricity	10,010,000 kwh/year	0.00025 tons/kilowatt	2,502.5 tons of CO_2
Vehicles	44,613,950 VMT	366 grams CO_2/mile	17,999.3 tons of CO_2
Total			22,219.7 tons of CO_2 per year

CO_2 emissions in California totaled approximately 391 million tons in 2004[9]. Total CO_2 emissions from the proposed Project, as estimated above, would be approximately 0.00568 percent of the statewide total. However, the actual statewide GHG emissions totals generated by the proposed Project are likely much lower than the percentage listed above, as the vast majority of the vehicle trips "generated" by the proposed Project are already occurring elsewhere. Furthermore, due to the expansion of the State population and economy, the current statewide GHG emissions are likely higher than in 2004; therefore, the Project's percentage of statewide emissions would be even further reduced.

Qualitative vs. Quantitative Assessment

As discussed above, CARB and other air quality regulatory agencies have not issued any guidance that agencies can follow in evaluating how land use developments contribute to climate change. While there are some established methodologies and mitigation measures for stationary source emissions, an accepted methodology for evaluating how land use projects may contribute to climate change via mobile source emissions does not exist.

Issues of GHG emissions and climate change are fundamentally different from other areas of air quality impact analysis, which are all linked to some region or area in which the impact is significant. In the case of toxic air contaminants, that area typically is a very localized area. In the case of ozone precursors, that area is typically the air basin, which is in non-attainment status for ozone. In those contexts, where air quality is linked to a particular location or area, it is appropriate to consider the creation of new emissions in that area in itself as an environmental impact.

As demonstrated above, calculating the Project's approximate GHG emissions is possible; however, it is important to note that the emissions calculations have significant limitations. These above calculations allow the user to estimate GHG

emissions in pounds per day or tons of CO_2 per year for various land uses and projects. The calculations also included some features that minimized double counting of trips, for example a customer who parked and visited several business within the River Oaks Crossing Specific Plan was not counted as multiple vehicle trips because the Traffic Assessment included trip reductions. However, the GHG emissions calculations presented here only evaluate and model aggregate CO_2 emissions, they do not demonstrate, with respect to a global impact, how much of these aggregate emissions are in fact "new" emissions specifically attributable to the proposed Project.

This fact is critically important, because the approval of the proposed Project would not create new drivers – the primary source of the Project's emissions. Customers shopping at the proposed Project would most likely be switching their greenhouse gas emissions from one place to another, rather than creating new emissions. Thus, the use of models that measure overall emissions, without accounting for existing emissions, would substantially overstate the proposed Project's impact on GHG emissions. Overstating the impacts of the proposed Project on GHG emissions could lead to misallocation of resources in seeking solutions to GHG emissions and climate change problems. Instead, a more effective approach to resolving climate change issues would include imposing state or federal regulations on fuel formulation, vehicles, and the like; as California is attempting to do with the Low Carbon Fuel Standard.

The proposed Project for the most part would not "create" GHG emissions. Instead, the Project would "move" the emissions from one area to another, as an existing driver moves from one area to the other. Therefore, quantitative analysis of GHG emissions would be substantially different from other air quality impacts, where the addition of "moved" emissions to a new locale (such as a toxic hot spot or an air basin that is not attaining ozone standards) can make a substantial difference. Accordingly, the above quantitative analysis of the proposed Project's contribution to GCC is inherently inaccurate and speculative.

Project Compliance with GHG Reduction Strategies

The California Environmental Protection Agency Climate Action Team developed a report that proposes a path to achieve the Governor's targets that will build on voluntary actions of California businesses, local government and community actions, and State incentive and regulatory programs. The report indicates that the strategies would reduce California's emissions to the levels proposed in Executive Order S-3-05. The strategies that apply to the Project are contained in Table 3.8-2. As shown in the table, and outlined in detail in Chapter 3.7, Energy Conservation, the Project would comply with the potential measures set forth by the Climate Action Team to bring California to the emission reduction targets.

The increase in energy efficiency and programs designed to promote fuel conservation through the reduction in vehicle trips would reduce the Project's

incremental contribution to GHG emissions and global climate change in a manner that is consistent with the strategies to reduce California's emissions to the level proposed in Executive Order S-3-05.

Table 3.8-2
Project Compliance with GHG Emissions Reduction Strategies

Agency	Strategy	Project Compliance with Reduction Strategy
California Air Resources Board (CARB)	Vehicle Climate Change Standards Heavy-Duty Vehicle Emissions Reduction Measures	**Compliant.** The vehicles that access the Project will be in compliance with any vehicle standards that CARB proposes.
	Diesel Anti-Idling	**Compliant.** CARB's Airborne Toxic Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling ensures that diesel trucks accessing the Project site would not idle.
	HFC Reduction Strategies	**Compliant.** The proposed Project would use air conditioning units that contain reduced levels of HFCs relative to conventional models.
California Energy Commission	Building Energy Efficiency Standards Appliance Energy Efficiency Standards	**Compliant.** The Specific Plan would require compliance with the updated Title 24 standards for building construction including exterior lighting requirements. Some of the changes required in the new standard include requirements for indoor lighting efficiency, skylights in stores with controls to shut of lights when daylight is available, cool roof coating requirements, duct insulation, efficient water heating, and efficient space conditioning. In addition, the largest buildings would be required to comply with substantially stricter efficiency measures.
State Department of Business, Transportation, and Housing	Measures to Improve Transportation Energy Efficiency	**Compliant.** The proposed Project is adjacent to existing urbanized area, and is surrounded by lands planned for development. The Project site would be served by the Tri-Delta Transit, and would contain pedestrian and bicycle paths and amenities. All of these features promote transportation efficiency.
	Smart Land Use and Intelligent Transportation Systems (ITS)	**Compliant.** Smart land use strategies "encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors." The proposed Project locates commercial uses on an existing transit corridor. Therefore, the proposed Project meets the above definition of smart land use. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services. The proposed Project provides goods whose availability in the City of Oakley is currently limited, thereby improving the efficiency of goods movement.

In addition, as quantified above, the retail businesses, including the supercenter and other Major and Secondary Retail uses will generate a substantial volume of vehicle trips and corresponding CO2 GHG emissions. The proposed Project's retail facilities would provide shopping opportunities for residents of the City, a population that is currently dramatically underserved. Consequently, it is expected that the local shopping trips produced by the Proposed Project would replace longer distance vehicle trips currently being undertaken by residents of the City to reach retail facilities, thereby reducing the emissions of CO2 and other GHG components in comparison to that otherwise produced through continued servicing of the expanding Oakley population from further distant retail facilities in adjoining communities. Chapter 3.7 discusses the current "leakage" of retail purchases made by Oakley residents who currently travel to surrounding communities for needed goods and services. Appendix H (the Market Impact Analysis) estimates that the proposed Project would capture between 50 and 90 percent of the additional supportable sales from local Oakley population growth in the future. While the specific trip length reduction associated with sales capture from population increases cannot be precisely quantified, it is estimated that by providing goods and services closer to the population served, implementation of the proposed Project would result in a net reduction in annual vehicle miles traveled and therefore in CO2 emissions. In addition, it should also be noted that the proposed Project, in mitigating for energy use, has been designed to incorporate measures that would reduce GHG emissions.

Conclusion Regarding Global Climate Change

Given the overwhelming scope of GCC, a single development project, even one of the relatively large scale of the River Oaks Crossing Specific Plan, would be unlikely to have an individually discernable effect on GCC, i.e., that any increase in global temperature or sea level could be attributed to the emissions resulting from the proposed Project. A more appropriate discussion would center on how the proposed Project could combine with emissions across California, the United States, and the globe to cumulatively contribute to GCC.

However, even in a cumulative discussion of GCC, declaring an impact significant, or not significant, implies a knowledge of the incremental effects of the proposed Project to the global cumulative scenario. To determine whether the proposed Project would have a significant impact associated with GCC, in light of the fact that significance thresholds for such an impact do not exist, would be speculative and substantial evidence is not available at present to legitimately evaluate the issue in this EIR. Therefore, consistent with CEQA Guidelines Section 15145, because the City has made an effort to fully explore the potential for GCC and has determined that the conclusion would be speculative, a determination of significance cannot be made. It should be noted, however, that mitigation measures included in the Air Quality and Energy Conservation chapters of this Draft EIR would reduce greenhouse gasses.

Endnotes

[1] Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents, Association of Environmental Professionals. June 29, 2007.
[2] Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents, Association of Environmental Professionals. June 29, 2007.
[3] California Climate Change Center. *Our Changing Climate: Assessing the Risks to California*, 2006.
[4] Meehl, G.A., T.F. Stocker, W.D. Collins, P. Friedlingstein, A.T. Gaye, J.M. Gregory, A. Kitoh, R. Knutti, J.M. Murphy, A. Noda, S.C.B. Raper, I.G. Watterson, A.J. Weaver and Z.-C. Zhao, 2007: Global Climate Projections. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
[5] Fehr & Peers, *Traffic Impact Analysis Cline Specific Plan*, May 2007.
[6] California Air Resources Board. 2002. Proposed Methodology to Model Carbon Dioxide Emissions and Estimate Fuel Economy. Available: http://www.arb.ca.gov/msei/onroad/downloads/pubs/co2final.pdf. Accessed in August 2007.
[7] http://www.pgecorp.com/corp_responsibility/reports/2004/env_page1.htm
[8] http://www.climatetrust.org/solicitations_2007_Metrics.php
[9] California Energy Commission (CEC). 2006a. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*. Publication CEC-600-2006-013-D.

3.9 AGRICULTURAL RESOURCES (AR)

The land use impact analysis describes the existing agricultural setting of the River Oaks Crossing Specific Plan Project site and the adjacent area, including the identification of existing land uses and current General Plan policies.

Environmental Setting

Existing Conditions

The following describes current farmland and soil productivity classification systems, as well as the extent and quality of the agricultural resources present on the Project site.

Farmland Classifications

The United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) uses two systems to determine a soil's agricultural productivity: the Soil Capability Classification and the Storie Index Rating System. The "prime" soil classification of both systems indicates the absence of soil limitation, which if present, would require the application of management techniques (e.g., drainage, leveling, special fertilizing practices) to enhance production. The Farmland Mapping and Monitoring Program, part of the Division of Land Resource Protection, California Department of Conservation, uses the information from the USDA and the NRCS to create maps illustrating the types of farmland in the area.

Soil Capability Classification

The Soil Capability Classification System takes into consideration soil limitations, the risk of damage when soils are used, and the way in which soils respond to treatment. Capability classes range from Class I soils, which have few limitations for agriculture, to Class VIII soils, which are unsuitable for agriculture. Generally, as the rating of the capability classification system increases, the yields and profits are difficult to obtain. A general description of soil classification, as defined by the NRCS, is provided in Table 3.9-1, Soil Capability Classification.

Table 3.9-1
Soil Capability Classification

Class	Definition
I	Soils have few limitations that restrict their use.
II	Soils have moderate limitations that reduce the choice of plants, or that require special conservation practices.
III	Soils have severe limitations that reduce the choice of plants, require conservation practices, or both.
IV	Soils have very severe limitations that reduce the choice of plants, require very careful management, or both.
V	Soils are not likely to erode but have other limitations; impractical to remove that limit their use largely to pasture or range, woodland, or wildlife habitat.
VI	Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat.
VIII	Soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife habitat, or water supply or to aesthetic purposes.

Source: USDA Soil Conservation Service, Soil Survey of Contra Costa County, 1977.

Storie Index Rating System

The Storie Index Rating system ranks soil characteristics according to their suitability for agriculture from Grade 1 soils (80 to 100 rating), which have few or no limitations for agricultural production to Grade 6 soils (less than 10), which are not suitable for agriculture. Under this system, soils deemed less than prime can function as prime soils when limitations such as poor drainage, slopes, or soil nutrient deficiencies are partially or entirely removed. The six grades, ranges in index rating, and definition of the grades, as defined by the NRCS, are provided below in Table 3.9-2, Storie Index Rating System.

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the U.S. Department of Agriculture, Soil Conservation Service (USDA-SCS). The intent of the USDA-SCS was to produce agriculture maps based on soil quality and land use across the nation. As part of the nationwide agricultural land use mapping effort, the USDA-SCS developed a series of definitions known as Land Inventory and Monitoring (LIM) criteria. The LIM criteria classified the land's suitability for agricultural production; suitability included both the physical and chemical characteristics of soils and the actual land use. Important Farmland Maps are derived from the USDA-SCS soil survey maps using the LIM criteria.

Table 3.9-2
Storie Index Rating System

Grade	Index Rating	Definition
1 – Excellent	80 through 100	Soils are well suited to intensive use for growing irrigated crops that are climatically suited to the region.
2 – Good	60 through 79	Soils are good agricultural soils, although they may not be so desirable as Grade 1 because of moderately coarse, coarse, or gravelly surface soil texture; somewhat less permeable subsoil; lower plant available water holding capacity, fair fertility; less well drained conditions, or slight to moderate flood hazards, all acting separately or in combination.
3 – Fair	40 through 59	Soils are only fairly well suited to general agriculture use and are limited in their use because of moderate slopes; moderate soils depths; less permeable subsoil; fine, moderately fine or gravelly surface soil textures; poor drainage; moderate flood hazards; or fair to poor fertility levels, all acting alone or in combination.
4 – Poor	20 through 39	Soils are poorly suited. They are severely limited in their agricultural potential because of shallow soil depths; less permeable subsoil; steeper slope; or more clayey or gravelly surface soil texture than Grade 3 soils, as well as poor drainage; greater flood hazards; hummocky micro-relief; salinity; or poor fertility levels, all acting alone or in combination.
5 – Very Poor	10 through 19	Soils are very poorly suited for agriculture, are seldom cultivated and are more commonly used for range, pasture, or woodland.
6 – Non-agriculture	Less and 10	Soils are not suited for agriculture at all due to very severe to extreme physical limitations, or because of urbanization.

Source: USDA Soil Conservation Service, Soil Survey of Contra Costa County, 1977.

Since 1980, the State of California has assisted the USDA-SCS with completing mapping in the state. The FMMP was created within the California Department of Conservation (DOC) to carry on the mapping activity on a continuing basis, and with a greater level of detail. The DOC applied a greater level of detail by modifying the LIM criteria for use in California. The LIM criteria in California utilizes the SCS and Storie Index Rating systems, but also considers physical conditions such as dependable water supply for agricultural production, soil temperature range, depth of the ground water table, flooding potential, rock fragment content and rooting depth.

Important Farmland Maps for California are compiled using the modified LIM criteria (as described above) and current land use information. The minimum mapping unit is 10 acres unless otherwise specified. Units of land smaller than 10 acres are incorporated into surrounding classifications. The Important Farmland Maps identify seven agriculture-related categories: prime farmland, farmland of statewide importance (statewide farmland), unique farmland, farmland of local importance

(local farmland), grazing land, urban and built-up land (urban land), and other land. Each is summarized below, based on *A Guide to Farmland Mapping and Monitoring Program (1998)*, prepared by the Department of Conservation.

Prime Farmland: Prime farmland is land with the best combination of physical and chemical features able to sustain the long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. The land must have been used for the production of irrigated crops at some time during the two update cycles (a cycle is equivalent to 2 years) prior to the mapping date of 1998 (or since 1994).

Statewide Farmland: Farmland of Statewide Importance is land similar to prime farmland, but with minor shortcomings, such as greater slopes or with less ability to hold and store moisture. The land must have been used for the production or irrigated crops at sometime during the two update cycles prior to the mapping date (or since 1994).

Unique Farmland: Unique farmland is land of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards, as found in some climatic zones in California. The land must have been cultivated at some time during the two update cycles prior to the mapping date (or since 1994).

Local Farmland: Farmland of local importance is land of importance to the local agricultural economy, as determined by each county's Board of Supervisors and a local advisory committee. Contra Costa County local farmland includes lands which do not qualify as Prime, Statewide, or Unique designation, but are currently irrigated crops or pasture or non-irrigated crops; lands that would meet the Prime or Statewide designation and have been improved for irrigation, but are now idle; and lands that currently support confined livestock, poultry operations and aquaculture.

Grazing Land: Grazing land is land on which the existing vegetation, whether grown naturally or through management, is suited to the grazing of livestock. The minimum mapping unit for this category is 40 acres.

Urban Land: Urban and built-up land is occupied with structures with a building density of at least one unit to one-half acre. Uses may include but are not limited to, residential, industrial, commercial, construction, institutional, public administration purposes, railroad yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures, and other development purposes. Highways, railroads, and other transportation facilities are mapped as part of this unit, if they are part of a surrounding urban area.

Other Land: Other land is land that is not included in any other mapping categories. The following uses are generally included: rural development, brush timber, government land, strip mines, borrow pits, and a variety of other rural land uses.

Project Site Characteristics

The Project site is currently cultivated for the growing of grapes used in the production of wine. As shown in Figures 2-5 through 2-7, grape vines extend from the Main Street frontage to a service road along the railroad right-of-way at the north edge of the site. As seen in aerial photograph Figure 2-3, additional properties to the north, northeast and south are also currently used for grape growing.

According to documentation available from local grape producers[1], Oakley was home to a number of Portuguese and Italian immigrants at the turn of the 20th Century who were farmers by trade, and who saw similarities between Oakley's climate and the Mediterranean climate they had left behind. Specifically, the City of Oakley experiences daytime heat as well as the evening cooling effect of the San Joaquin and Sacramento Rivers. These conditions, combined with sandy soils, have provided growing conditions which favor the three principal varieties of grapes produced on the 76.4-acre River Oaks Crossing Property: Mourvedre, Carignane, and Zinfandel. According to Cline Cellars, the older vines in Oakley (including those on the Project site) yield one to two tons of fruit per acre annually. Additionally, the prevalent sandy soils are reported to successfully inhibit the spread of Phylloxera, an aphid-like insect that has been blamed for the decline of grape vines elsewhere in the region. An estimated 600 acres of land in

Oakley remains in active grape production today, with nearly half of that managed by Cline Cellars.

Originally located off-site in Oakley, the Cline Cellars winery relocated in 1991 to the Carneros region of Sonoma County. Grapes produced on the 76.4-acre Project site are currently trucked to the company's Sonoma County winery for processing. Urban development has gradually moved closer to the site, including residential uses to the east, industrial uses to the north, and commercial uses to the south and west.

According to the Contra Costa County Soil Survey (See Appendix K of this DEIR), the Project site is made up of Dehli sand. The California Department of Conservation Farmland Mapping and Monitoring Program *Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, Contra Costa County*, lists Dehli sand as being a soil that meet the criteria for Farmland of Statewide Importance. Table 3.9-3 lists the characteristics of the Dehli sand as determined in the Contra Costa County Soil Survey (1973).

Table 3.9-3
On-Site Soil Capability Classification and Storie Index Rating

Soil Map Symbol and Name	Soil Capability Classification	Storie Index Rating	Grade
Dehli sand (DaC)	IIIs-4 - irrigated	49	3

Source: USDA Soil Conservation Service, Soil Survey of Contra Costa County, 1973.

Regulatory Environment

The subject property is currently zoned Heavy Industrial and classified in the Oakley 2020 General Plan for Commercial development. Continued agricultural production on the narrow, mile-long site will be further constrained by local, state and federal standards for use of pesticides and control of dust and related emissions from agricultural production activities.

Section 3.5 of the Oakley 2020 General Plan EIR discusses the loss of agricultural resources throughout the community, at a programmatic level, as follows:

While there are remnant orchards and vineyards within Oakley, such uses are constrained by a patchwork of urban uses. Based upon public comments by landowners and farmers within Oakley, the viability of commercial agriculture within Oakley has been compromised by the lack of large contiguous blocks of agriculture and urban encroachment.

The General Plan EIR analysis identifies the conversion of prime farmland, unique farmland, or farmland of statewide importance to non-agricultural uses as a potentially significant effect associated with implementation of the Oakley 2020

General Plan. In evaluating this effect, the General Plan EIR provides the following background:

> Oakley has historically been an agricultural community, with a wide variety of agricultural crops. While much of the land used for agriculture has been developed into urban uses, there are remaining private parcels that continue in agricultural production. These agricultural areas help to preserve the traditional rural character of the community, maintain open space, and reduce congestion within the City. While the City recognizes the historic role of agriculture within the Oakley community and supports continued agriculture, the transition from agriculture to urban uses limits the potential for large-scale commercial agriculture within Oakley.
>
> In order to address the increasing concern over the loss of prime agricultural lands, Contra Costa County adopted a program to allow for the transfer or purchase of development credits (TDR/PDR). Other strategies for the continued viability of agricultural pursuits included preservation agreements with the County, granting conservation easements, direct purchase, leasebacks, tax benefits for agriculture open space land, purchase or transfer of development rights, clustering development, establishment of an agricultural soils trust fund, and agricultural mitigation fees or land dedication (in-lieu-fee). In response to the proliferation of five-acre "ranchettes", the County adopted a Resolution establishing rural residential development of ranchettes as an inappropriate use of prime agricultural land. Finally, the Contra Costa County General Plan incorporates an Urban Limit Line (ULL) and has established a minimum 40-acre lot size for prime agricultural lands outside the Urban Limit Line. The entire Oakley Planning Area is located inside the County ULL and was, therefore, determined generally for urban development.

The adopted General Plan Policies and Programs were established for the purpose of preserving a buffer between urban development and agricultural land. The analysis in the General Plan notes that pursuant to Contra Costa County General Plan policies, sixty-five percent of the County is protected as undeveloped, and the Oakley Planning Area falls in the thirty-five percent that is designated for development. The remaining agricultural resources within the City of Oakley were found to be fragmented, and commercial agriculture was found to be substantially compromised. The certified Oakley 2020 General Plan was found to accommodate agriculture, while providing for balanced needs of the City. The analysis concluded that future development consistent with the Oakley 2020 General Plan would have a less-than-significant effect on agricultural resources, subject to implementation of a specific set of policies.

<u>City of Oakley General Plan</u>

The following applicable goals and policies are from the Oakley 2020 General Plan Open Space and Conservation Element:

Agriculture

Goal 6.1 Allow agriculture to continue as a viable use of land that reflects the community's origins and minimizes conflicts between agricultural and urban uses.

Policy 6.1.1 Participate in regional programs that promote the long-term viability of agricultural operations within the City.

Policy 6.1.2 Reduce the negative impacts resulting from urban uses and neighboring agricultural uses in close proximity.

Policy 6.1.3 Encourage the promotion and marketing of locally grown products.

Policy 6.1.4 Incorporate parks, open space and trails between urban and agricultural uses to provide buffer and transition between uses.

Implementation Program 6.1.A Identify and map those properties that include prime productive agricultural soils (Class I and II capability, according to the U.S. Soil Conservation Service) for use in the review of development applications.

Implementation Program 6.1.B Encourage consolidated development; with appropriate land use buffers of parks, open space and trails, for proposed major subdivisions adjacent to prime agricultural lands.

Implementation Program 6.1.C Modify the land use classifications and allowed use provisions and development standards to reflect current agricultural uses and land use compatibility.

Implementation Program 6.1.D	Require adequate setbacks for any non-agricultural structures adjacent to cultivated agriculture.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines and the City of Oakley General Plan, the Project would have a significant effect on the environment if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use in a manner that is not consistent with the General Plan; or
- Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

Impacts and Mitigation Measures

Basis for Impacts

The certified Oakley 2020 General Plan notes that Oakley has historically been an agricultural community, with a wide variety of agricultural crops. While much of the land used for agriculture has been developed into urban uses, there are remaining private parcels that continue in agricultural production. The agricultural areas help to preserve the traditional rural character of the community, maintain open space, and reduce congestion within the City. While the General Plan recognizes the historic role of agriculture within the Oakley community and supports continued agriculture, the transition from agriculture to urban uses limits the potential for large-scale commercial agriculture within Oakley. Consequently, General Plan Goal 6.1 states the following:

> Allow agriculture to continue as a viable use of land that reflects the community's origins and minimizes conflicts between agricultural and urban uses.

The Land Use Element policy calling for development of the Project site with commercial uses is consistent with this recognition of limited remaining usefulness of the site for large-scale agricultural production.

Analysis of Project Impacts

The proposed Specific Plan Project remains subject to compliance with all the General Plan policies, including those referenced with respect to minimization of agricultural resource impacts. The Specific Plan's conformity with these policies is discussed in Impact AR-1, Loss of Agricultural Land.

The approval of the proposed Specific Plan Project and the eventual buildout of the 76.4-acre site was found to result in the following impacts:

Impact AR-1 - Loss of Agricultural Land

The subject property is composed of Class II Delhi sand, described by the U.S. Natural Resources Conservation Service as "excessively drained soils" where runoff is slow or very slow. In addition, The California Farmland Mapping and Monitoring Program classifies Class II Delhi sand soil as Farmland of Statewide Importance. Used as a vineyard, the Project site is increasingly constrained for continued viable agricultural use because of encroaching commercial and industrial development associated with the development of the City of Oakley.

The certified Oakley 2020 General Plan EIR states that the General Plan accommodates agriculture while providing the balanced needs of the City (General Plan DEIR, p.3-77). The General Plan states that the City of Oakley, through the General Plan, is primarily completing the urbanization of the area as originally intended by Contra Costa County. Sixty-five (65) percent of the County is protected as undeveloped. The Oakley Planning Area falls in the 35 percent that is designated for development.

Agricultural resources are currently fragmented and, as a result, commercial agriculture is substantially compromised. The Oakley 2020 General Plan EIR found that the incremental environmental effect of the development of the City consistent with the General Plan would have a less-than-significant impact on agriculture, which includes the Project site. The General Plan includes four policies and four implementation programs that relate to agricultural resources. The General Plan EIR found that with the implementation of these policies, the loss of agricultural land would be a less-than-significant impact.

The implementation of Policies 6.1.1 through 6.1.3 and Program 6.1.A, found in the Open Space and Conservation Element of the General Plan, would reduce the impact of converting the agricultural land on the Project site to urban uses. Policy 6.1.1 encourages participation in regional programs that promote the long-term viability of agricultural operations within the City. The Project would not interfere with this policy because future commercial development within the Specific Plan boundaries would ultimately provide the City with additional financial resources to support such programs. The City is currently exploring opportunities for establishment of an agricultural history museum within the

community, and a mitigation measure has been included in this DEIR, which requires a funding contribution toward implementation of the agricultural history museum (See Mitigation Measure AR-2(b)). The City also participates in the East Contra Costa Habitat Conservation Plan (HCP)[2], which preserves agricultural land that also serves as biological habitat. This participation in a regional program and the Project's contribution to the HCP, as outlined in Mitigation Measures BR-3(e) and AR-2(a), furthers the Project's consistency with Policy 6.1.1. In addition, the Project would comply with Policy 6.1.2, which requires the reduction of negative impacts resulting from urban uses and neighboring agricultural uses in close proximity, by incorporating a substantial buffer along the site's northerly boundary, consisting of mounding and landscaping along the railroad right-of-way. This buffer would serve to effectively separate planned commercial land uses from the ongoing production of grapes and other crops to the northeast. Policy 6.1.3, which encourages the promotion and marketing of locally grown agricultural products, would be unaffected by the proposed Specific Plan. The Project would also comply with Program 6.1.A, which requires the identification and mapping of properties that include prime productive agricultural soils (Class I and II capability according to the U.S. Soil Conservation Service). Considering the General Plan policies that are designed to mitigate for the impact on the loss of agricultural resources, the evaluation in this EIR finds the proposed Project would be consistent. However, it should be noted that the overall determination of the Project's consistency with the General Plan rests with the City Council.

The development associated with the River Oaks Crossing Specific Plan would be consistent with the land use designations for the proposed Project site as determined by the City of Oakley General Plan. Therefore, in accordance with the findings of the certified Oakley 2020 General Plan EIR, the loss of Farmland of Statewide Importance caused by the Project would be considered a ***less-than-significant*** impact because the Project would be required to implement the aforementioned General Plan policies and programs that are designed to preserve the agricultural heritage of Oakley.

Impact AR-2 - Loss of Old Growth Vineyard

Development of the subject property would result in the loss of grape production on the 76.4-acre site. As described above, the conversion of agricultural land to urban uses was analyzed in the Oakley 2020 General Plan EIR, and the effect was determined to be less-than-significant based on implementation of all available mitigation measures. This Specific Plan Project is consistent with the General Plan; the analysis presented in the General Plan EIR, and the adopted mitigation measures (for a discussion of the proposed Project's consistency with vineyard-related mitigation included in the City of Oakley Redevelopment Plan, see Impact LU-2).

However, the particular plants cultivated on this site include several varieties of grape-vines over 80 years in age. The Oakley General Plan Land Use Element states the following:

> Similar to Oakley's connection to the Delta, agriculture is a fundamental component of the community's character. Historically, agriculture has been the primary economic activity in and around Oakley. At this time, the community is transitioning to a more urban setting and large-scale agriculture is becoming a less prevalent use throughout Oakley. However, the agricultural heritage of Oakley remains strong and is evident in the numerous remaining orchards and vineyards in town, as well as the strong equestrian interest of Oakley residents. As new development occurs, the City will seek to protect the varied remaining agricultural activities of Oakley and to maintain the cultural connection to the community's agricultural heritage through design standards, development project reviews, construction of community entry monuments and the design of public facilities serving Oakley residents.

Cline Vineyards, the vineyard that currently oversees the operations on the proposed Project site reports the following regarding the status of the current vineyard uses on-site: "Grapes were planted by Italian and Portuguese immigrants in the sandy, phylloxera-resistant soils of Oakley, California more than 100 years ago. These ancient, dry-farmed vineyards consistently produce fruit of stunning concentration." Additionally, the grower also notes that "Today, Zinfandel, Carignane and Mourvèdre produced from these vines are some of the most unique and historic wines made in California - the coming together of the climate, the soil and the landscape are the epitome of Oakley terroir."

In summary, because of their rarity and unique cultural value to the community, loss of these vineyards may result in a ***significant impact***. The Project shall include the implementation of the following supplemental measures to minimize effects on the loss of old vines and to promote continued local agricultural production within the East Contra Costa County area; however, the implementation of these mitigation measures would not be able to fully mitigate the loss of this historic vineyard site. Therefore, this impact will remain ***significant and unavoidable***.

Mitigation Measure(s):

AR-2(a) *The Project's effects on agricultural resources shall be further reduced by contributing to the acquisition and permanent protection of property for habitat protection, including farming operations within East Contra Costa County through contribution to the East Contra Costa County HCP. No permit for development pursuant to the approval of the Development Plan shall be issued until the East Contra Costa County HCP fee, as adopted by the City of Oakley, has been paid.*

AR-2(b) *A funding contribution of $50,000 shall be made to the City of Oakley concurrently with the issuance of initial permits for Project construction, to be used for the establishment of vineyard-related informational presentations at an Agricultural History Museum within the City.*

Cumulative Impacts

As discussed above, the proposed Project would be consistent with the General Plan land use designations for the proposed Project site. Because the City of Oakley 2020 General Plan EIR found that the implementation of the General Plan would not have a significant impact to the loss of agricultural land, the development of the proposed Project, which is consistent with the General Plan's policies and plans regarding agricultural land, would not be expected to result in any new cumulative impacts.

Additionally, the development of the proposed Project would result in the loss of existing old growth vineyards, as discussed in Impact AR-2. Though the Project-level analysis found this impact to be significant and unavoidable, under the cumulative condition, the loss of the vineyards located on the proposed Project site were not found to be a significant impact. As noted above, the Oakley area current supports over 600 acres of similar old-growth vineyard locations. Therefore, though the development of the proposed Project site would result in the loss of a vineyard on the approximately 72-acre site, the analysis associated with this DEIR found that the loss of the vineyards on the proposed Project site would not be cumulatively considerable and would not result in a significant cumulative impact to old-growth vineyards.

Therefore, because the development of the proposed Project is consistent with the buildout of the City of Oakley General Plan, and because the City of Oakley General Plan EIR determined that the loss of agricultural land as a result of the buildout of the General Plan would be a less-than-significant impact, the proposed Project would result in a ***less-than-significant*** cumulative impact to agricultural resources.

Endnotes

[1] Background information on grape growing and wine production history obtained via Cline Cellars, Sonoma, California.
[2] East Contra Costa County Habitat Conservation Plan, August 6, 2007.

3.10 GEOLOGY AND SOILS (GS)

This section analyzes the effects of the proposed Project upon soils and geology within the Project area. Information in this chapter is drawn from the National Resources Conservation Service Web Soil Survey (See Appendix K) and the City of Oakley General Plan and General Plan EIR.

Environmental Setting

The following background setting information focuses on the site seismicity, soil conditions, groundwater, expansive soils, and liquefaction, as well as the general conditions and expansiveness of the on-site soils.

Existing Conditions

The site is located at the margin of the Great Valley Geomorphic Province and the Coast Ranges Geomorphic Province. The Great Valley Geomorphic Province consists of an elongated structural trough that has been filled with a sequence of sedimentary deposits ranging from Jurassic to recent in age. Geophysical evidence suggests that the Great Valley is underlain at depth with granitic rocks of the Sierra Nevada Province. The adjacent Coast Ranges Geomorphic Province is underlain at depth by Franciscan Assemblage rocks.

The San Joaquin/Sacramento Delta lies at the junction of the Sacramento and San Joaquin rivers, the two major waterways that drain the Central Valley. The Delta area currently consists of a braided pattern of brackish to freshwater tidally-influenced channels and sloughs encircling a series of low-lying islands.

The Project site is currently cultivated with grapes. Development of this relatively flat site would result in site clearing, grading operations and construction of commercial buildings and site improvements in accordance with the proposed Specific Plan Project.

Site Seismicity

The Project is located in an area of moderate seismicity. Faults, active or otherwise, are not known to surface on or very close to the Project site. In addition, the site does not include any areas mapped within any Earthquake Fault Zone. The closest active strike-slip fault with surface expression, as identified by the California Geological Survey, is the Concord fault located approximately 19 miles to the west. Other nearby active strike-slip faults include the Calaveras fault 22 miles to the southwest, the Hayward fault 32 miles to the west, and the San Andreas fault 50 miles to the west.

The Midland fault was mapped by Jennings (1994) approximately 0.5 miles east of the site and by Bortugno (1991) approximately two miles east of the site. An

unnamed queried fault, assumed to be the Midland fault, is also mapped by the City of Oakley (*Oakley General Plan 2020*) at approximately one mile east of the site. However, evidence does not exist to support that Crane's postulated concealed splay of the Midland fault has a risk of surface rupture on the subject site. The Midland fault is thought to be a part of the Coast Ranges-Sierran Block (CRSB) fault system.

Because of the presence of active faults in the region, the area is considered seismically active. Numerous small earthquakes occur every year in the region, and large (Greater than Magnitude 7) earthquakes have been recorded and can be expected to occur in the future.

A significant seismic source listed is the Coast Ranges-Sierran Block (CRSB) boundary, mapped along the west side of the Central Valley. As the name implies, the Sierran Block is the approximate boundary between the actively uplifting east side of the Coast Range crustal block and the west side of the Sierran crustal block. The thick veneer of sedimentary rock that fills the Central Valley covers the west side of the Sierran block. The boundary between the two blocks is thought to be a zone of tectonic crustal shortening and compression. The compression is structurally accommodated by a series of generally west-dipping buried or “blind” thrust faults, along which Coast Range rocks have been thrust eastward over Central Valley sediments. According to Wakabayashi and Smith (1994), the CRSB can be divided into a series of segments that are thought to be seismically independent. The local segments of the CRSB, according to the California Geological Survey (Peterson, et al., 1996) pass through the area in the approximate vicinity of the site. Because the CRSB thrust faults are thought to exist entirely in the subsurface, the exact location of the boundary, that is a “surface fault trace,” cannot be defined. However, an earthquake on the local segment of the CRSB could occur in the subsurface below or a few miles east or west of the site.

The historic seismicity of the eastern Coast Ranges includes a number of earthquakes in the Magnitude (M) 5.0 to M 6.8 range, including the M 6.3 1889 Antioch-Collinsville earthquake, the M 6.4 to 6.8 1892 Vacaville-Winters earthquakes, and the M 6.0 to 6.5 1983 Coalinga earthquakes. Based on historic seismicity and segment lengths, the CRSB is considered generally capable of producing M 6.0 to 6.8 earthquakes. The CRSB faults are not known to extend to the ground surface and the State of California has not defined Earthquake Fault Hazard Zones around the postulated traces. Therefore, the actual location of a possible earthquake epicenter in the CRSB cannot be easily estimated, so the maximum ground shaking levels at the site could vary as described above. However, the recurrence interval for the local segments of the CRSB is believed to be in the range of 500 to 650 years (Peterson, et al. 1996), much longer than for the nearby strike-slip faults (commonly 150 to 250 years).

Soil Conditions

The site is mapped by the Soil Survey of Contra Costa County (1977). In general, the Project is underlain by variable layers of soft to stiff clayey material and loose to very dense sandy material to the maximum depth explored of 50 feet. The soils across the Project site are Dehli Sand (DaC). Delhi Sand is considered Farmland of Statewide Importance by the U.S.D.A Natural Resources Conservation Service and is characterized by 2 to 9 percent slopes. Runoff is slow or very slow, and the hazards of soil blowing and water erosion are slight where the soil is tilled and exposed.

Liquefaction

The most significant geotechnical issue to be considered in the design of the Project is the presence of liquefiable dune sand near the ground surface across most of the Project site. During earthquakes, ground shaking may cause a loss of strength in cohesionless saturated soils. This process is called liquefaction and occurs most commonly in loose sands associated with a high water table. In general, variable layers of potentially liquefiable material are expected in the upper 30 feet of the Project site. Below a depth of 30 feet, the sandy materials are expected to be dense and generally not liquefiable.

Regulatory Environment

Existing policies, laws and regulations that would apply to the proposed Project are summarized below.

State Regulations

California Building Standards Code / Uniform Building Code

Site development and design are regulated in the State of California by the California Building Standards Code (CBC), based on the federal Uniform Building Code (UBC) and suited to the unique sensitivity of the State's geology and faultlines. CBC and UBC regulations must be complied with in consideration of expansive soils, drainage, erosion, earthquake resistance, and required safety measures during on-site development. Geologic and soils conditions would also determine the proper installation of underground communications and utility lines.

Local Regulations

City of Oakley General Plan

Goals, policies, laws, and regulations established in the Oakley 2020 General Plan, are listed below as applicable:

Health and Safety Element

Geology and Seismic Hazards

Goal 8.1 Protect human life, reduce the potential for serious injuries, and minimize the risk of property losses from the effects of earthquakes, including fault rupture, groundshaking, and liquefaction - induced ground failure.

Policy 8.1.1 Recognize that a severe earthquake hazard exists and reflect this recognition in the City's development review and other programs.

Policy 8.1.2 Include a thorough evaluation of geologic-seismic and soils conditions at risk in all significant land use decisions (General Plan amendment, rezoning, etc., affecting 10 acres or more).

Policy 8.1.3 Require the design of structures for human occupancy for satisfactory performance under earthquake conditions.

Policy 8.1.4 Prohibit the erection of critical structures and facilities whose loss would substantially affect the public safety or the provision of needed services, in areas where there is a high risk of severe damage in the event of an earthquake.

Policy 8.1.6 Prohibit construction of structures for human occupancy, and structures whose loss would affect the public safety or the provision of needed services, within 50 feet of known active faults as referenced in the Alquist - Priolo Act.

Policy 8.1.7 In areas where active or inactive earthquake faults have been identified, the location and/or design of any proposed buildings, facilities, or other development shall be modified to mitigate possible danger from fault rupture or creep.

Policy 8.1.8 To the extent practicable, the construction of critical facilities, structures involving high occupancies, and public facilities should not be sited in areas identified as, or underlain by

deposits classified as, having a high liquefaction potential.

Policy 8.1.9 Any structures permitted in areas of high liquefaction potential shall be sited, designed and constructed to minimize the dangers from damage due to earthquake-induced liquefaction. Approval of public and private development projects shall be contingent on geologic and engineering studies which: 1) define and delineate potentially hazardous geologic and/or soils conditions, 2) recommend means of mitigating these adverse conditions; and 3) provide implementation of the mitigation measures.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, an impact on the geology of the Project site would be considered significant if any of the following conditions would potentially result from the proposed Project's implementation:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist - Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault;
  - Strong seismic groundshaking; or
  - Seismic-related ground failure, including liquefaction;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse; or
- Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code.

Impacts and Mitigation Measures

The following discussion of impacts is based on implementation of the proposed River Oaks Crossing Specific Plan Project.

Basis for Impacts

The conclusions included in this chapter are tiered from the conclusions reached in the City of Oakley General Plan EIR and based upon the National Resources Conservation Service Web Soil Survey (See Appendix K) for the Project area.

Analysis of Project Impacts

Impact GS-1 - Expose people or structures to potential substantial adverse effects, including groundshaking

Due to the location of the proposed Project, and the moderate chance that the proposed Project area could be affected by groundshaking activities, new structures in the Project area would be potentially impacted by ground shaking actions. ***Potentially significant*** impacts related to groundshaking and resultant structural damage could be mitigated to a ***less-than-significant*** level through implementation of the following specific mitigation measures:

Mitigation Measure(s):

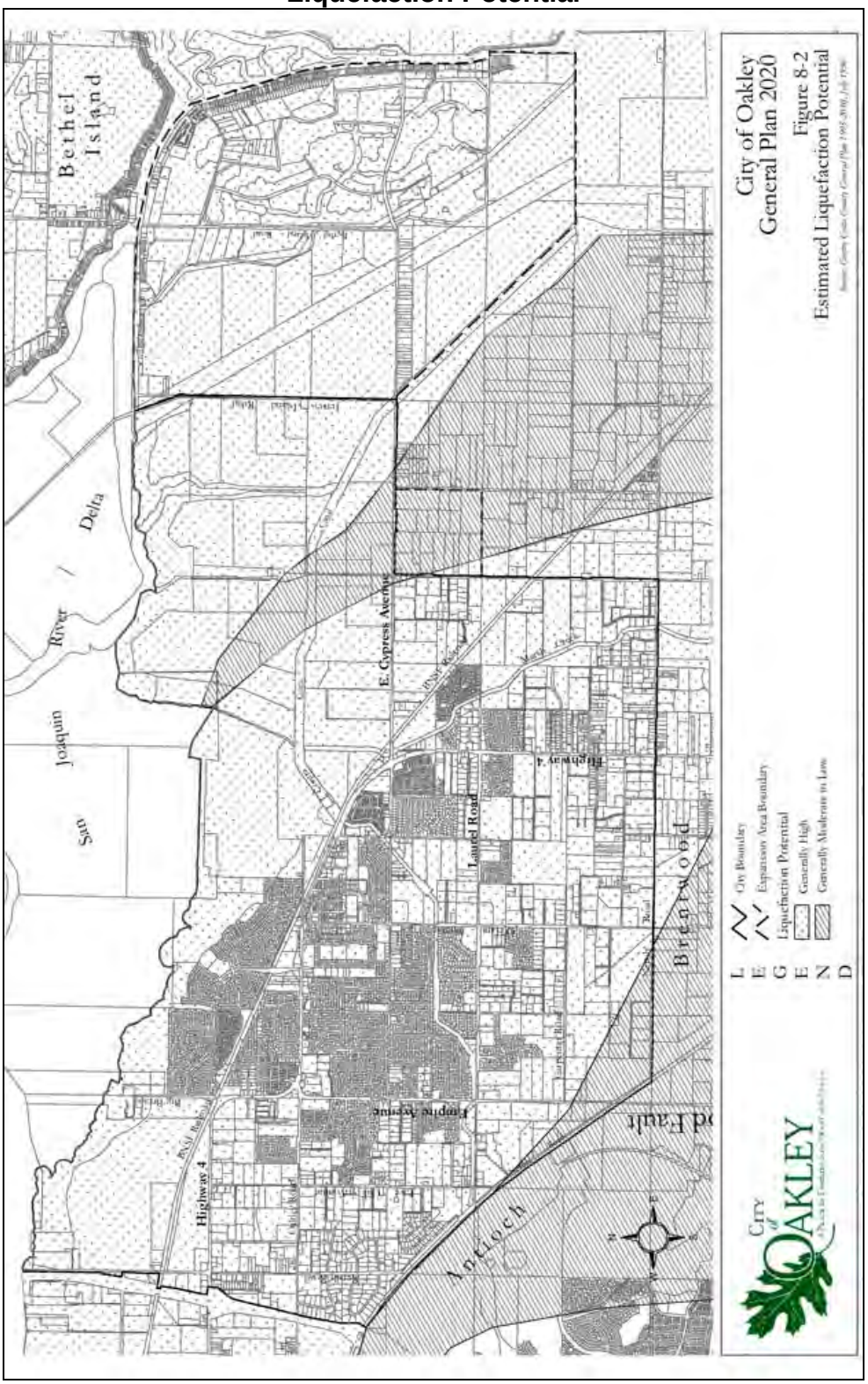
GS-1(a) *Construction of the proposed Project shall conform to the seismic requirements stipulated in the current Uniform Building Code (UBC, 1997) for Seismic Zone 4, the zone of highest seismic risk.*

GS-1(b) *A detailed geotechnical engineering design report for proposed building sites shall be submitted to the City Engineer to ensure sufficient foundation stability prior to issuance of building permits.*

Impact GS-2 - Substantial risk of liquefaction

As identified in Figure 3.10-1 (General Plan Figure 8-2, Estimated Liquefaction Potential, page 8-9 of Oakley 2020 General Plan), much of Oakley is subject to a high liquefaction potential. The Project site is located in an area identified as subject to generally high liquefaction potential. Therefore, a ***potentially significant*** impact could result to structural support and ground surface. In order to reduce this potential for liquefaction to a ***less-than-significant*** level, the following mitigation measure shall be implemented.

Figure 3.10-1
Liquefaction Potential



Source: Oakley 2020 General Plan

Mitigation Measure(s):

GS-2 *Prior to issuance of a grading permit, the applicant/ developer shall incorporate the recommendations of a design-level geotechnical report into the improvement plans. The following measures include but are not limited to, the options available to reduce site liquefaction potential and/or adverse effects to structures located above potentially liquefiable soils. Once final grading plans are designed, the Project's geotechnical engineers shall determine the appropriate methods of mitigating the effects of liquefaction. These methods may include, but are not limited to the following measures:*

- *Remove and replace potentially liquefiable soils;*
- *Strengthen foundations (e.g., post-tensioned slab, reinforced mat or grid foundation, or other similar system) to resist excessive differential settlement associated with seismically-induced liquefaction;*
- *Support the proposed struts on an engineered fill pad in order to reduce differential settlement resulting from seismically-induced liquefaction and post-seismic pore pressure dissipation; and*
- *Densify potentially liquefiable soils with an in situ ground improvement technique such as deep dynamic compaction, vibro-compaction, vibro-replacement, compaction grouting, or other similar methods.*

The specific design requirements, as identified by the Project geotechnical engineer and approved by the City Engineer, shall be incorporated into all construction documents.

Impact GS-3 - Erosion and Sedimentation

During construction within the Project area, topsoil would be moved and graded. The removal and grading of topsoil would lead to potential erosion of the Project site soils because disturbed soil would not have as much connectivity to the ground a undisturbed soil. The disturbed soils are more likely to undergo erosion from a variety of sources, such as wind and water. Erosion and sedimentation have the potential to significantly pollute water sources and undermine foundations. This ***potentially significant*** impact shall be mitigated to a ***less-than-significant*** level through implementation of the following mitigation measure.

Mitigation Measure(s):

GS-3 *Prior to issuance of a grading permit, the Project applicant shall submit, for the review and approval of the City Engineer, an erosion control plan that utilizes standard construction practices to limit the erosion effects during construction of the proposed Project. Measures could include, but are not limited to:*

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

Impact GS-4 - Expansive soils that may result in shrink/swell conditions

The potential for uplifting forces caused by swelling of clay content soils may induce heaving, cracking and breakup of both building foundations and slabs-on-grade. This ***potentially significant*** impact shall be reduced to a ***less-than-significant*** level through implementation of the following mitigation measure.

Mitigation Measure(s):

GS-4 *Prior to approval of improvement plans, the Project developer shall conduct a design-level geotechnical study, which shall specifically address whether expansive soils are present in the development area and include measures to address these soils where they occur. The recommendations from the geotechnical study shall be incorporated into the design of roadway and infrastructure improvements as well as foundation and building design for the review and approval of the City Engineer. Improvements, as directed by the soils engineer, may involve replacing the material under foundations and slabs-on-grade with "non-expansive" material, or modifying the expansive soil by compaction control, pre-wetting and the installation of moisture barriers.*

Cumulative Impacts

The proposed Project would increase the number of people and structures that could be exposed to potential effects related to seismic hazards. Development of the proposed Project would also increase the number of structures that could be subject to the effects of shallow depth to rock or expansive soils, and site preparation would result in temporary and permanent topographic changes that could affect erosion rates or patterns. However, potentially adverse environmental effects associated with seismic hazards, as well as those associated with geologic or soils constraints, topographic alteration, and erosion, are usually site-specific and generally would not combine with similar effects that could occur with other projects in Oakley. Furthermore, all projects would be required to comply with the UBC and other applicable safety regulations. Consequently, the proposed Project would generally not be affected by, nor would the Project affect, other development approved by the City of Oakley. Therefore, the impact would be considered ***less-than-significant***.

3.11 HYDROLOGY & WATER QUALITY (HWQ)

Environmental Setting

This chapter of the EIR describes existing drainage and water resources for the Project site and the region, and evaluates potential impacts of the Project with respect to flooding, surface water resources and groundwater resources. It should be noted that the discussion of water supply is provided in Section 3.13, Utilities and Service Systems. The hydrology and water quality impact analysis is based on information drawn from the *Oakley 2020 General Plan*[1] and associated EIR[2], and the *Oakley 2020 General Plan Background Report* [3].

Existing Conditions

The River Oaks Crossing Property extends east from Bridgehead Road nearly one mile, and is bordered along its entire northerly property line by the Burlington Northern & Santa Fe (BNSF) Railroad line. The site has a triangular shape, with increasing site depth moving from east (Big Break Road end) to west (Bridgehead Road end). Buildings or other structures do not currently exist on the site and the primary land use on the proposed Project site is grape cultivation, which currently covers approximately 95 percent of the site.

As shown in Figure 2-4, Site Topography, the Project site is relatively flat, draining to the northeast and northwest from a localized high point near the center of the site. Soils are currently stabilized by the presence of grape vines, which would be removed as part of pre-construction site clearing activities.

Stormwater and Wastewater Discharge

The Project site is located within the Contra Costa County Flood Control and Water Conservation District (CCCFCWCD), and within drainage area 29H. A storm drain line that flows easterly within the Main Street right-of-way across the frontage of the River Oaks Crossing Property to a point approximately 1,500 feet west of the southeast property corner currently serves this area. At this point the line continues in a northeasterly direction through an easement across the River Oaks Crossing Property and under the railroad right-of-way, toward an eventual outfall leading into the San Joaquin River. The on-site portion of the existing storm drain line crosses the site between planned Secondary Retail building Envelopes D and E.

Precipitation

Precipitation in the Oakley Planning Area is fairly light, with almost drought-like conditions during the summer months. Average rainfall data could not be found for the Oakley Planning Area, but was found for the City of Antioch, and is assumed representative of what the average rainfall would be in Oakley. The City

of Antioch, just west of Oakley, receives over 13 inches of rain per year. Over 80 percent of this precipitation occurs during the winter months of November through March. The area gets less than 0.2 inches of rain during the summer months of June through August.

Surface Water Hydrology and Quality

San Joaquin Delta, Contra Costa Canal, and Marsh Creek are the main surface hydrological features in Oakley. The San Joaquin Delta provides drinking water to two out of three California residents, an irrigation supply to the nation's most productive farming economy, and is the underpinning of the state's industrial sector. Water drawn directly from or upstream of the Delta is delivered to cities from Redding to San Diego. The Delta is also a premiere environmental resource, providing habitat for 120 different species of fish, including a migration corridor for several runs of salmon, and a wintering haven for a significant number of birds on the Pacific Flyway. While great strides have been made in treating and reducing wastewater discharges into the estuary, pollution problems persist. Storms wash a variety of urban products into drainage channels that often end up in the Delta, including pesticides from lawns, motor oil, solvents, and copper from brake pads.

The Contra Costa Canal is part of the Central Valley Project. Water for the canal is diverted from the Delta at Rock Slough, five miles east of Oakley. The four miles length of Canal from Rock Slough to Pumping Plant #1 is contained in earthen levees. The canal drains through Oakley from east to west starting at the southwestern corner of the primary Sphere of Influence area and ending at the intersection of Live Oak Drive and Neroly Road before heading into Antioch. The canal is all above ground.

Marsh Creek flows through Oakley from the southwest portion of Oakley, through agricultural land and some residential land, then north across undeveloped land eventually dumping into the Delta at Dutch Slough.

Groundwater Resources – Wells

Groundwater is a source of water in the County, mostly in rural areas. Several small public and private water companies extract underground water through wells and convey it to nearby customers. The majority of these are in the East County areas, including Bethel Island, Knightsen, Byron, and Discovery Bay. Whereas the City of Oakley does not receive any groundwater from wells, there are many private wells in the General Plan Area. Sources not served by DWD that use water wells are located primarily south of Laurel Road and east of Main Street.

Wells are primary water sources in some rural areas, and could be a source of water for Oakley and the Sphere of Influence areas. However, the feasibility of

utilizing well water is dependent on the quality and quantity of the groundwater supplies. A major problem with groundwater quality is the concentration of nitrates in the water supply.

Flood Hazards

Substantial areas within Contra Costa County are subject to flooding. The Federal Emergency Management Agency (FEMA) indicates a majority of the County's creeks and shoreline areas lie within the 100-year floodplain. Areas deemed to be within the 100-year floodplain are subject to flooding during a storm likely to occur once every one hundred years. The proposed Project site is not in a designated floodplain area as mapped by the Federal Emergency Management Agency (FEMA, 2002).

Regulatory Environment

Federal

Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency (FEMA) operates the National Flood Insurance Program, which issues maps of Special Flood Hazard Areas (SFHA), based on water surface elevations of the one percent (100-year) flood event. For any project that would result in a change to the designated 100-year floodplain, a Conditional Letter of Map Revision (CLOMR) is required to be issued by FEMA prior to the initiation of any construction activities. FEMA issues CLOMRs to modify the elevations and/or boundaries of the Special Flood Hazard Areas (based on the 100-year flood event). FEMA requires assurance by the participating community that minimum floodplain management requirements are complied with, including minimum floor elevations above the "base flood," existing lands and structures or proposed structures are "reasonably safe from flooding," and that all supporting analysis and documentation used to make that determination is on file and available upon request. The supporting hydraulic analysis and documentation must include new topographic data and certification by a registered professional engineer or licensed land surveyor.

The floodplain areas are identified on the Flood Insurance Rate Maps (FIRMs) published by FEMA.

National Pollutant Discharge Elimination System (NPDES)

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the federal Clean Water Act (CWA) to regulate municipal and industrial discharges to surface waters of the U.S. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements

regarding NPDES permits. Section 307 of the CWA describes the factors that EPA must consider in setting effluent limits for priority pollutants.

Nonpoint sources are diffuse and originate over a wide area rather than from a definable point. Nonpoint pollution often enters receiving water in the form of surface runoff, but is not conveyed by way of pipelines or discrete conveyances. As defined in the federal regulations, such non-point sources are generally exempt from federal NPDES permit program requirements.

However, two types of nonpoint source discharges are controlled by the NPDES program: nonpoint source discharge caused by general construction activities, and the general quality of stormwater in municipal stormwater systems. The 1987 amendments to the CWA directed the federal EPA to implement the stormwater program in two phases. Phase I addressed discharges from large (population 250,000 or above) and medium (population 100,000 to 250,000) municipalities and certain industrial activities. Phase II addresses all other discharges defined by EPA that are not included in Phase I.

U. S. Army Corps of Engineers: Waters of the United States

Areas meeting the regulatory definition of "Waters of the United States" are subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE). The USACE, under provisions of Section 404 of the Clean Water Act (1972), has jurisdiction over "Waters of the United States" (jurisdictional waters). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sand flats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U. S.," tributaries of waters otherwise defined as "Waters of the U. S.," the territorial seas, and wetlands adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3).

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill material into such waters must be in compliance with permit requirements of the USACE. USACE permits are not effective in the absence of State water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board (SWRCB) is the State agency charged with implementing water quality certification in California.

<u>State</u>

Water Quality – State Water Resources Control Board

The State Water Resources Control Board (SWRCB) manages all water rights and water quality issues in California under the terms of the Porter-Cologne Water Quality Control Act (1969). The California Department of Health Services

(DHS) has been granted primary enforcement responsibility for the Safe Drinking Water Act (SDWA.) Title 22 of the California Administrative Code establishes DHS authority and stipulates drinking water quality and monitoring standards. These standards are equal to, or more stringent than, the federal standards.

Local

Contra Costa County Flood Control and Water Conservation District

The design of the drainage system for the River Oaks Crossing Specific Plan Project area is based on the Contra Costa County Flood Control Standards manual developed by the Contra Costa Water District. The Contra Costa County Flood Control and Water Conservation District standards provide guidance to the development of flood control measures throughout the County, particularly for stormwater drainage and sedimentation issues regarding new development.

City of Oakley General Plan

The following lists the goals and policies related to hydrology and water quality for the Project site, as identified in the Oakley 2020 General Plan Growth Management Element:

Drainage Facilities

Goal 4.10 Protect persons and property from the damaging impacts of flooding.

Policy 4.10.1 Work cooperatively with Contra Costa County Flood Control and Water Conservation District (CFCWCD) to ensure and enhance flood protection in the City of Oakley.

Policy 4.10.2 Pursue and achieve compliance with all regional, State, and Federal regulations related to flood control, drainage, and water quality.

Policy 4.10.3 Recognize the unique flooding constraints of the areas north and east of the Contra Costa Canal.

Policy 4.10.4 Pursue responsible and adequate financing for implementation of the Drainage Plan.

Policy 4.10.5 Improve and expand the functionality of Marsh Creek as a major drainage corridor.

Policy 4.10.6 Develop new drainage facilities and/or improvements to existing facilities to provide additional recreational or environmental benefit, where possible.

Policy 4.10.7 Land use planning and zoning should be the primary means for flood management in preference to structural improvements, where possible.

Policy 4.10.8 Detention basins should be designed for multiple uses such as parks and playing fields when not used for holding water, where possible.

Policy 4.10.9 Develop open bypass channels, detention basins, and all drainage facility rights of way as an asset to the development or adjacent neighborhood, e.g. as a secondary recreation use.

The following applicable goals and policies are from the Oakley 2020 General Plan Health and Safety Element:

Flood Hazards

Goal 8.2 Protect public safety and minimize the risk to life and property from flooding.

Policy 8.2.1 Applications for development at urban or suburban densities in 100-year floodplain areas where there is a serious risk to life and property shall demonstrate appropriate solutions or be denied.

Policy 8.2.2 In mainland areas along the creeks and bays affected by water backing up into the watercourse, it shall be demonstrated prior to development that adequate protection exists through levee protection or change of elevation.

Policy 8.2.3 Buildings in urban development near the shoreline of the Delta and in flood-prone

areas shall be protected from flood dangers, including consideration of rising sea levels.

Policy 8.2.4 Habitable areas of structures near the shoreline of the Delta and in flood-prone areas shall be sited above the highest water level expected during the life of the project, or shall be protected for the expected life of the project by levees of an adequate design.

Policy 8.2.5 Rights-of-way for levees protecting inland areas from tidal flooding shall be sufficiently wide on the upland side to allow for future levee widening to support additional levee height.

Policy 8.2.8 Development proposals near the shoreline of the Delta and within flood-prone areas shall be reviewed by the Flood Control District, as an advisory agency, prior to approval by the city.

Subsidence

Policy 8.2.9 Development of lands subject to subsidence shall take into account and fully mitigate the potential impacts of flooding based on the best currently available techniques.

Levee, Dam Failure, or Tsunami

Policy 8.2.12 In order to protect lives and property, intensive urban and suburban development shall not be permitted in reclaimed areas subject to 100-year flooding, unless flood protection in such areas is constructed. Typically, levees shall meet the standards of the U.S. Army Corps of Engineers, although 'Dry levees' that supplement existing levees may be allowed at the discretion of the city.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, a hydrology or water quality impact would be significant if the proposed Project would:

- Violate any water quality standards or waste discharge requirements;
- 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 (i.e., 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);[4]
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- 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 that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year floodplain structures which would impede or redirect flood flows; or
- 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.

Impacts and Mitigation Measures

Basis for Impacts

The conclusions included in this chapter are tiered from the conclusions reached in the City of Oakley General Plan, the General Plan EIR, and the General Plan Background Report. The proposed Project is consistent with the type and intensity of development anticipated in the General Plan EIR.

Analysis of Project Impacts

The analysis associated with the development of the proposed Project determined that the proposed Project would be consistent with General Plan Policy 8.2.12 and would not have any impacts with regard to failing levees, dam failure or tsunamis. The proposed Project's impacts related to water quality, drainage patterns and flood hazards are discussed below.

In addition, the analysis determined that the storm drain line has sufficient size and depth to accept flows from development as contemplated in the Specific Plan. On-site building, parking lot, and landscape areas would be served by private collections systems, which must convey flows to the easterly end of the site, where they can tie into the current storm drain trunk line.

Impact HWQ-1 - Violate Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Water Quality

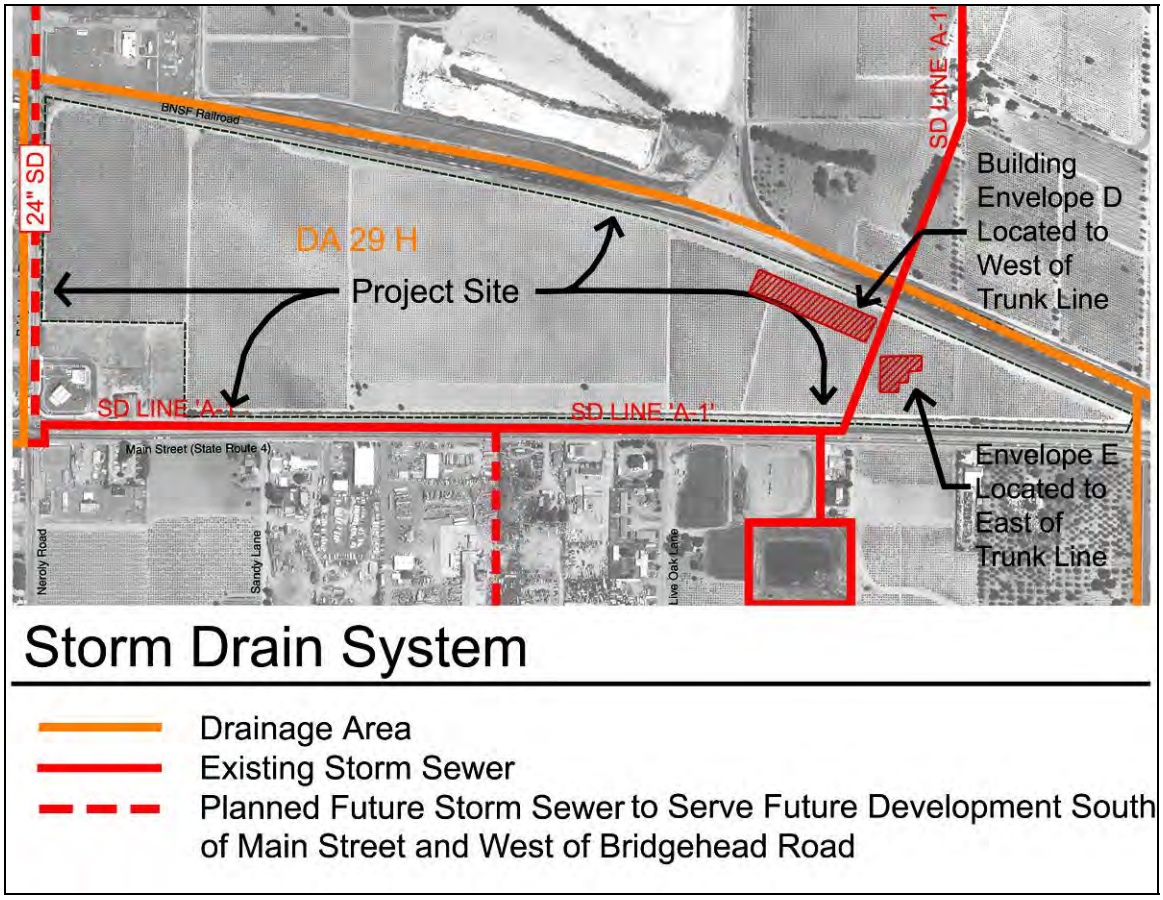
The Oakley General Plan EIR states, "Increased development associated with General Plan buildout may lead to an increase in impervious surfaces being created where permeable soils currently exist." This is the case with the Project site because a commercial development would be placed on agricultural land consisting of primarily pervious surfaces. The commercial development would create impervious surfaces on the site, such as roadways, parking areas and rooftops. Whereas open space or vacant land allows precipitation to infiltrate into the ground, impervious surfaces cause water to pond or runoff. Stormwater runoff from developed sites may concentrate and cause increases in runoff volume for the area. Discharge of the concentrated runoff may cause localized flooding at storm drain connections or downstream of the discharge location.

The site is within the Contra Costa County Flood Control and Water Conservation District (CCCFCWCD). The CCCFCWCD requires a drainage fee in accordance with Flood Control Ordinance Numbers 98-49. In order to maintain and upgrade the CCCFCWCD's storm drainage system.

As shown in the storm drain system map (See Figure 3.11-1), the improvement plans for the secondary building envelope D within the specific plan would potentially encroach on the existing storm drain pipeline at the easterly end of the Project site. The storm drain line has sufficient size and depth to accept flows from development as contemplated in the Specific Plan. On-site building, parking lot, and landscape areas would be served by private collections systems, which must convey flows to the easterly end of the site, where they can tie into the current storm drain trunk line.

Prior to development, the Specific Plan area would be required to create a master drainage plan to facilitate stormwater drainage. However, should the system not conform to the CCCFCWCD's Drainage Plan for the City of Oakley and should drainage fees not be paid, the proposed Project would violate water quality standards and/or waste discharge requirements and a ***potentially significant*** impact would result. The implementation of the following mitigation measures would reduce this impact to a ***less-than-significant*** level.

Figure 3.11-1
Storm Drain System



Source: Oakley Industrial Area Infrastructure Analysis; Carlson, Barbee & Gibson, Inc; Sept., 2001

Mitigation Measure(s)

HWQ-1(a) *Prior to any grading activities, the applicant shall provide a Storm Water Pollution Prevention Plan (SWPPP) for the entire Project site which shall include construction and post construction BMPs (including both physical and programs BMPs) to the satisfaction of the City Engineer. The SWPPP may include the following:*

- *Straw Wattle;*
- *Silt Fences;*
- *Silt Slacks and Rock Bags for Drain Inlet Protection;*
- *Hydro-Seeding;*
- *Erosion Control Blankets;*
- *Concrete Washouts; and/or*
- *Wheel Washing Stations.*

HWQ-1(b) Contra Costa County Flood Control and Water Conservation District Drainage fees for the Drainage Area shall be paid by the Project applicant prior to building permit issuance.

HWQ-1(c) Improvement plans for Secondary building envelope D and any adjoining structures shall provide for protection or relocation of the existing storm drain pipeline at the easterly end of the site within an easement to the satisfaction of the City and CCCFCWCD authorities.

Impact HWQ-2 - Substantially Alter Existing Drainage Patterns or Cause Runoff that Could Cause Sedimentation, Erosion, or Flooding

The San Francisco Bay Regional Water Quality Control Board (RWQCB) recently issued an order requiring all municipalities within Contra Costa County (including the County government) to develop more restrictive surface water control standards for new development projects as part of the renewal of the Countywide National Pollution Discharge Elimination System (NPDES) permit. Known as the "C.3 Standards," new development or redevelopment projects that disturb 10,000 square feet or more must contain and treat stormwater runoff from the site. Enhanced Best Management Practices (BMPs) to protect stormwater runoff from development sites are also required under the C.3 Standards since February 15, 2005, for projects creating one acre of new or redevelopment impervious area.

The proposed Project would result in the creation of impervious surfaces and the generation of increased urban runoff and possible contribution of urban runoff constituents to downstream surface waters.

The development associated with the Specific Plan would include cut and fill operations that would involve potential erosion and discharge of sediment in Project storm drainage during the construction phases. This process would result in the generation of urban runoff and possible contribution of urban runoff constituents to downstream surface waters.

Ongoing use of the site would result in the generation of urban runoff, including the possible contribution of urban runoff constituents to downstream surface waters. However, as stated above, the proposed Specific Plan Area would be subject to the requirements of the State Water Resources Control Board and Regional Water Quality Control Board, which control stormwater pollution through the use of National Pollution Discharge Elimination System (NPDES) permits. In addition, the proposed Project includes a Stormwater Control Plan that would ensure that C.3 requirements would be met. Should the proposed Project not comply with State regulations concerning stormwater pollution, the Project's construction activities could result in degradation of downstream water quality. Therefore, a ***potentially significant*** impact could occur. Implementation of the following mitigation measure will ensure that the impact would be ***less-than-significant***.

Mitigation Measure(s)

HWQ-2 *Prior to the issuance of grading permits for development within the Specific Plan Area, the developer shall obtain and comply with the NPDES general construction permit including the submittal of a Notice of Intent (NOI) and associated fee to the SWRCB, and the preparation of a Storm Water Pollution Prevention Plan (SWPPP) that includes construction BMPs, consistent with the Stormwater Control Plan, to be submitted to the City Engineer for review.*

Impact HWQ-3 - Place Sensitive Land Uses within a 100-year Floodplain or Expose People or Structures to Significant Risks of Loss, Injury, or Death Involving Flooding

Substantial areas within Contra Costa County are subject to flooding. The Federal Emergency Management Agency (FEMA) indicates a majority of the County's creeks and shoreline areas lie within the 100-year floodplain. Areas deemed to be within the 100-year floodplain are subject to flooding during a storm likely to occur once every one hundred years. According to the Flood Insurance Rate Map, Community Panel Number 0607660175A, effective February 2, 2002, the Project site is within a "Zone X" area, which indicates that buildings within the area would have a minimal hazard from the principal sources of flood in the area. The Project area does not lie within a 100-year floodplain; therefore, the impact of flooding on the proposed Project would be ***less-than-significant***.

Cumulative Impacts

The proposed Project plus other developments in the Project area would create impervious surfaces where none currently exist. The addition of impervious surfaces to the area would increase the stormwater drainage downstream of the Project area. The proposed Project plus other development in the Project area may increase the stormwater flowing into the drainages, which could overcome the existing drainage system and cause flooding downstream. In addition, the development of the proposed River Oaks Crossing Specific Plan Project and buildout of the General Plan would increase the sediment load of area waterways. In addition, the stormwater runoff occurring in urbanized areas would contribute a higher amount of pollutants to adjoining channels. As such, water quality in the region could be affected on a short-term and long-term basis.

However, as discussed above, the proposed Project would be required to abide by all existing standards including the attainment of NPDES permits and the creation of a SWPPP to mitigate Project-related hydrological impacts.

Therefore, although the proposed Project and buildout of the General Plan would increase the amount of impervious surfaces to the drainage area of which the Project site is a part, the impacts associated with the proposed Project would be

mitigated to a less-than-significant level through the implementation of suggested mitigation measures. Because the Project-level impacts would be mitigated to acceptable levels, the proposed Project's contribution to the cumulative condition would not be considerable. Therefore, the proposed Project would have a ***less-than-significant*** cumulative impact.

Endnotes

[1] City of Oakley. *Oakley 2020 General Plan.* August 30, 2002.
[2] City of Oakley. *Oakley 2020 General Plan Draft Environmental Impact Report*, September 2002.
[3] City of Oakley. *City of Oakley 2020 General Plan Background Report.* September 2001.
[4] Discussions pertaining to groundwater supplies and recharge can be found in Section 3-13 of this EIR, Utilities and Service Systems.

3.12 PUBLIC SERVICES (PS)

This section will summarize setting information and identify potential new demand resulting from the proposed Project on law enforcement, fire protection, schools, parks and recreation. Information for this section was drawn from the Oakley 2020 General Plan Background Report, and the Oakley 2020 General Plan and its associated EIR.

Environmental Setting

The environmental setting section describes the existing proposed Project site, including law enforcement, fire protection, schools, and parks and recreation facilities.

Existing Conditions

Project Site

The Project site is currently used for commercial grape production and related harvesting and farming management activities. Demands for public services are currently limited to public safety, fire protection, and City administrative functions.

City of Oakley

Fire Protection

The City of Oakley receives fire protection from the East Contra Costa Fire Prevention Department (ECCFPD). The East Contra Costa Fire Protection District, which was formed in 2002 provides suppression, dispatches emergency services for a 250-mile area, including the City of Oakley, and is the second largest fire service in the County. The district includes eight stations and over 83 emergency staff. The ECCFPD was formed as a consolidation of three fire districts, including the Oakley/Knightsen Fire Protection District, which used to provide services to the City of Oakley.

The City of Oakley is served by Fire Station 93, which is located at 215 Second Street within the City of Oakley. Additionally, a fire station site is planned for construction on East Cypress Road immediately east of Bethel Island Road.

Law Enforcement

The City of Oakley contracts with the Contra Costa County Sheriff's Department for equipment and personnel. However, the Oakley Police Department controls the specifics of delivery of law enforcement services in the City, and this control results in a city-based police operation free of

County jurisdiction. The current number of officers in the City results in a ratio of 0.7 police officers per 1,000 residents.

The General Plan EIR indicates that as the population in the General Plan area increases, the need for additional law enforcement services would increase. The General Plan EIR indicates that to maintain the level of service for the General Plan area, the appropriate police officer to population ratio is 1.5 officers per 1,000 residents.

Schools

Three school districts serve the Oakley area: Oakley Union Elementary School District, Liberty Union High School District, and Antioch Unified School District. The proposed Project is within the Antioch Unified School District, so only a brief description of the schools operated by this district follows.

Antioch Unified School District (AUSD)

The AUSD primarily covers the City of Antioch, and the western portion of Oakley from the border with Antioch to Empire Road and Big Break Road. Of the seventeen schools in the District, the following five schools enroll Oakley students:

- Bidwell Continuation High School (800 Gary Ave.);
- Kimball Elementary (1310 August Way);
- Antioch Middle School (1500 D St.);
- Antioch High School (700 W. 18th St.);
- Deer Valley High School (4700 Lone Tree Way); and
- Future elementary school (under construction on Live Oak Avenue, between Oakley Road and Main Street).

Parks and Recreational Facilities

The City of Oakley maintains a system of neighborhood and community parks, based on a standard in the General Plan of five acres of park per 1,000 residents. Neighborhood parks generally abut residential areas and have amenities such as play areas, picnic areas, gathering areas, and open turf. These parks have turf areas suitable for informal play, practices, and scrimmages, but not formal games. Community parks are designed to serve the needs of several neighborhoods up to the whole community. The parks are intended to host organized, formal recreation leagues and tournaments to meet adult recreation opportunities that would require larger fields and therefore larger sites.

The City of Oakley became responsible for the provision of local parks at the time of its incorporation in 1999. Parks in the City of Oakley that are located on school property or other joint-use sites, and maintained under school/park joint-use agreements with the Oakley Union Elementary School District or Contra Costa County are funded by the park's Landscape and Lighting Assessment District. The school use agreements detail how all aspects of the joint site-use are funded, developed, and maintained.

The existing agreements provide for joint school/community-use areas, a term used to describe areas used exclusively by the schools during the school day and that are available to the public after school hours and on weekends. Public park use, or day use, is also provided by the agreements, which refers to sites that are available to the general public during all daylight hours. Existing Oakley recreation facilities are listed in Table 3.12-1.

Table 3.12-1
Oakley Park Facilities Inventory[1]

Facility	**Park Acreage**		
	Improved	**Unimproved**	**Total**
Neighborhood Parks [1]			
Claremont Bay Park	0.25		0.25
Crockett Neighborhood Park	4.66		4.66
Heather Park	0.16		0.16
Holly Creek Neighborhood Park		6.7	6.7
Laurel/Nutmeg		2.56	2.56
Laurel Road at Marsh Creek Park Site		9.0	9.0
Main Street Park	0.4		0.4
Marsh Creek Glenn Park	2.4		2.4
Patriot Park	0.2		0.2
Stonewood Park		1.95	1.95
Teakwood Basin Park		5.2	5.2
SUBTOTAL	**8.07 acres**	**25.41 acres**	**33.48 acres**
Joint-Use School [2]			
Freedom High School	9.0	3.0	12.0
Gehringer Elementary School	4.2		4.2
Laurel Elementary School	4.0		4.0
Oakley Elementary School	4.0		4.0
O'Hara Park Middle School	17.35		17.35
Vintage Parkway Elementary School Park	4.37		4.37
SUBTOTAL	**43.07 acres**	**3.0 acres**	**46.07 acres**
Civic, Sports, Recreation, Activities/Community Parks			
Civic Center and Plaza		1.0	1.0
Freedom Soccer Fields Park	8.48		8.48
Laurel Ballfields Park	13.63		13.63
Laurel Crest Park Site		10.0	10.0
Moura Park Site	1.5	4.5	6.0
Laurel Road at Marsh Creek Park Site		9.0	9.0
SUBTOTAL	**23.61 acres**	**24.5 acres**	**48.11 acres**

Table 3.12-1
Oakley Park Facilities Inventory[1]

Facility	Park Acreage		
	Improved	**Unimproved**	**Total**
Open Space			
Del Antico Basin Site		2.95	2.95
Las Dunas Basin Site		1.0	1.0
Live Oak Basin Site			
SUBTOTAL	**0.0 acres**	**3.95 acres**	**3.95 acres**
Regional Parks [3]			
Antioch Oakley Regional Shoreline	0.81		0.81
Big Break Regional Park		43.14	43.14
Legless Lizard Preserve		0.62	0.62
SUBTOTAL	**0.81 acres**	**43.76 acres**	**44.57 acres**
Total Park Acres	**75.56 acres**	**100.62 acres**	**175.56 acres**
Acres required for city population (27,000)	135 acres		
Acres per 1,000 people [4]	2.43 acres	4.23 acres	6.75 acres
Park acres required at 2020 Build-out (68,371) (City population: 49,388; Expansion Areas population: 18,983)	**342.27 acres**		**342.27 acres**

Notes:
1. Includes parks and playfields made available through joint-use agreements between the City and the Flood Control District.
2. Includes parks and playfields available through joint-use agreements between the City, the Flood Control District and the School District.
3. Acreage noted for Regional Parks is 11% of total acreage of regional park sites within Oakley, based on Oakley's participation in East Contra Costa County regional parks funding programs.
4. Figures based on city park standard of 5 total park acres/1,000 people (2 acres/1,000 for neighborhood parks, 2 acres/1,000 for community parks, and 1 acres/1,000 for special purpose facilities).

Source: Oakley 2020 General Plan, p. 7-15.

Regulatory Environment

Existing policies, laws and regulations that would apply to the proposed Project are summarized below.

State Regulations

Fire Services

Uniform Fire Code

The Uniform Fire Code contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders,

industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The Code contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, include regulations for building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

Schools

California Code of Regulations

The California Code of Regulations, Title 5 Education Code, governs all aspects of education within the State.

Proposition 1A/Senate Bill 50

Proposition 1A/Senate Bill (SB) 50 (Chapter 407, Statutes of 1998) is a school construction measure authorizing the expenditure of State bonds totaling $9.2 billion through 2002, primarily for modernization and rehabilitation of older school facilities and construction of new school facilities. $2.5 billion is for higher education facilities and $6.7 billion is for K-12 facilities. Proposition 1A/SB 50 implemented significant fee reforms by amending the laws governing developer fees and school mitigation:

- Establishes the base (statutory) amount (indexed for inflation) of allowable developer fees at $1.93 per square foot for residential construction and $0.31 per square foot for commercial construction.
- Prohibits school districts, cities, and counties from imposing school impact mitigation fees or other requirements in excess of or in addition to those provided in the statute.
- Suspends for a period of at least eight years (2006) a series of court decisions allowing cities and counties to deny or condition development approvals on grounds of inadequate school facilities when acting on certain types of entitlements.

Proposition 1A/SB 50 prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "legislative or adjudicative act…involving …the planning, use, or development of real property" (Government Code 65996(b)).

Additionally, a local agency cannot require participation in a Mello-Roos for school facilities; however, the statutory fee is reduced by the amount of any voluntary participation in a Mello-Roos. Satisfaction of the Proposition 1A/SB 50 statutory requirements by a developer is deemed to be "full and complete mitigation." The law identifies certain circumstances under which the statutory fee can be exceeded, including preparation and adoption of a "needs analysis," eligibility for State funding, and satisfaction of two of four requirements (post-January 1, 2000) identified in the law including year-round enrollment, general obligation bond measure on the ballot over the last four years that received 50 percent plus one of the votes cast, 20 percent of the classes in portable classrooms, or specified outstanding debt. Assuming a district qualifies for exceeding the statutory fee, the law establishes ultimate fee caps of 50 percent of costs where the State makes a 50 percent match, or 100 percent of costs where the State match is unavailable. District certification of payment of the applicable fee is required before the City or County can issue the building permit.

Proposition 55

Proposition 55 is a school construction measure passed in 2004 authorizing the sale of approximately $12.3 billion in bonds to fund qualified K-12 education facilities to relieve overcrowding and to repair older schools. Funds target areas of the greatest need and must be spent according to strict accountability measures. These bonds would be used only for eligible projects. Approximately ten billion dollars would be allocated to K-12 schools, with the remaining 2.3 billion allocated to higher education facilities.

Department of Education Standards

The California Department of Education published the Guide to School Site Analysis and Development to establish a valid technique for determining acreage for new school development. Rather than assigning a strict student/acreage ratio, this guide provides flexible formulas that permit each district to tailor the Department's ratios as necessary to accommodate each district's individual conditions. The Department of Education also recommends that a site utilization study be prepared for the site, based on these formulas.

Local Regulations

City of Oakley General Plan

The following applicable goals and policies are from the Oakley 2020 General Plan Growth Management Element:

Law Enforcement

Goal 4.5 Provide a high standard of police protection services for all citizens and properties throughout Oakley.

Policy 4.5.1 Police patrol beats shall be configured to assure minimum response times and efficient use of resources.

Policy 4.5.2 Incorporate police protection standards and requirements into the land use planning process.

Policy 4.5.3 Encourage public participation in crime prevention activities.

Policy 4.5.4 The city shall strive to provide sufficient personnel and capital facilities to ensure adequate police protection and appropriate response times.

Policy 4.5.5 Require that the Community Development Department refer, as appropriate, development proposals to the Police Department for review and comments.

The following applicable goals and policies are from the Oakley 2020 General Plan Parks and Recreation Element:

General Parks and Recreation

Goal 7.1 Develop and maintain a system of parks, recreational facilities and open space areas to meet the needs of the City of Oakley.

Policy 7.1.1 Develop and maintain a park system that provides 5 acres of parkland per 1,000 residents.

Policy 7.1.2 Offer a wide variety of indoor and outdoor recreational opportunities in proximity to all residents of the city, enabling residents to participate in activities that will enhance the quality of life in the community.

Policy 7.1.3 Provide a full range of park and recreation facilities and programs for all community residents.

Policy 7.1.4 Provide recreation services that enhance the quality of life and meet the changing needs of residents.

Policy 7.1.5 Maintain and improve existing parks and develop new neighborhood and community parks in new residential neighborhoods as growth occurs.

Policy 7.1.7 Provide sufficient playfields within the City to accommodate both practice and competitive demands for organized and informal activity.

Policy 7.1.10 Consider multiple uses for open space land (i.e. land use buffer zones and green-ways for trails and linear parks, flood control basins for basin and park joint use, and school sites for neighborhood/community park joint use).

Policy 7.1.13 Consider multiple uses for open space land (i.e. land use buffer zones and green-ways for trails and linear parks, flood control basins for basin and park joint use, and school sites for neighborhood/community park joint use).

Policy 7.1.19 Require all development to dedicate parkland and pay in lieu and/or impact fees sufficient to meet the added demand for parkland facilities.

<u>Public Schools</u>

Goal 4.6 Assure the provision of adequate primary and secondary schools in optimal locations to serve planned growth.

Policy 4.6.3 To the extent possible, new residential development, General Plan Amendments, or Rezoning shall, in the absence of the Planning Agency's satisfaction that there are overriding considerations (i.e., provision of low or moderate cost housing), be required to

adequately mitigate impacts on primary and secondary school facilities.

Policy 4.6.5 Ensure that school facility impact fees are collected and shall work with developers and school districts to establish mitigation measures to ensure the availability of adequate school facilities.

Policy 4.6.6 Work with the school districts to consider alternative funding programs for school facility construction and provision of educational programs.

Policy 4.6.8 School site donation by developers may be encouraged through the use of density transfer or other appropriate land use alternatives.

Oakley Parks Master Plan

Parks planning for Oakley was initiated in 1988 when the Contra Costa County Board of Supervisors adopted the first Oakley Parks Master Plan. The 1988 plan attempted to establish goals and priorities for parks in the Oakley community. The 1988 plan was not utilized effectively and therefore development did not accomplish the outlined goals.

Following revision of the County General Plan in 1991, the Oakley Parks Master Plan was updated to maintain conformance with the County General Plan. The updated Oakley Parks Master Plan adopted in 1993, took a realistic look at parkland opportunities and strategies needed to achieve the goals of the community. The 1993 plan contained updated technical data, new maps, inventories of existing facilities, population projections and neighborhood analysis, as well as park standards and prototypes. The 1993 plan provided a guide to the planning and development of future parks and recreational facilities in the Oakley community, with implementation to occur as funds became available.

In 1999, the newly incorporated City of Oakley became responsible for the provision of local parks. At that time, the City initiated an update of the Oakley Parks and Recreation Master Plan. Information and policy direction compiled for the new Master Plan has provided the foundation for the Parks and Recreation Element of the Oakley 2020 General Plan.

The updated Oakley Parks and Recreation Master Plan was adopted in 2003. The new Parks and Recreation Master Plan dovetails with the City's General

Plan and provides the detailed implementation programs needed to expand local public recreational opportunities, in conformance with the findings of the study.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, an impact to the public services and utilities of the proposed Project area would be considered significant if the proposed Project would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities in order to maintain acceptable service relations, response times, or other performance objectives for any of the following public services, the construction of which could cause significant environmental impacts:

    - Fire Protection;
    - Police Protection;
    - Schools; or
    - Parks.

Impacts and Mitigation Measures

Basis for Impacts

The following section evaluates the impacts of the proposed Project on the existing public services that would occur if the Project as currently proposed went into effect. Impact significance is determined by comparing Project conditions to the existing conditions.

Analysis of Project Impacts

Impact PS-1 - Adequate Fire Department Facilities and Infrastructure

The East Contra Costa Fire Prevention Department (ECCFPD) strives to achieve a standard five-minute response time, 90 percent of the time (Contra Costa County General Plan 7-25). In 2006, the ECCFPD received a total of 4,807 emergency calls and maintained an average response time of six minutes and 38 seconds within the City of Oakley.

In October of 2006, the City approved development plans for Fire Station 96, to be constructed on East Cypress Road, east of Bethel Island Road. As the City of Oakley continues to grow, the City will require further protection to provide adequate coverage under current circumstances. Although the proposed Project would contribute to the growth of the City of Oakley, at the project level,

according to the Fire Chief, the proposed Project site would be able to be served within the standard five-minute response time for ECCFPD from Fire Station 93.[4]

Although the site can be served within the standard response time of five minutes, ECCFPD would need adequate site access and water flow in order to serve the site during construction and operation. Without such provisions, the impact would be ***potentially significant***. Implementation of the following mitigation measures would reduce the impact to a ***less-than-significant*** level.

Mitigation Measure(s):

PS-1(a) *Prior to building permit issuance, each developer shall comply with all applicable requirements of the Uniform Fire Code and the adopted policies of the East Contra Costa Fire Protection Districts. The Chief Building Official shall review the building plans to ensure compliance.*

PS-1(b) *Prior to building permit issuance, each developer shall provide an adequate and reliable water supply for fire protection with a minimum fire flow of 2,000 gallons per minute (GPM). The required fire flow shall be delivered from not more than two fire hydrants flowing simultaneously while maintaining 20 pounds of residual pressure in the main. The City Engineer shall ensure the minimum fire flow requirements are satisfied. Flow requirements will be determined by the ECCFPD prior to issuance of encroachment and/or building permits. The developer shall provide the number and type of fire hydrants required by ECCFPD and the City Engineer. Hydrant locations will be determined by the ECCFPD and the City Engineer prior to building and/or encroachment permit issuance. All applicable connection fees shall be paid to DWD at the time of permit issuance.*

PS-1(c) *Prior to construction involving use of flammable materials, the developer shall provide access driveways having all-weather driving surfaces of not less than 20' unobstructed width and not less than 13'6" of vertical clearance to within 150 feet of travel distance to all portions of the exterior walls of every building. Access driveways shall not exceed 16 percent grade, shall have a minimum outside turning radius of 42 feet, and must be capable of supporting imposed loads of fire apparatus (37 tons). Center divide medians on any access roadways shall leave a minimum remaining lane width of 16 feet on each side. Median length shall not exceed 150 feet when a 16-foot lane width is used. A rolled curb and an unobstructed drivable surface on the median may be used to assist with meeting apparatus turning radius requirements. The City Engineer shall ensure compliance.*

PS-1(d) *Prior to encroachment and/or building permit issuance for improvements, the developer shall submit plans and specifications to the ECCFPD and the City Engineer for review and approval in accordance with codes, regulations, and ordinances administered by the ECCFPD and the State Fire Marshal's office*.

Impact PS-2 - Adequate Law Enforcement Facilities

Table 5.3 of the 2001 *Oakley 2020 General Plan Background Report* indicates that Oakley had a ratio of officers to population of 0.74 officers per 1,000 residents (19 sworn staff divided by 25,625 persons). As a comparison, Antioch has a ratio of 1.24 officers per 1,000 residents (105 sworn staff divided by 84,500 persons) and Pittsburg has a ratio of 1.36 officers per 1,000 residents (74 sworn staff divided by 54,400 persons). The Oakley Police Department has limited ability to fund expanded services due to a limited budget.[5] Oakley is taking steps to secure dedicated future funding for police services. However, it is anticipated that the necessary revenue building may take several years. The City Manager and Police Chief continue to seek grants and other types of funding. The City is concerned that future growth in the Planning Area would make adequate coverage of the citizen's police protection needs more difficult. To this end, the City has adopted Ordinance 86-01, which requires each project to pay a fee toward maintaining police services. Each project is required to participate in the provision of funding to maintain police services by voting to approve a special tax for the parcels created by the subdivision approval.

In addition, because the proposed Project would result in the construction of a commercial center, the possibility exists that the Project would result in an increased risk of crime in the Project vicinity. To counter this potential increase, the Specific Plan specifies that the first Major Retail use will be required by the Specific Plan to contribute toward the implementation of the following measures through the use of professional private security forces:

- Install closed-circuit camera systems (surveillance cameras) inside and outside Major Retail store buildings, monitored by security employees.
- Establish a parking lot patrol, which assists customers, ensures safety and takes action to identify and prevent any suspicious activity (such as loitering and vandalism) both during the day and nighttime hours.
- Establish a plainclothes patrol inside the Major Retail buildings to ensure safety and security.
- Establish and implement a training program for associates to identify and report safety and security issues at the site.
- Provide lighting in the parking areas that will ensure public safety.

- Prohibit consumption of alcohol in the parking lots by having security regularly patrol the parking areas. Limit alcohol sales to the hours of 6AM to 2AM of the following day, in accordance with State Law.
- Provide annual reporting of security performance to the Oakley Police Department for review and consultation, and consideration of program adjustments.

Future development of the proposed Specific Plan area would increase the population of the City of Oakley and would result in the need for more law enforcement personnel; therefore, a ***potentially significant*** impact to law enforcement facilities would occur. Implementation of the following mitigation measures would reduce these impacts to a ***less-than-significant*** level.

Mitigation Measure(s):

PS-2 *Prior to building permit issuance for development within the River Oaks Crossing Specific Plan, the landowner shall participate in the provision of funding to maintain police services by voting to approve a special tax for the parcels within the specific plan. The tax shall be the per parcel annual amount (with appropriate future cost of living adjustment) as established at the time of voting by the City Council. The election to provide for the tax shall be completed prior to issuance of permits. Should the buildings be ready for occupancy prior to the City receiving the first disbursement from the tax bill, the Project proponent shall be responsible for paying the pro-rata share for the remainder of the tax year prior to the City conducting a final inspection.*

Impact PS-3 - Impacts relating to adequate funding for local schools

The proposed Specific Plan area is serviced by the Antioch Unified School District. Though the land uses associated with the Project are commercial and would not result in an increase in enrollment, the proposed Project would be required to pay applicable SB 50 and AB 16 school impact fees. Levels of developer fee contribution are determined by the State Allocation Board and increase annually. Current State statutes dictate that school districts have the authority to levy fees (known as statutory or Level I fees) on new development at rates of $0.34 per square foot for commercial and industrial development. It should be noted that Government Code section 65596 provides that school impact fees are the exclusive means of considering and mitigating the school facilities impacts of projects. However, should the property owner not pay a fair-share of school costs, a ***potentially significant*** impact would result. The implementation of the following mitigation measure would reduce this impact to a ***less-than-significant*** level.

Mitigation Measure(s):

PS-3 *Prior to issuance of building permits, the proposed Project developer shall pay appropriate SB50 and AB16 school impact fees.*

Impact PS-4 - Adequate provision of parks and recreation space

The 2020 City of Oakley General Plan identifies a potential park location approximately one-fourth mile south of the subject property (See Figure 7.2 of the City of Oakley General Plan). The Public Facilities Impact Fee includes community parks, neighborhood parks and open space components. To complete the obligation of the Project to dedicate and improve parkland, the Project applicant would be required to pay the applicable Public Facilities Impact Fees associated with parkland. However, should the fee not be paid, a ***potentially significant*** impact would result. The implementation of the following mitigation measure would reduce this impact to a ***less-than-significant*** level.

Mitigation Measure(s):

PS-4 *Prior to the issuance of building permits, the Project proponent shall pay applicable City of Oakley Public Facilities Impact Fees.*

Cumulative Impacts

The following discussion of cumulative impacts is based on the implementation of the proposed Project in combination with other proposed and pending projects in the region.

Law Enforcement, School, and Parks and Recreation Facilities

The proposed Project would increase the demand for public services and facilities, but would not create significant cumulative impacts on law enforcement, school, and parks and recreation services because the City requires that each new discretionary project pay for required services, thereby fully mitigating the respective project-level impacts associated with the Project. The mitigation measures identified in the Project Impacts section would reduce project-level impacts to ***less-than-significant*** levels; therefore the proposed Project would not be expected to contribute considerably to the cumulative condition for law enforcement, school, and parks and recreation facilities.

Impact PS-5 – Cumulative Impacts to Adequate Fire Department Facilities and Infrastructure

Although the proposed Project would not have a significant impact on fire protection services at a project level, the Project would have a cumulatively

considerable impact on fire protection services because ECCFPD currently does not meet the expected response time of five minutes. This impact would be considered a ***potentially significant*** cumulative impact on fire protection. The implementation of the following mitigation measures would reduce this impact to a ***less-than-significant*** level.

Mitigation Measure(s):

PS-5 *Prior to the issuance of building permits, the Project proponent shall pay a fair share of costs for new fire protection facilities and services, consistent with Ordinance 06-01 requiring fire impact fees, adopted by the City of Oakley.*

Endnotes

[1] City of Oakley. *City of Oakley 2020 General Plan.* August 30, 2002. p. 7-15.
[2] City of Oakley. *City of Oakley 2020 General Plan.* August 30, 2002. p. 7-15.
[3] City of Oakley. *City of Oakley General Plan EIR*. September 2002. p. 3-91,92.
[4] City of Oakley personal communication between Ken Strelo, Senior Planner and Chief Bill Weisgerber of the East Contra Costa Fire Protection District, August 31, 2007.
[5] City of Oakley. *City of Oakley General Plan EIR*. September 2002. p. 3-91,92.

3.13 UTILITIES AND SERVICE SYSTEMS (USS)

Environmental Setting

This section will summarize setting information and identify potential new demand resulting from the proposed Project on sewage systems, water supplies, solid waste disposal, electric power, and natural gas. The utilities and service systems impact analysis is based on information drawn from the *Oakley 2020 General Plan*[1] and associated EIR[2], and the Diablo Water District (DWD) *Capital Improvement Program*[3] and *2006 Facilities Plan*[4].

Existing Conditions

The environmental setting section describes the existing proposed Project site, including wastewater collection and treatment, the water system, solid waste collection and disposal, and other related public utilities.

Wastewater Collection and Treatment

The Ironhouse Sanitary District (ISD) provides wastewater service to the entire City of Oakley and the unincorporated areas of Bethel Island and Sandmound. Wastewater services include the conveyance of primarily residential and some commercial and light industrial raw wastewater to a treatment facility, for treatment and disposal of treated effluent onto agricultural lands on the mainland and Jersey Island.

Current System Capacity

The wastewater system is composed of collection, treatment, and disposal. The disposal system has been sized to meet the buildout capacity within the ISD. The current daily average dry weather flow is 2.6 mgd and treatment capacity totals 3.0 mgd. The current average biochemical oxygen demand (BOD) concentration is 225 mg/l, an increase of 20 percent over the original design value of 188 mg/l.

Due to the impacts of increased influent BOD load, ISD's WTF is rapidly approaching capacity estimated at approximately 2.7 mgd. To address the higher BOD load, the ISD is removing solids from the treatment cells and effluent storage ponds on an annual basis.

Current Conveyance Facilities

The trunk line system is divided into four general areas that are identified as follows:

- Empire Avenue System

- South of Ridge Line System
- Central System, O'Hara Avenue, Laurel Road
- Highway 4 System

The ISD collection system includes approximately 85 miles of gravity pipelines, 20 miles of pressure pipelines, and 31 pump stations. All of the pump stations have a permanent standby generator on-site or are equipped with a portable generator plug-in.

Wastewater Treatment

The ISD owns and operates a wastewater treatment plant in the northeast portion of Oakley. The plant currently provides wastewater treatment services for Oakley, Bethel Island, and the Sandmound area. Fifty acres of on-site storage are currently available for treated wastewater. The plant uses an aerated pond treatment system that occupies about 7.5 acres of the site. The aerated pond system consists of a nine-inch parshall flume, two grinders, two pumps, and two parallel-two-stage aerated treatment ponds followed by storage and then chlorination.

Current Disposal Facilities

Current ISD disposal facilities consist of disinfection facilities, 50 acres of storage ponds with a capacity of 350 acre-feet, and land application of recycled water on 166 acres of "mainland" agricultural adjacent to the WWTP and on 425 acres of Jersey Island.

Sludge Disposal Capacity

The Ironhouse Sanitary District has never applied sludge on property they own, although sludge application is permitted in their current Wastewater Discharge Requirements.

Water Supply

Contra Costa Water District (CCWD)

The proposed River Oaks Crossing Specific Plan site is located in the City of Oakley, which relies on the Diablo Water District (DWD) as the City's water purveyor. DWD receives water from Contra Costa Water District (CCWD). CCWD's primary source of water is the United States Bureau of Reclamation's Central Valley Project (CVP). CCWD receives additional supplies from Mallard Slough, Mallard Well Fields, and the East Contra Costa Irrigation District (ECCID).

CCWD is a CVP contractor relying almost entirely on the United States Bureau of Reclamation (USBR) to supply the district's water through the Sacramento-San Joaquin Delta (Delta). The CCWD amended contract with the USBR provides for the operation of the Los Vaqueros Project, and for a maximum delivery of 195,000 acre-feet per year (ac-ft/yr) from the CVP. CCWD's supply contract is subject to reductions in deliveries during water shortages including regulatory-restricted low flows and drought years.

The CVP manages approximately nine million acre-feet of water annually, delivering about seven million acre-feet to agricultural, urban, municipal and industrial, and wildlife (public trust) use. The CVP currently provides approximately five million acre-feet for farms and 600,000 acre-feet for municipal and industrial use. The Central Valley Project Improvement Act (CVPIA) dedicates 800,000 ac-ft/year to fish and wildlife and their habitat, and 410,000 ac-ft/year to State and federal wildlife refuges and wetlands pursuant to the CVPIA.

Passage of the CVPIA in 1992 established new CVP operating parameters by reforming water distribution pricing and policies. The CVPIA attempts to better balance the needs of water contractors with those of the environment. Future water allotments under renewed CVP contracts will be based on new estimates of CVP supply that take into account the CVPIA and other new regulations.

In addition to the existing CVP contract, CCWD receives minor supplies from pumped diversions at Mallard Slough and through pumping at the Mallard Well Fields. CCWD has obtained an agreement with East Contra Costa Irrigation District (ECCID) to use up to 12,000 ac-ft/yr (8,200 firm, plus 4,000 in years of shortage) of ECCID water supply for municipal and industrial demands in portions of ECCID that are now within the CCWD Service Area. An agreement with the City of Brentwood provides for the transfer of 21,000 ac-ft/yr to Brentwood for future water needs. A review of water rights in the current CCWD Service Area identified the City of Antioch, the Gaylord Container Corporation, and the Tosco Corporation as having surface water rights.

Under ideal conditions, current agreements entitle CCWD to a total annual supply of 242,700 ac-ft/yr, plus an additional 3,000 ac-ft produced from wells (owned by CCCWD and others) in the District's Service Area.

Central Valley Project

CCWD's primary water supply is through CVP entitlement. On September 18, 1951, the District entered into a contractual agreement with the United States Department of the Interior, Bureau of Reclamation (USBR or Bureau), to receive water service from the Bureau's CVP (Water Right Permits Nos. 12725 and 12726). The contract has been amended on several occasions since the contract's original enactment. The Contract is effective through February 28,

2045 and provides that the Bureau will supply up to 195,000 ac-ft annually to CCWD at Rock Slough.

The CVP's ability to provide water supplies to CCWD is greatly affected by regulatory conditions in the Sacramento-San Joaquin Delta, the Central Valley Project Improvement Act (CVPIA), and upstream water resource conditions. During regulatory restrictions, CCWD will receive greater than 75 percent of the contract entitlement, or 85 percent of historical use. During water shortages, CCWD will not receive less than 75 percent of the contract entitlement or 85 percent of historical use (whichever is less). Under severe drought conditions, the CVP supply can drop to as little as 75 percent of historical use; the contract allows lower supplies during drought emergency conditions, when there is only a sufficient supply to maintain health and safety.

Current Water System Capacity and Quality

Prior to completion of the Los Vaqueros Project, approximately 90 to 95 percent of Diablo Water District's (DWD) raw water was surface water supplied from the Contra Costa Canal. Since the Los Vaqueros Project was completed in 1997, and because a new water intake was constructed by CCWD just south of Discovery Bay at Old River, water quality has improved.

Contra Costa Canal and Los Vaqueros Project

Diablo Water District purchases CVP water from CCWD under a contractual agreement. Surface water is currently supplied from the Contra Costa Canal. The canal is operated by CCWD, which treats water for the District's own use and also sells raw water to agencies serving the municipalities of Oakley, Antioch, Pittsburg, Bay Point, and Martinez and several large industrial users. In turn, these communities/water districts and industries own their own treatment, distribution, and storage systems for treated water.

The Contra Costa Canal is 48 miles long and conveys water from Rock Slough and Old River in the Delta to various treatment plants. The Bureau of Reclamation constructed the canal and the Bureau's four pump stations in 1937, as part of the CVP, to serve agricultural and industrial demands in eastern and central Contra Costa County. Since that time, the predominant demand for canal water has transitioned to residential, commercial, and some industrial use; agricultural use is now negligible. CCWD assumed operation and maintenance of the canal and pump stations in 1972. The canal capacity varies from 350 cubic feet per second (CFS) at Mile 0 in Oakley to approximately 25 CFS at Mile 48, where the canal terminates into the Martinez Reservoir in Martinez.

Pumping Plant 1 is approximately four miles from the canal intake and the City of Oakley is the first major consumer of canal water. The Randall-Bold Water Treatment Plant (RBWTP), which DWD jointly owns with CCWD, takes raw water

from the canal downstream of Pump Station No. four. Los Vaqueros Reservoir also provides raw water, which is blended with Rock Slough canal water prior to delivery to the RBWTP.
Historically, the canal has been a reliable source of water. Stoppages of canal operations have occurred infrequently from one to eight hours in duration, because of electrical or mechanical failures, over the past 20 years. However, water supply was not interrupted because the treatment plant intake is positioned so that water can be backfed to the plant from the Contra Loma Reservoir in Antioch.

In November 1988, Contra Costa County voters passed a bond proposal for the construction of a water storage reservoir in the Los Vaqueros area. CCWD proposed the Los Vaqueros Project to improve the quality of water supplied to the CCWD's customers, minimize seasonal water quality changes, and improve the reliability of the CCWD's raw water supply by providing emergency storage. The raw water supply from Rock Slough is subject to substantial variations in quality, during seasonal periods of saltwater movement from the San Francisco Bay into the Delta. The Los Vaqueros Project facilities were completed in 1998. The Los Vaqueros Reservoir supplies high-quality water for blending with Rock Slough water during periods of low water quality in the Delta. Los Vaqueros Reservoir also provides emergency storage in the event of unforeseen circumstances, such as a levee failure or chemical spill, which could make Delta water unusable for extended periods.

The Los Vaqueros Project provides 100,000 acre-feet of storage with a 1,500-acre surface area and 170-foot maximum depth. The intake is from the Delta at Old River just south of Discovery Bay. The intake facility has a 250 CFS (10,000 HP) pumping plant.

The reservoir is filled during times of high water quality (typically winter and spring high flow periods). Then during low flow periods (typically summer and fall) when the canal water quality from Rock Slough is traditionally at the lowest with high sodium and chloride levels, the higher quality water stored in the reservoir is blended with the canal water to improve raw water quality. The blending is effected by the RBWTP at the Neroly blending facility, which receives water conveyed from the Los Vaqueros Reservoir via a pipeline varying from six to eight feet in diameter.

Groundwater Wells

In addition to the surface water supply from CCWD, DWD is developing a groundwater supply system. Groundwater from one or more wells located in the City of Oakley will be conveyed by dedicated well supply pipelines to a blending facility near the Randall-Bold WTP. The first well, Glen Park Well near March Creek, was put into service in 2006. The Glen Park Well has a pumping capacity of approximately 1.5 mgd.

DWD may implement additional wells as "future phases" with specific locations to be determined as part of future well siting studies.

The CCWD anticipates that groundwater supply until 2020 is from the Glen Park Well only, assuming an average 1.5 mgd pumping capacity. By 2020, the CCWD assumes that an additional well(s) will be constructed that will provide an additional 1.5 mgd capacity. By 2030, an additional 1.5 mgd well capacity is provided. Ultimately, groundwater may provide a total capacity of approximately six to seven mgd.

Expansion of the groundwater supply system is based upon the performance of the Glen Park Well. As the Glen Park Well is implemented and operated, ongoing data collection and monitoring conducted by DWD will be provided. DWD will monitor groundwater levels and consult other well operators to monitor effects on other wells in the region. In the event local wells were to be adversely affected, mitigation actions would be made on a case-by case basis, and may include, supplying the property with different sources of water, lowering or replacing pumps, or installing new wells.

Randall-Bold Water Treatment Plant

The Randall-Bold Water Treatment Plant, completed in 1992, is jointly owned by DWD and CCWD. CCWD operates the plant under a Joint Powers Agreement between the two agencies that specifies the terms of the contractual arrangement for ownership and operation.

The facility has a capacity of 40 mgd with an expansion capability of up to 80 mgd. The initial treatment capacity is allocated with 15 mgd to DWD (37.5 percent share) and 25 mgd to CCWD. DWD is entitled to increased capacity, from 15 mgd to 30 mgd, provided the incremental increases are no less than five mgd in any single increment. DWD must notify CCWD of the need for additional capacity at least three years prior to the date such capacity is required.

Diablo Water District (DWD)

The proposed River Oaks Crossing Specific Plan site is located in the City of Oakley. The Diablo Water District (DWD) is the water purveyor to the City, including the proposed Project. DWD's service area encompasses the northeastern corridor of Contra Costa County including the City of Oakley, the Town of Knightsen, and portions of Bethel Island. DWD currently serves a population of approximately 28,000 residents of the City of Oakley. Under the City of Oakley's adopted General Plan, the total build-out population will be approximately 68,000, including approximately 50,000 residents within the existing City limits and 18,000 in the City's expansion area.

Approximately 90 to 95 percent of DWD's raw water supply comes from the Contra Costa Water District (CCWD) via the Contra Costa Canal and Los Vaqueros Reservoir. All surface water is treated at the Randall-Bold Water Treatment Plant (RBWTP), which is jointly owned by DWD and CCWD. When the RBWTP was put into operation in 1992, the treatment plant had an initial capacity of 40 million gallons per day (mgd) with expansion capability to 80 mgd. The initial allocation of water to DWD from CCWD is 15 mgd, with a future maximum allocation of 30 mgd. This future allocation is to be made in increments of 5 mgd under the condition that CCWD is notified at least three years prior to the date such capacity is required.

For purposes of comparing DWD's allocation to CCWD's total water supply, 15 mgd and 30 mgd translate into approximately 16,800 and 33,500 ac-ft/yr respectively. Therefore, in a normal year DWD would initially claim approximately 6.9 percent of CCWD's total water supply under ideal conditions, and approximately 7.3 percent of the firm supply. Under the maximum allocation, in a normal year, DWD would claim approximately 13.8 percent of CCWD's water supply under ideal conditions and 14.6 percent of CCWD's firm water supply.

In addition to the surface water supplies from CCWD, DWD is implementing a groundwater supply system to supplement the raw water supplied by CCWD during peak summer demand periods, or if there is a limitation imposed on Contra Costa Canal supply.

Since 1991, a number of changes have occurred requiring that DWD review and update the districts water system planning to ensure adequate capacity for existing and future customers. In 1993, Oakley Water District became Diablo Water District, with a service boundary that includes the community of Oakley, as well as unincorporated lands in the greater Oakley area. DWD's sphere of influence has also grown to include the Cypress Corridor, Hotchkiss Tract, Veale Tract, and Knightsen. DWD may also provide service to Bethel Island in the future. In 2005, based on DWD's analysis of the changes in the districts sphere of influence (SOI), DWD prepared the Diablo Water District Urban Management Plan.

Diablo Water District Urban Water Management Plan Update

The Diablo Water District (DWD) Urban Water Management Plan Update was adopted in December 2005. Historically, 98 percent of the DWD's customers are residential and the remaining two percent are primarily commercial with some landscape irrigation. DWD does not provide any water for agricultural uses. Between 1995 and 2004, the total number of customer connections increased by approximately 31 percent, an average annual growth rate of approximately three percent per year. The East Contra Costa County area, including DWD's service area, is experiencing high growth. Accordingly, DWD calculated water use

projections in five-year increments from 2005 to 2040 (Tables 3.13-1- and 3.13-2). Buildout water usage for each customer sector was calculated using buildout land uses from the City of Oakley General Plan, the East Cypress Corridor Specific Plan, and the Contra Costa County General Plan.

Table 3.13-1
Projected Water Use

Customer Sector (Millions of Gallons)								
Year	**Residential**		**Commercial Business Park, & Light Industrial**	**Heavy Industrial**	**Institutional (Public & Schools)**	**Parks & Landscape Irrigation**	**Unaccounted for System Losses**	**Total (MG)**
	Single Family	**Multi-Family**						
2005	1,590	45	5	0	10	35	100	1,785
2010	1,934	124	147	70	40	51	140	2,467
2015	2,279	204	289	140	70	68	180	3,149
2020	2,623	283	431	210	100	84	220	3,831
2025	2,967	362	574	280	130	101	260	4,514
2030	3,311	441	716	350	160	117	290	5,186
2035	3,656	521	858	420	190	134	330	5,868
2040	4,000	600	1,000	400	220	150	380	6,750

Source: Diablo Water District Urban Water Management Plan, December 2005.

Table 3.13-2
Current and Projected Water Supplies

Water Source Supplies	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Surface Water Purchased from CCWD	2,738 MG	2,738 MG	3,650 MG	3,650 MG	4,562 MG	4,562 MG	5,457 MG	5,457 MG
DWD Groundwater	0	547 MG	547 MG	1,095 MG	1,095 MG	1,642 MG	1,642 MG	2,189 MG
Supplier Produced Diversions: None								
Transfers: Only as supplied by CCWD and included in surface water purchased from CCWD – See DWD's Urban Water Management Plan Section 6.4								
Exchanges: Only through CCWD and including in surface water purchased from CCWD – See DWD's Urban Water Management Plan								
Recycled Water: Section DWD's Urban Water Management Plan Section 5								
Desalinization: Section DWD's Urban Water Management Plan Section 4.4								
Total Supply	2,738 MG	3,285 MG	4,197 MG	4,745 MG	5,657 MG	6,204 MG	7,099 MG	7,646 MG

Source: Diablo Water District Urban Management Plan, December 2005, Table 4-1.[5]

DWD's primary water supply is treated surface water from the CVP, purchased from CCWD. CCWD, in turn, contracts with the USBR for delivery of CVP water supplies. CVP water is conveyed through the Contra Costa Canal, and treated at the Randall-Bold Water Treatment

Plant (WTP) in Oakley, which is jointly owned by DWD and CCWD. DWD is also beginning to develop a groundwater supply system to provide additional supply reliability. Canal water can also be supplemented by surface water stored at Los Vaqueros Reservoir. Owned and operated by CCWD, the Los Vaqueros Reservoir is a large 100,000 acre-foot storage facility located eight miles south of Brentwood. In May 2005, CCWD renewed their water service contract with the USBR for a period of 40 years, through February 2045.

To accommodate the buildout of DWD's ultimate service area will require the purchase of additional excess capacity at the current WTP, which has a design capacity of 40 mgd and is expandable to 80 mgd. The Randall-Boyd WTP was designed assuming that the treatment plant would be expanded in the future to service future development within the planned service area. The WTP anticipates that DWD will purchase five mgd additional capacity in 2015, 2025, and 2035 in order to meet the district's needs.

Groundwater Supply

As described in the Urban Water Management Plan update (November 1, 2005), DWD is currently implementing a new groundwater supply system to provide additional supply reliability, known as the Well Utilization Project. Groundwater from the Well Utilization Project, located in the City of Oakley, will be conveyed by a dedicated well supply pipeline to a blending facility near the Randall-Bold WTP. The first well, Glen Park Well near March Creek, was put into service in 2006. The well has a pumping capacity of 1.5 mgd. DWD anticipates that groundwater supply until 2020 is for the first well only. By 2020, additional well(s) will be constructed that will provide an additional 1.5 mgd capacity. Ultimately, groundwater may provide up to 20 percent of the DWD's water supply, which would be a total ultimate well capacity of 6 to 7 mgd.

The Well Utilization Project wells will be developed in a groundwater basin that has been studied since the late 1990's by Luhdorff and Scalmanini Consulting Engineers (LSCE) (See Investigation of Ground-Water Resources in the East Contra Costa Area, Luhdorff & Scalmanini, March 1999). The groundwater basin is not adjudicated, and has not been studied by the California Department of Water Resources. The groundwater basin is currently not overdrafted. The DWD wells will be located within the region identified as the Marginal Delta Dunes. When groundwater is withdrawn from an aquifer, groundwater levels are lowered around the well, creating a cone of depression.

The 1999 Investigation of Ground-Water Resources in the East Contra Costa Area by Luhdorff & Scalmanini stated that historical conditions suggest that for much of the Alluvial Plain and Marginal Delta Dune regions, extraction activates have not exceed the sustainable yield of the groundwater system. Sustainable

yield is unlikely to be exceeded because of the general lack of groundwater development throughout much of these areas. Areas in the vicinity of the river and Delta systems have a large source of potential recharge, which could offset potential adverse impacts due to increased extraction. The Urban Water Management Plan update describes the potential for such impacts causing decreased productivity in existing wells from this process to be low. The Glen Park Well site was chosen based on a regional groundwater investigation, and due to the areas deep annular seal, which will serve to isolate the walls of the well from significant pumping impacts. The Urban Water Management Plan (UWMP) predicted a depression of approximately ten feet of draw down at the City of Brentwood Well 14 when pumping at three mgd for 30 days. However, the investigation pumping is greater than the anticipated one to two mgd well capacity at the Glen Park site. In April 2004 testing indicated that additional pumping at the Glen Park site did not have a measurable impact on groundwater levels at the Brentwood site.

The 1999 Investigation of Ground-Water Resources in the East Contra Costa Area by Luhdorff & Scalmanini also indicates that groundwater extraction on a local level may induce some degradation by nitrate. However, these influences can be mitigated through well design practices. DWD will continue to monitor groundwater levels and consult with other well operators to monitor effects on the other wells in the region. In the event local wells were to be adversely affected (i.e. lowering of groundwater below existing pumps or degradation of water quality), mitigation actions would be taken on a case by case basis and could include supplying the property with a different source of well water, lowering or replacing pumps, or installing new wells. It should be noted, however, that the Project would not rely on groundwater as a source of water supply because DWD has sufficient surface supplies to serve buildout of the area, which is expected to occur between 2010 and 2015. It should be further noted that the impervious surfaces associated with the proposed Project would not be expected to substantially interfere with groundwater recharge in the vicinity of the Project area.

Additionally, DWD requires that parks and landscaped areas in new development areas irrigate landscaped areas with groundwater, not with DWD water.

Supply and Demand

As documented in the Urban Water Management Plan update, DWD has adequate supply sources to meet future needs under all conditions, normal, dry and multiple dry water years (See Tables 3.13-3, 3.13-4 and 3.13-5).

To address long-term demand, both CCWD and DWD are undertaking a number of programs to supplement CCWD's current entitlements, including: water transfers, annual purchases of supplemental water, water recycling (CCWD only), conservation, and improvement of water quality and water storage capacity

(Los Vaqueros). For example, to date CCWD's water conservation program has already demonstrated significant success. The measures are set forth in detail in the DWD and CCWD 2005 Urban Water Management Plans, as well as CCWD's 2002 Future Water Supply Study and DWD's 2005 Technical Memorandum.

Table 3.13-3
Projected Supply and Demand Comparison for Normal Year (MG)

	2005	2010	2015	2020	2025	2030	2035	2040
Surface Water From CCWD	2,738	2,738	3,650	3,650	4,562	4,562	5,457	5,457
DWD Groundwater	0	547	547	1,095	1,095	1,642	1,642	2,189
Supply Total	2,738	3,285	4,197	4,745	5,657	6,204	7,099	7,646
Demand	1,685	2,324	2,964	3,603	4,242	4,881	5,521	6,350
Difference (Surplus of Supply)	1,053	961	1,233	1,142	1,415	1,323	1,578	1,296

Source: Diablo Water District SB 610 WSA, April 30, 2007.

Table 3.13-4
Projected Supply and Demand Comparison for Single Dry Year (MG)

	2005	2010	2015	2020	2025	2030	2035	2040
Surface Water From CCWD	2,738	2,738	3,650	3,650	4,562	4,562	5,457	5,457
DWD Groundwater	0	547	547	1,095	1,095	1,642	1,642	2,189
Supply Total	2,738	3,285	4,197	4,745	5,657	6,204	7,099	7,646
Demand	4,685	2,324	2,964	3,603	4,242	4,881	5,521	6,350
Difference (Surplus of Supply)	1,053	961	1,233	1,142	1,415	1,323	1,578	1,296

Source: Diablo Water District SB 610 WSA, April 30, 2007.

Table 3.13-5
Projected Supply and Demand Comparison for Multiple Dry Year Period (MG)

	2005	2010	2015	2020	2025	2030	2035	2040
Surface Water From CCWD	2,738	2,738	3,103	3,103	3,878	3,878	4,638	4,638
DWD Groundwater	0	547	547	1,095	1,095	1,642	1,642	2,189
Supply Total	2,738	3,285	3,650	4,198	4,973	5,520	6,280	6,827
Demand	1,685	2,324	2,964	3,603	4,242	4,881	5,521	6,350
Difference (Surplus of Supply)	1,053	961	686	595	731	639	759	447

Source: Diablo Water District SB 610 WSA, April 30, 2007.

Constraints on DWD Water Supplies

In addition to potential future drought conditions (both single-year and multi-year), as well as anticipated increases in demand for potable water, the Urban Water Management Plan update identifies several regulatory constraints on the Project's future water supply. Those constraints include: approvals from CCWD, and USBR; compliance with the federal Endangered Species Act (ESA); and implementation of the CVPIA.

As a federal approval, CCWD's water contracts with USBR must comply with Section 7 of the ESA. Under Section 7, USBR must consult with the U.S. Fish

and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries on any federal action which "may affect" a federally listed species or adversely modify critical habitat. In conjunction with CCWD's Future Water Supply Implementation Program and renewal of the district's CVP long-term water service contract, USBR consulted with the USFWS under Section 7. On March 11, 2005, USFWS issued a biological opinion, which amended the service's April 27, 2000 biological opinion and evaluated the direct, indirect, and cumulative effects of CCWD's water supply program and long-term contract renewal. The amended biological opinion concluded that the proposed action (USBR's approval of CCWD's water supply program and long-term contract) was not likely to jeopardize the continued existence of any federally listed species or result in the destruction or adverse modification of critical habitat. To address the indirect effects of the proposed action on upland species within CCWD's service area, the USFWS conditioned the opinion on CCWD's agreement to limit water deliveries to not more than 148,000 ac-ft annually until an incidental take permit is issued for the East Contra Costa County Habitat Conservation Plan (HCP). To address this limitation on water deliveries, the USFWS and CCWD joined with several local jurisdictions (including the City of Oakley) to prepare an HCP for East Contra Costa County. A Draft of the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (Draft HCP) was issued in June 2005 for public review and comment. Following the comment period, the Final HCP was prepared and released in October 2006. The Final HCP was approved on August 6, 2007.

In addition to the ESA, delivery of CVP water may be subject to the CVPIA. Enacted in 1992, the CVPIA amended the Central Valley Project Act, which governs USBR's operation and maintenance of the CVP. Specifically, the CVPIA added the environment as one of several Project purposes; along with water supply for agricultural, industrial, and municipal uses. The CVPIA included provisions for dedicating additional water to in-stream uses, an agricultural land retirement program, a restoration fund for acquiring aquatic habitats and other environmentally oriented projects, water conservation, and long-term contract renewals. The CVPIA also supports the transfer of CVP water supplies from agricultural to municipal water supplies. Moreover, consistent with CVP water contracting requirements under Section 3406 of the CVPIA, water conservation measures must be adopted and implemented by any recipients of federal CVP water supplies. Consistent with the CVPIA, USBR renewed CCWD's long-term contract in 2005. The terms of CCWD's long-term contract were considered in the Urban Water Management Plans adopted by CCWD and DWD in December 2005.

Solid Waste Collection, Disposal, and Recycling

Oakley Disposal Service, since 1976, has provided residential and commercial solid waste collection and recycling service to the City of Oakley. Contra Costa

Waste Service and Mt. Diablo Recycling are affiliates of Oakley Disposal Service and provide recycling services and waste diversion programs.

Oakley Disposal Service

Solid waste collected by Oakley Disposal in the City limits of Oakley is hauled to the recycling Center and Transfer Station in Pittsburg, which is operated by Contra Costa Waste Service. Residential, commercial, and industrial waste is processed at this transfer facility and the residual material is hauled to Potrero Hills Landfill (PHLF) outside Suisun City. PHLF is permitted to accept waste through 2015, with the potential expansion of 50 additional years.

Mt. Diablo Recycling

Oakley Disposal Service provides weekly curbside recycling service whereby each residential customer is provided two 12-gallon crates for discarding recyclables. Green waste service is provided on a bi-weekly basis. The curbside material is transported to the Concord Facility (Mt. Diablo Recycling) where the recyclables are sorted and moved to the appropriate markets for processing, composting, etc.

Regulatory Environment

Existing policies, laws and regulations that would apply to the proposed Project are summarized below.

Federal Regulations

Clean Water Act (CWA) / National Pollutant Discharge Elimination System Permits (NPDES)

The CWA is the cornerstone of water quality protection in the United States. The statute employs a variety of regulatory and nonregulatory tools to sharply reduce direct pollutants discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water." The CWA regulates discharges from "non-point source" and traditional "point source" facilities, such as municipal sewage plants and industrial facilities. The CWA makes it illegal to discharge pollutants from a point source to the waters of the United States. Section 402 of the Act creates the NPDES regulatory program. Point sources must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory). NPDES permits cover industrial and municipal discharges, discharges from storm sewer systems in larger cities,

storm water associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than one acre, mining operations, and animal feedlots and aquaculture facilities above certain thresholds. All so-called "indirect" dischargers are not required to obtain NPDES permits. An indirect discharger is one that sends its wastewater into a city sewer system, so it eventually goes to a sewage treatment plant (POTW). Though not regulated under NPDES, "indirect" discharges are covered by another CWA program, called pretreatment. "Indirect" dischargers send their wastewater into a city sewer system, which carries it to the municipal sewage treatment plant, through which it passes before entering surface water. Permit requirements for treatment are expressed as end-of-pipe conditions. This set of numbers reflects levels of three key parameters: (1) biochemical oxygen demand (BOD), (2) total suspended solids (TSS), and (3) pH acid/base balance. These levels can be achieved by well-operated sewage plants employing "secondary" treatment. Primary treatment involves screening and settling, while secondary treatment uses biological treatment in the form of "activated sludge."

National Pretreatment Program

The National Pretreatment Program is a cooperative effort of federal, State, and local regulatory environmental agencies established to protect water quality. The program is designed to reduce the level of pollutants discharged by industry and other non-domestic wastewater sources into municipal sewer systems, and thereby, reduce the amount of pollutants released into the environment through wastewater. The objectives of the program are to protect the Publicly Owned Treatment Works (POTW) from pollutants that may interfere with plant operation, to prevent pollutants that may pass through untreated from being introduced into the POTW, and to improve opportunities for the POTW to reuse wastewater and sludges that are generated. The term "pretreatment" refers to the requirement that non-domestic sources discharging wastewater to POTWs control their discharges, and meet limits established by EPA, the State or local authority on the amount of pollutants allowed to be discharged. The control of the pollutants may necessitate treatment prior to discharge to the POTW (therefore the term "pretreatment"). Limits may be met by the non-domestic source through pollution prevention techniques (product substitution recycle and reuse of materials) or treatment of the wastewater.

The Federal Safe Drinking Water Act (SDWA), which was enacted in 1974, gives the United States Environmental Protection Agency (EPA) the authority to set standards for contaminants in drinking water supplies. The SDWA was amended in 1986 and amended and reauthorized in 1996. For each of the 83 contaminants listed in the SDWA, the EPA sets a maximum contaminant level or treatment technique for contaminants in drinking water.

State Regulations

California Public Utility Commission

The California Public Utility Commission (PUC) regulates privately owned electric, telecommunications, natural gas, water and passenger transportation companies, in addition to household goods movers, and the safety of rail transit. Regarding underground gas and oil lines, the PUC passed GO 112-E, Rules Governing Design, Construction, Testing, Maintenance, and Operations of Utility Gas Gathering, Transmission, and Distribution Piping Systems.

Water Supply – SB 610

Senate Bill 610, which took effect January 1, 2002, requires, specific information about water availability be presented and considered by land use agencies during the processing of certain land use entitlement applications. SB 610 applies to projects that include more than 500 residential units or a shopping center over 500,000 square feet.

SB 610 refers to numerous details that must be addressed in the water supply assessment, which are described in portions of the amended Water Code Section 10910:

> (d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system…under the existing water supply entitlements, water rights, or water service contracts.
>
> (2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system […] shall be demonstrated by providing information related to all of the following: (A) Written contracts or other proof of entitlement to an identified water supply. (B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system. (C) Federal, State, and local permits for construction of necessary infrastructure associated with delivering the water supply. (D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.
>
> (e) If no water has been received in prior years by the public water system […] under the existing water supply entitlements, water rights, or water service contracts, the public water system […] shall also include in its water supply assessment […] an identification of

the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water…

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) A description of any groundwater basin or basins from which the proposed project would be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The

description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines…that the sufficiency of groundwater necessary to meet the initial and project demand associated with the project was addressed in its urban water management plan.

Local Regulations

City of Oakley General Plan

The following applicable goals and policies are from the Oakley 2020 General Plan Growth Management Element:

Wastewater Services

Goal 4.9 Assure the provision of sewer collection, treatment and disposal facilities that are adequate to meet the current and projected needs of existing and future residents.

Policy 4.9.1 Coordinate future development with the Ironhouse Sanitary District to ensure facilities are available for proper wastewater disposal.

Policy 4.9.2 Wastewater treatment should preserve, and to the extent feasible, enhance water quality and the natural environment.

Policy 4.9.4 Reduce the need for sewer system improvements by requiring new development to incorporate water conservation measures, which reduce flows into the sanitary sewer system.

Water Services

Goal 4.8 Assure the provision of potable water availability in quantities sufficient to serve existing and future residents.

Policy 4.8.1 Coordinate future development with all water agencies to ensure facilities are available for proper water supply.

Policy 4.8.2 Encourage the development of locally controlled supplies to meet the growth needs of the City.

Policy 4.8.3 Encourage the conservation of water resources throughout the City.

Policy 4.8.4 Ensure that new development pays the costs related to the need for increased water system capacity.

Policy 4.8.5 Ensure that water service systems be required to meet regulatory standards for water delivery, water storage, and emergency water supplies.

Policy 4.8.12 Reduce the need for water system improvements by encouraging new development to incorporate water conservation measures to decrease peak water use.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, an impact to utilities of the proposed Project area would be considered significant if the proposed Project would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- 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;
- Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed;

- 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;
- Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs;
- Comply with federal, state, and local statutes and regulations related to solid waste; or
- Increase the demand for electrical and gas services beyond their ability to provide service (Note: Electrical and gas services are discussed in Chapter 3.7 Energy).

Impacts and Mitigation Measures

Basis for Impacts

The proposed Project will add up to 770,000 gross square feet of total floor area (GFA) for occupancy by retail and restaurant uses. The proposed uses would result in additional demands for sanitary sewer collection and treatment, treated water supply, solid waste disposal, and electric and gas supplies. In addition, the physical placement of buildings and improvements on the Project site could conflict with existing storm drainage and natural gas pipelines.

Analysis of Project Impacts

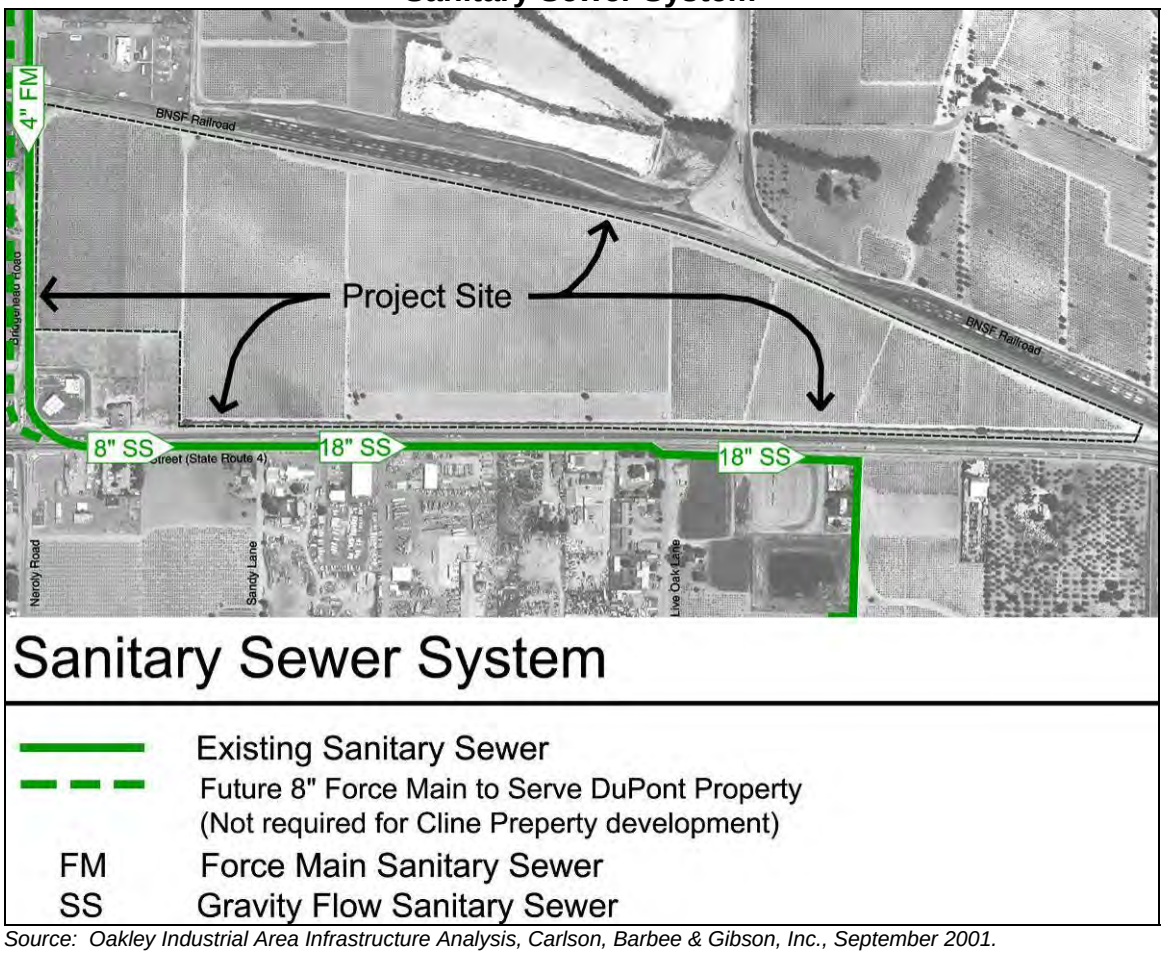
The proposed Specific Plan Project remains subject to compliance with all General Plan policies, including those referenced on pages 3.13-18 and 3.13-19. These policies would be implemented through the provisions of the Specific Plan, or would be carried out through the mitigation measures recommended in this Draft EIR.

Impact USS-1 - Increased Demand on Existing Wastewater Facilities

Ironhouse Sanitary District (ISD) provides wastewater treatment for the Project area. The ISD's new Wastewater Treatment Facility (WTF) has a capacity of three million gallons per day (mgd). The ISD's capacity is based upon supplying wastewater services to the entirety of the ISD's jurisdictional area at capacity, based upon the buildout anticipated in the City of Oakley General Plan. The current average dry weather flow into the WTF is approximately 2.6 mgd. Although the design capacity is 3.0 mgd, due to increased BODs, the ISD's WTF is rapidly approaching capacity, which is estimated at 2.7 mgd. In order to provide adequate capacity (3.0 mgd) until a new wastewater treatment plant is constructed and operable, ISD is removing solids from the treatment cells and effluent storage ponds on an annual basis.

The proposed Project would result in an increased demand on existing sewage and wastewater systems in the vicinity of the site (See Figure 3.13-1, Sanitary Sewer System). For the purposes of calculating wastewater volume, retail stores are the equivalent of 0.5 residential units per 1,000 square feet. The proposed Project would include 770,000 square feet of retail space, which would be equal to approximately 385 residential units (770,000 / (1,000x0.5). Based upon ISD standards, residential units would be expected to produce 225 gallons per day. Therefore, the proposed Project would be expected to produce a total of 86,625 gallons of wastewater daily (385 x 225). This would result in a total generation of .087 mgd. However, the above estimate does not include restaurant uses, which would be notably higher than standard commercial uses.

Figure 3.13-1
Sanitary Sewer System



Source: Oakley Industrial Area Infrastructure Analysis, Carlson, Barbee & Gibson, Inc., September 2001.

Assuming that the restaurant use would produce an additional .003 mgd, a conservative estimate would calculate that the proposed Project would produce approximately .09 mgd. As stated above, the WTF's currently operates at 2.6 mgd; the development of the River Oaks Crossing Specific Plan would increase this to 2.69 mgd, well below the WTF's three mgd capacity. In addition, the

development associated with the proposed Project would be less than or equal to the level of development for the Project area as analyzed under the 2020 Oakley General Plan EIR, which found the impact to be less-than-significant after implementation of the General Plan Policies and Programs.

However, each individual improvement plan within the proposed Specific Plan area would be required to construct necessary sewage drainage lines to the ISD gravity trunk line located in Main Street. Should the improvement plans fail to provide adequate access to the Main Street trunk line, a ***potentially significant*** impact would result. The following mitigation measure would ensure that all improvement plans within the Specific Plan area meet the approval of the City and ISD to ensure that this impact is reduced to a ***less-than-significant*** level.

Mitigation Measure(s):

USS-1 *Each improvement plan shall provide for connection to the existing ISD gravity trunk line located in Main Street. Improvement plans shall be prepared for each phase of development showing the proposed location and method of connection, to the satisfaction of the City Engineer and ISD. All applicable connection fees shall be paid to ISD at the time of permit issuance.*

Impact USS-2 - Adequate Water Supply and Delivery for the Proposed Project Site

Water demand factors for the land use types are obtained from the UWMP, (DWD, 2005). The DWD provides water service to Oakley. The DWD's unit water demand for commercial and industrial uses is 2,250 gallons per day (gpd) per acre. This water demand is intended to be applied over a gross area rather than an individual building footprint. The estimated water demand for the proposed Project land uses, as provided by the City, is presented in Table 3.13-6. The total proposed Project demand for all alternatives is estimated at 172,000 gpd or 192.7 acre-feet per year (AFY). One acre-foot (AF) of water is approximately 325,829 gallons of water.

Table 3.13-6
Estimated Water Demand for Proposed Project

Land Use Designation (Industrial)	Building Area (ft^2)	Gross Area (acre)	Water Demand Rate (gpd/acre)	Estimated Water Demand (gpd)	Estimated Water Demand (AFY)
Hotel	30,000				
Restaurant	69,000				
Retail	591,000				
Total Project	3,327,984	76.4	2,250	172,000	192.7

Water Demand Rate of 2,260 gpd is based upon District Standards.
Source: Diablo Water District SB 610 WSA, April 30, 2007.

The City of Oakley requested the DWD to prepare a Water Supply Assessment for the proposed Project pursuant to California Water Code, Sections 10910-10915. On May 31, 2007 the DWD adopted Resolution No. 2007-5, the Water Supply Assessment for the River Oaks Crossing Specific Plan Project (See Appendix J). The WSA concludes that the proposed Project would create a maximum estimated water demand of 172,000 gpd (192.7 AFY). The DWD has included the development area and the expected demand associated with the buildout of the Project area within the DWD's Urban Water Management Plan (UWMP). The UWMP identifies the availability of sufficient water supply to meet future needs projected to build out at 2040 under all conditions including normal, single dry year, and multiple-dry years.

The WSA concludes that sufficient water supply exists to support the proposed River Oaks Crossing Specific Plan Project as described above. Based upon the WSA, Urban Water Management Plan, and the supporting data referenced in the WSA, the City has independently confirmed the conclusions in DWD's WSA.

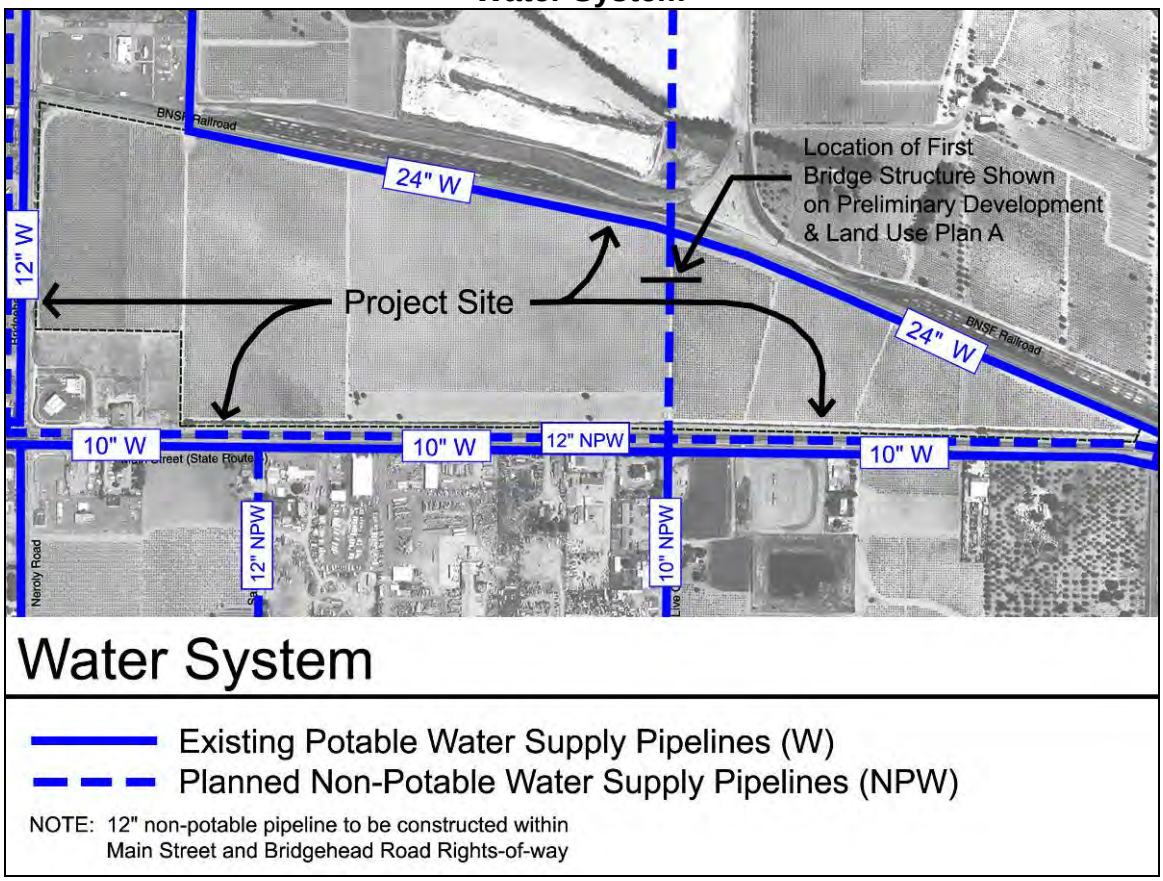
The DWD's 2006 Facilities Plan contains a detailed plan for major water system improvements that will be implemented to serve new development, including the Project area, and is based on the same demand projections of the UWMP. However, the proposed Project would necessitate the expansion of existing water pipelines to the Project area for delivery of water, and the proposed Project would be required to participate in funding programs to facilitate the Project's fair-share costs of improvements to existing facilities (See Figure 3.13-2, Water System).

Although the review of the River Oaks Crossing Specific Plan and the standards identified in the City of Oakley General Plan and the WSA conclude that adequate water supplies would be available, the development of the proposed Project would necessitate the buildout of infrastructure in accordance with DWD's Capital Improvement Program and other off-site improvements. Therefore, the impact on water supply and delivery would be considered ***potentially significant***. Implementation of the mitigation measures included below would reduce this impact to a ***less-than-significant*** level.

Mitigation Measure(s):

USS-2 *Prior to approval of improvement plans, the applicant shall be required to pay a fair share fee as determined by the DWD toward the CIP for water service infrastructure improvements.*

Figure 3.13-2
Water System



Source: Oakley Industrial Area Infrastructure Analysis, Carlson, Barbee & Gibson, Inc., September 2001.

Impact USS-3 - Need for Additional Waste Disposal/Recycling Services

Currently, the residents of the City of Oakley privately contract with Oakley Disposal Service for solid waste disposal and recycling services. Oakley Disposal provides both solid waste disposal service and recycling services. Solid waste collected within City limits is taken to the Pittsburg Recycling Center and Transfer Station for separation and all non-recyclable waste is hauled to the Potrero Hills Landfill. The Potrero Hills Landfill is located two miles southeast of Suisun City. The facility is permitted to accept waste until 2015 with a potential expansion for an additional fifty years (until 2065).

The curbside recyclable material collected in Oakley is transported to the Concord Facility for recycling, which is managed by Mount Diablo Recycling, an affiliate of Oakley Disposal Services. The recyclable materials are separated and transported to the appropriate market.

The addition of new business associated with the proposed Project would necessitate increased waste disposal and recycling personnel and equipment.

However, the River Oaks Crossing Specific Plan mandates that all developments within the planning area incorporate systems for recycling waste components such as motor oil, passenger and truck tires, passenger and truck batteries, cardboard, vegetable oil, single-use cameras, bottles and cans, plastic waste, and electronic waste silver. The Specific Plan also specifies that all buildings over 200,000 square feet use 80 percent recycled steel in the construction of the buildings and 80 percent recycled plastic for all baseboards and plastic shelving within the Major Retail land uses. In addition, the Oakley Disposal Service, the Recycling Center, and the Potrero Hills Landfill have adequate capacity to serve the Project. The addition of new businesses would be accommodated by the payment of operational fees. Therefore, the proposed Project would have a ***less-than-significant*** impact on solid waste disposal and recycling.

Cumulative Impacts

In terms of cumulative impacts to water supply and delivery, and waste/disposal recycling services, the City of Oakley General Plan designates the Project site for similar uses and the General Plan EIR concluded that the impacts associated with the buildout of utilities to support the growth projected under the General Plan would be less-than-significant. Therefore, because the DWD Master Plan is based upon the buildout of the City of Oakley General Plan, and because the development of the proposed Project is generally consistent with the buildout anticipated by the General Plan, the cumulative increase in demand associated with the proposed Project would be consistent with the anticipated long-term development associated with the Oakley Area. Therefore, the proposed Project would have a ***less-than-significant*** cumulative impact to water supply and delivery, and waste/disposal recycling services for the Project site.

Impact USS-4 – Cumulative Impacts to Increased Demand on Existing Wastewater Facilities

The proposed Project would result in an increased demand for utilities in the vicinity of the proposed Project, including an increased demand on existing sewage and wastewater systems. The proposed Project's total estimated production of 0.9 mgd of wastewater would increase the WTF's current average dry weather flow to 2.69 mgd, which would be well below the WTF's three mgd capacity. However, because the proposed Project takes 0.9 mgd of capacity from the WTF, the Project could result in a ***potentially significant*** cumulative impact to long-term wastewater services. The implementation of the following mitigation measures would reduce this potential impact to a ***less-than-significant*** level.

Mitigation Measure(s):

USS-4 *Prior to issuance of building permits, the applicant shall pay applicable trunkline and plant capacity fees to the ISD for the new WWTP.*

Endnotes

[1] City of Oakley, *Oakley 2020 General Plan,* August 30, 2002.
[2] City of Oakley, *Oakley 2020 General Plan Draft Environmental Impact Report*, September 2002.
[3] Diablo Water District, *2008/2009 Capital Improvement Program*.
[4] Diablo Water District, *Facilities Plan*, 2006.
[5] It should be noted that the figures shown in this table for "Surface Water Purchased from CCWD" for years 2035 and 2040 (i.e., 5,457 MG) differ from those shown in Table 4-1 of the 2005 Diablo Water District Urban Water Management Plan (i.e., 5,475 MG). Also, the figure shown in this table for "Total Supply" for the year 2030 (i.e., 6,204 MG) differs from that shown in Table 4-1 of the 2005 Diablo Water District Urban Water Management Plan (i.e., 5,657). These changes reflect the correction of clerical errors contained in the 2005 Diablo Water District Urban Water Management Plan. Note, however, that these changes are consistent with Tables 7-1 through 7-3 of the Urban Water Management Plan, which tables contain the correct figures. (Source: Lisa House, P.E.; CDM, consultant to the Diablo Water District and preparer of the 2005 Diablo Water District Urban Water Management Plan).

3.14 AESTHETICS (AES)

This section of the EIR describes the existing aesthetic values of the Project site and the region, and assesses the impacts on aesthetics resulting from approval and implementation of the Specific Plan Project. The California Environmental Quality Act (CEQA) describes the concept of aesthetic resources in terms of scenic vistas, scenic resources (such as trees, rock outcroppings, and historic sites within a state scenic highway corridor), the existing visual character or quality of the Project area, and light and glare impacts. The following impact analysis is based on information drawn from the City of Oakley 2020 General Plan, General Plan EIR, and the General Plan Background Report.

Environmental Setting

Existing Conditions / Local Setting

The Project site is prominently situated at one of the City's principal entries, occupying roughly one mile of Main Street frontage immediately east of the Highway 160 interchange. The topography of the Project site and the City of Oakley is predominantly flat. Oakley's scenic resources include the waterways of the Delta, Dutch Slough, Marsh Creek, habitat areas, and open space land. Other scenic resources include views of Mt. Diablo west of the City. The preservation of scenic resources and view corridors within Oakley, (i.e., Mt. Diablo, Delta, river, etc.), was identified as a significant issue during the General Plan public review process. Views of the Delta are primarily visible from the waterfront marinas. Mt. Diablo is considered a scenic resource by the Oakley 2020 General Plan (p. 6-28), and views of Mt. Diablo can be seen from many locations in the City, including isolated locations looking southwest from Main Street. The rural small town character of Oakley is evident throughout the City, both in the historic downtown area along Main Street, east of the Project site, and in the agricultural areas to the south.

The BNSF Railroad line and switching tracks are situated along the entire northerly Project site boundary, creating a physical barrier and visually prominent backdrop for the Project site. Established and developing commercial uses located along the adjoining frontages of Main Street and Bridgehead Road include fast food restaurants, a hotel and gas stations. Opposite the Project site along Main Street are an existing salvage yard and other commercial uses, which include outdoor storage and business operations, with little frontage landscaping visible from Main Street. Additional developed and undeveloped commercial property is located opposite the east end of the Project site along the south side of Main Street. A residential mobile home park and an open commercial storage use currently occupy the properties north of the railroad tracks, along the west side of Bridgehead Road.

Additional vacant and under-developed properties extend along the west side of Bridgehead Road, north of the BNSF railroad line. This section of land between the railroad tracks and Wilbur Avenue (situated between Bridgehead Road and Highway 160) is situated within the City of Antioch and is planned for Light Industrial uses. The Delta Diablo Sanitary District currently operates a pumping station within a portion of this property in the City of Antioch.

Unique Visual Features

The proposed Project site has nearly one mile of exposed frontage along the north side of Main Street. Grape vines are visible along much of this frontage, with distant views of the Antioch Bridge and a row of mature eucalyptus trees situated in the background. The westerly portion of the site, including additional grape vines, is visible looking east from Bridgehead Road. Several isolated oak trees are visible along both the Main Street and Bridgehead Road frontages of the site.

Views from the Project Site

A few existing features are visible from the site, including distant views of Mt. Diablo, looking southwest from the site. Commercial land uses situated at the northeast corner of Bridgehead Road and Main Street block are prominent features from the westerly end of this property. Looking north, the BNSF Railroad forms a visual edge for the site, with further views of the DuPont Property partially blocked by the elevated tracks.

On-Site Features

The proposed Project site currently supports old growth vineyards. The development of the land uses associated with the River Oaks Crossing Specific Plan would result in the conversion of these old-growth vineyards to commercial land uses.

Project Features

The proposed land plan for the Specific Plan Project site includes planned commercial development, necessary infrastructure improvements, and an elevated extension of Live Oak Avenue that is planned according to the Circulation Element of the General Plan to provide access to the adjoining DuPont Property to the north (See Chapter 2, Project Description, of this Draft EIR for a complete description of Project features).

Regulatory Environment

A number of local policies and regulations provide a context for review and regulation of future development on the Project site. Existing plans and programs

relate directly to the goals of the Oakley 2020 General Plan Open Space and Conservation Element, which provide for goals and policies, which protect existing scenic resources. Enacted through state and local action, these plans and programs are administered by agencies with responsibility for their enforcement.

Heritage Tree Preservation Ordinance (Oakley Municipal Code Section 9.1.1112)

The City's Heritage Tree Preservation Ordinance was adopted as part of the Contra Costa County zoning provisions. The ordinance protects designated heritage trees, preventing the removal of such trees without approval of a tree permit (See Chapter 3.4, Biological Resources, for a complete discussion of existing trees and applicable Heritage Tree Preservation Ordinance requirements).

Tree Preservation Ordinance (Oakley Municipal Code Section 9.1.1114)

Similar to the City's Heritage Tree Preservation Ordinance, the City's Tree Preservation Ordinance applies to not only trees designated as Heritage Trees, but also trees that meet a certain list "Protected Tree" criteria such as being located in a sensitive area (riparian, foothill woodland, or oak savanna), shown as preserved or conditioned to be preserved on a tentative map, or any tree required to be planted as a replacement for an unlawfully removed tree. (See Oakley Municipal Code Section 9.1.1114 (c)).[1]

City of Oakley 2020 General Plan

The following applicable goals and policies related to aesthetic resources from the Oakley 2020 General Plan Land Use Element:

General Land Use

Goal 2.1 Guide development in a manner that creates a balanced and desirable community, maintains and enhances the character and best qualities of the community, and ensures that Oakley remains an economically viable City.

Policy 2.1.3 Promote commercial and residential development that supports the small town character of Oakley. Key elements include scale of buildings, landscaped open areas within projects and safe and accessible multi-use trails.

[1] See also discussion of tree impacts, including the Tree Inventory, under Biological Resources Section 3.4.

Community Character

Goal 2.8 Encourage projects exhibiting excellent design and sensitivity to the community, while preserving the community character of the City of Oakley.

Policy 2.8.8 New development should continue the existing adjacent neighborhood concepts, including street pattern, street trees, setbacks, and scale, as appropriate. Gradual transition of uses shall be strongly encouraged.

The following applicable goals and policies are from the Oakley 2020 General Plan Open Space and Conservation Element:

Goal 6.6 Preserve and enhance existing open space resources in and around Oakley and balance open space and urban areas to meet the social, environmental and economic needs of the City now and for the future.

Scenic Resources

Goal 6.7 Seek to preserve the scenic qualities of the Delta Waterway, Marsh Creek, and views of Mount Diablo.

Policy 6.7.1 Encourage preservation and enhancement of views of the Delta and Mount Diablo to the extent possible.

Policy 6.7.2 New development and redevelopment along the Delta, adjacent to Marsh Creek and throughout the City should take advantage of view opportunities and visual impacts to the waterway and Mount Diablo, respectively.

Thresholds of Significance

Based on the CEQA Guidelines and the City goals and policies, an impact to the aesthetic values of the Project area would be considered significant if any of the following conditions would potentially result from implementation of the proposed Project:

- A substantial adverse effect on views of Mount Diablo;
- Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic sites within a state scenic highway corridor;

- Substantial degradation of the existing visual character or quality of the site and its surroundings;
- Creation of a new source of substantial light or glare that would adversely affect day or nighttime views in the area; or
- Alteration of the existing, agricultural character of the Project site.

Impacts and Mitigation Measures

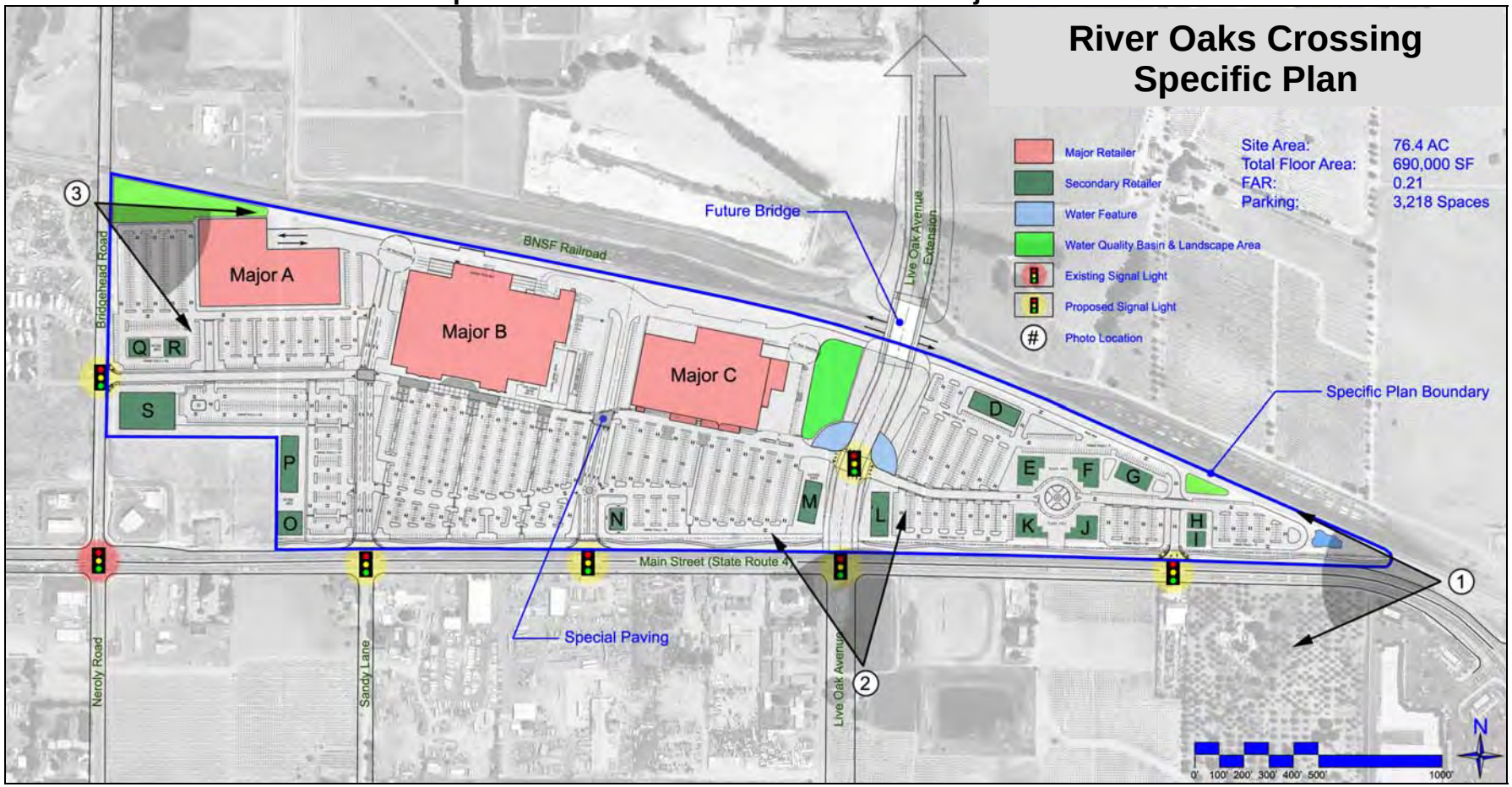
Basis for Impacts

The proposed Specific Plan incorporates a Development Plan (See Figures 2-18 and 2-19) with identified building envelopes for both Major and Secondary Retail uses (see Table 2-1), along with development standards, specifying building height, setbacks and related requirements (see Table 2-2). In addition, a detailed set of Design Guidelines are presented in Section 6.5 of the Specific Plan to establish a unifying approach to building design and site improvements over the entire 76.4-acre site. This section gives full consideration to the development of the Project area, and acknowledges the physical changes to the existing setting. Impacts to the existing environment on the Project site are to be determined by the contrast between the site's visual setting before and after proposed development.

The visual resources of the Project site, as seen from three adjoining public perspectives, are depicted in visual simulation Figures 3.14-2 through 3.14-4. These three viewpoints are identified in Figure 3.14-1, Viewpoint Index for Visual Simulations of Project Site, as Viewpoints 1, 2 and 3. Figures 3.14-2 through 3.14-4 provide a simulated perspective of the commercial building improvements, drawn in preliminary "block" form as seen from the three viewpoints. The height and bulk of the buildings in this set of simulations is proportionately accurate based on the maximum building dimensions outlined in Section 6 of the Specific Plan, while the architectural details of the individual buildings has not been rendered.

Viewpoint 1 is taken from the north side of Main Street looking in a westerly direction. Figure 3.14-2 shows that Secondary Retail Buildings G, H and I, ranging in size from 4,000 square feet to 9,000 square feet, and with overall heights of up to 32 feet, are clearly visible in the foreground, with the larger Major Retail buildings substantially screened in the background. Viewpoint 2 is taken from a point on existing Live Oak Avenue approximately 100 yards south of Main Street, looking north into the Project site.

Figure 3.14-1
Viewpoint Index for Visual Simulations of Project Site



Source: Richard T. Loewke, AICP, July 2007.

Figure 3.14-2
Visual Simulation No. 1 Looking West Along Main Street

Source: Richard T. Loewke, AICP, July 2007.

Figure 3.14-3
Visual Simulation No. 2 Looking North Along Live Oak Avenue

Source: Richard T. Loewke, AICP, July 2007.

Figure 3.14-4
Visual Simulation No. 3 Looking West from Bridgehead Road

Source: Richard T. Loewke, AICP, July 2007.

Figure 3.14-3 provides a simulated view of Secondary Retail Buildings L and M adjoining Main Street, situated on the east and west sides of the future Live Oak Avenue extension. These simulated 10,000 square foot buildings also have a maximum height of 32 feet, with Building M blocking the small, distant view of the Antioch Bridge from this location. Finally, Viewpoint 3 is taken from Bridgehead Road in the vicinity of the northwest Project corner, looking across the Project in a southeasterly direction. Figure 3.14-4 provides a simulated perspective of Major Retail Building A, situated easterly of a parking lot that extends along Bridgehead Road. This perspective of Building A is reflective of all three Major Retail buildings, in that it delineates the majority of the building parapet at a maximum 32-foot height, with localized articulated elements extending up to 45 feet in total height. Unlike the smaller Secondary Retail buildings, Major Retail Buildings A, B and C all maintain a setback of over 300 feet from the adjoining public street frontages.

In this analysis, emphasis has been placed on the transformation of the existing mixed urban and agricultural setting into a landscape characterized by urban buildout. Although few standards exist to singularly define the various individual perceptions of aesthetic value from person to person, the degree of visual change can be measured and described in a reasonably objective manner in terms of visibility and visual contrast, dominance, and magnitude. Current residents are considered to be sensitive to the visual and aesthetic transformations in the Project area as a result of future development.

Analysis of Project Impacts

The Development Standards contained in Section 6 of the Specific Plan include standards for: (a) the phasing of individual improvement plans; (b) building and envelope improvements; (c) site improvements; (d) parking; and (d) design of individual Project phases based on consistency with the Development Plan. The standards provide a regulatory context to guide the design of future development, in order to avoid potentially significant degradation of the existing visual character and quality of the site and its surroundings, and to avoid the creation of potentially significant new sources of substantial light or glare that would adversely affect day or nighttime views in the area. The following discussion of Project-specific impacts is based on implementation of the Specific Plan Project.

Impact AES-1 - Impacts to scenic vistas and natural resources along scenic highways

Currently, the rural setting surrounding the Project area provides views of open agricultural areas to the north, with limited views of Mt. Diablo to the west. The adjoining properties at the northeast corner of Main Street and Bridgehead Road are currently under development, and will provide additional commercial uses when completed. The commercial development of the Project site, as envisioned

in the Specific Plan, would be consistent with the City of Oakley General Plan designation, which calls for future commercial uses.

As previously mentioned, Mt. Diablo can be seen from the Project site and is considered a scenic resource by the Oakley 2020 General Plan. The proposed Project would be situated north of Main Street, with the bulk of proposed building backing mass backing up to the BNSF railroad line. As a result, the proposed development is not expected to significantly alter the distant views of Mt. Diablo from the Project site. As depicted in Figure 3.14-3, a small isolated view of a portion of the Antioch Bridge would be obscured by development of Secondary Retail Building M, looking northwest from the intersection of Main Street and Live Oak Avenue. This effect is not considered to be significant, because the development would not obstruct any views for highly populated areas and would therefore, not present a significant impact to a large number of people.

The Project site is also bordered on the north by vacant and agricultural land uses that are designated in the City of Oakley 2020 General Plan for future industrial and commercial development. The proposed Project is separated from the properties to the north by the raised BNSF rail line, which acts as a visual barrier. Sensitive receptors do not currently exist on-site to the north of the proposed Project, and the BNSF rail line would act as a visual barrier between the proposed Project and any future development to the north of the proposed Project.

The nearest residential uses are situated to the east of Big Break Road and on the west side of Bridgehead Road. Therefore, very few residents exist in the Project vicinity that would be affected by the Project. The proposed Specific Plan would result in development of commercial land uses, consistent with the City of Oakley General Plan. The proposed Project would not result in any significant obstructions of existing or future views of Mt. Diablo or any other scenic vistas as identified by the General Plan. Therefore, consistent with the Oakley 2020 General Plan Draft Environmental Impact Report, the impact of the proposed Project to scenic resources would be considered ***less-than-significant*** and mitigation would not be required.

Impact AES-2 - Degradation of the existing visual character or quality of the Project site or Project area

The development associated with the proposed Project may have impacts on the visual character or quality of Oakley. Currently, the character of Oakley is that of a primarily low-density residential community, with a downtown area. The proposed Project consists of a planned commercial development. Development of the proposed Project would provide needed goods and services to residents of Oakley who must currently travel outside of Oakley to access such these amenities. The Project would therefore contribute to the character of the City, helping to provide a stronger sense of identity in Oakley. The Oakley General

Plan includes policy direction that would help to reduce impacts of proposed development including General Plan Policy 2.8 specifies that new developments should continue neighborhood design concepts such as roadway patterns, trees, setbacks and Policy 2.1.3 which aims to protect the small-town character of the City of Oakley.

The architecture and landscape architecture elements proposed for the River Oaks Crossing Specific Plan Project would contribute to preserving the community character (GP Policy 2.1.3). Section 6.5 of the Specific Plan establishes a comprehensive set of Design Guidelines, including standards for: (a) building envelopes; (b) entries, circulation and parking; (c) landscape setbacks and buffering; (d) trash enclosures, loading areas and mechanical equipment; (e) building design; (f) landscape and plaza area improvements; (g) streetscape improvements; (g) street furniture and lighting; (i) street trees; and (j) on-site signs. Minimum 20-foot landscaped setbacks are to be established along Main Street, Bridgehead Road and future Live Oak Avenue. All parking areas are to include landscaped pedestrian pathways and shade trees planted at a ratio of one tree for each six parking spaces (with additional trees in landscaped areas). Public plazas are reflected in the Development Plan and would be incorporated into the phased development adjoining both Major and Secondary Retail buildings. These Design Guidelines are consistent with General Plan Policy 2.8 which addresses neighborhood design concepts.

The River Oaks Crossing Specific Plan proposed Design Guidelines contain standards for signage, including guidelines related to the master freestanding identification signs for the Project's proposed commercial development. Consistent with Specific Plan Section 6.5(j), the Master Sign Program for the proposed Project must comply with the following standards relating to freestanding signage:

> Computation of Area. Freestanding signs are to be computed as the total of the copy area of all tenant identification, including graphics and logos on one side of a double faced sign.
>
> Area. For the purposes of analysis in the DEIR, the total area of all shopping center freestanding signs shall not exceed one thousand (1,000) square feet. The total square footage for freestanding signs allowed for by the Master Sign Program shall be determined at the time of approval of the Master Sign Program and may be less than, but not exceed 1,000 square feet.
>
> Height. The maximum height of one (1) shopping center freestanding sign shall be approximately forty-five (45) feet, to the highest point of the structure. The maximum height of all other shopping center freestanding signs shall be fifteen (15) feet.

Location. The maximum forty-five (45) foot high shopping center freestanding sign shall be located within the western part of the shopping center, (west of the Project driveway located between Major Pads B and C).

Number. There may be up to one (1) shopping center freestanding sign per shopping center driveway entrance.

Setback. Freestanding signs shall be located outside of the public right of way and at least ten (10) feet behind the back of sidewalk.

Shopping center identification. Each shopping center freestanding sign shall include the name of the shopping center. The shopping center name shall be placed near the top of the sign, above tenant signage. The shopping center name shall not be included in the area calculation as defined in subsection b (ii).

The above-identified Specific Plan measures would ensure that all signage on the Project site would be generally consistent with commercial signage within the City of Oakley, and that signage on-site would not degrade the visual quality of the Project site. The maximum height allowed for one freestanding sign is 45 feet with others limited to 15 feet. The visual simulations identify buildings ranging in size from 32 to 46 feet in height. The size of the signs would be in character with the scale of the proposed shopping center development.

While initial development ensures a quality design that would not degrade the existing visual character of the area and would be consistent with the exiting design guidelines, consistent with General Plan policies, should maintenance not occur, a ***potentially significant*** impact would result. Implementation of the following mitigation measure would reduce the impact to a ***less-than-significant*** level.

Mitigation Measure(s):

AES-2 *As part of the Architectural Review for the first Major tenant, the applicant shall submit a master Project Maintenance Program (PMP), to assure that all landscaping, water elements, pavement areas, buildings, mechanical systems, and other site and building improvements are properly cared for and will retain a high-quality appearance and proper operation. The PMP will include plans for maintenance of all building(s) and site improvements throughout the life of the Project. The PMP may include provisions acceptable to the Community Development Director that address reuse of the Major Retail building(s) in the event that the building(s) becomes vacant. The City may collect a Letter of Credit in an amount acceptable to the City Manager, but not to exceed $25,000 per pad,*

from each of the Major Retail pads to guarantee adherence to the standards for maintenance and reuse as called for in the PMP. The City may draw upon these funds only in the event of violation of the PMP. This requirement will help to assure long-term compliance with a range of aesthetic, acoustical, land use, water quality, and other mitigation measures from the Project EIR.

Impact AES-3 - Impacts associated with new sources of light and glare

The proposed Project would create new sources of light and glare where none currently exist in areas that are currently in vineyard use. The change from an undeveloped agricultural property to commercial uses would generate new sources of light and glare such as building lighting and parking lot lights. The introduction of this lighting would alter the existing unlit conditions north of Main Street. Night lighting associated with operation of the supercenter and other retail uses would be visible to neighboring properties that are not accustomed to night lighting; however, the types of lighting would be typical of modern commercial uses, incorporating cut-off lenses similar to that utilized in other commercial centers in the community. In addition, the standards for signage related to the proposed Project require that lighting of signs be arranged in a manner that does not produce glare on other properties in the vicinity, and the source of light for all signs not be visible from adjacent properties or public streets. However, this level of light would represent a substantial change from the existing condition; therefore, the impact would be considered ***potentially significant***. Implementation of the following mitigation measure would reduce the potential impacts to a ***less-than-significant*** level.

Mitigation Measure(s):

AES-3 *During construction, the developer shall install hooded and/or shielded streetlights to avoid excessive lighting on adjacent properties. The method for shielding of the lighting shall be subject to the review and approval of the Community Development Director.*

Impact AES-4 - Alteration of the existing agricultural character of the Project site

The Project site has a current appearance of being rural in nature and supports existing old-growth vineyards. Implementation of the proposed Project would result in the conversion of the undeveloped, rural character of the Project site to urban commercial setting with parking lots and substantial buildings. Because the Project site is currently visible along a portion of Main Street and Bridgehead Road (as seen in Figures 3.14-2 through 3.14-4), the change in the character of the site would be recognizable. The change in the site from a rural to urban

environment would constitute a permanent alteration of the existing visual character of the Project site.

Although existing views of the on-site vineyards will be transformed by the proposed Project, as reflected in Figures 3.14-2 through 3.14-4, the Project is consistent with the type of development anticipated by the Oakley General Plan type for the site. In addition, the Oakley 2020 General Plan EIR under Impact 3.2-B concludes that development anticipated in the General Plan would have a less-than-significant impact to the alteration of existing visual character or quality and urban design of the Planning Area if General Plan policies are implemented. As referenced above, the Project incorporates a detailed set of Design Guidelines for all building and site improvements; these would ensure that the proposed Project would comply with applicable General Plan policies. Therefore, consistent with the Oakley 2020 General Plan Environmental Impact Report, the impact would be considered ***less-than-significant*** and mitigation would not be required.

Cumulative Impacts

The proposed Project would contribute to the cumulative change in visual character of the eastern Contra Costa region from agricultural to urban and commercial. Due to the current use of the Project site for agricultural purposes, the larger cumulative context of the visual impact of the proposed Project could be considered as within the City as a whole. However, the properties in the immediate vicinity of the Project are designated for development by the Oakley 2020 General Plan. The proposed Specific Plan Project authorizes construction of up to 770,000 square feet of commercial buildings on a 76.4-acre site that extends along Main Street (State Route 4) at the westerly entrance to the City of Oakley. Although individually subject to Architectural Review, the multiple commercial structures to be located on the Major and Secondary Building Envelopes identified in the Specific Plan could present a range of divergent architectural styles and utilize contrasting development standards, unless properly coordinated based on standards identified in the Specific Plan. Although individually insignificant, this collective mass of buildings could have a significant effect on the quality of the visual environment at the City's westerly entrance. Parking lot lighting on a site of this scale could also result in potentially significant glare, affecting evening vistas along Main Street. The Specific Plan regulates the location and design of exterior lighting in such a manner as to control glare and avoid impact to motorists on Main Street and Bridgehead Road.

However, the site has been designated for development in the Oakley 2020 General Plan. In addition, the Oakley 2020 General Plan EIR Impact 3.2-B concludes that development anticipated in the General Plan would have a less-than-significant impact to the alteration of existing visual character or quality and urban design of the Planning Area if General Plan policies are implemented. The Project incorporates Design Guidelines and Architectural Review by the City is

required for all structures; these elements of the Specific Plan would ensure that the proposed Project would comply with applicable General Plan policies.

The proposed Specific Plan establishes a long-term (5-10 year) buildout schedule for the 76.4-acre Project site. All individual improvement plans must be designed for consistency with the Development Plan, as well as the policies and standards presented in the Specific Plan, upon which this environmental analysis is based. In addition, future development as approved through the Architectural Review process must comply with all applicable requirements of the Oakley 2020 General Plan and its programmatic EIR mitigation measures (incorporated herein by reference). Therefore, consistent with the Oakley 2020 General Plan Draft Environmental Impact Report, the cumulative aesthetic impact would be considered ***less-than-significant*** and additional mitigation would not be required.

3.15 HAZARDS & HAZARDOUS MATERIALS (HHM)

The Hazards section of the EIR describes existing and potentially occurring hazards and hazardous materials on the Project site. The section discusses potential impacts posed by these hazards to the environment, as well as to workers, visitors, and residents within and adjacent to the Project site. More specifically, the section describes potential effects on human health that could result from soil or groundwater contamination stemming from past uses of the site, or from exposure to hazardous materials used in adjacent agricultural operations.

Environmental Setting

Existing Conditions

The Project site has been used historically for agricultural purposes, potentially including the use of commercial herbicides and pesticides. The subject property was originally owned by the DuPont Company, and sold to Fred Cline in 1999. According to environmental documentation filed with the Department of Toxic Substances Control (DTSC) in 2002[1], DuPont maintained the 76.4-acre Project site as an "agricultural buffer" to its manufacturing, administrative and wastewater treatment operations conducted further to the north. In its Supplemental Phase II Environmental Assessment of the Cline Property (River Oaks Crossing Specific Plan site) (See Appendix M), DuPont engineers also confirm that it never conducted any manufacturing operations on the Project site, and areas of chemical or operational waste were not located on the 76.4-acre Project site, as of the time of transfer to Fred Cline in 1999. The property owner indicates, and City records confirm, that the Project site has been used exclusively for commercial grape production since 1999.

A Phase I Environmental Site Assessment for the proposed Project site was prepared by Kleinfelder, Inc. on February 23, 2006 (See Appendix N). The Site Assessment included a review of historic maps and aerial photographs of the proposed Project site and surrounding areas and found that the proposed Project site has continually supported vineyard uses for over 68 years.

The Site Assessment did not identify any existing structures on-site. The improvements located on-site included the following: one irrigation well/pump, one Contra Costa County pump, power poles trending north/south along the eastern and southern boarder of the site, a water main, irrigation standpipes and four monitoring wells.

Potential On-site Hazards

Pesticides

The Site Assessment determined that, due to the historical agricultural use of the Project site, pesticides and fertilizers were likely to be present. The River Oaks Crossing Specific Plan Project Area primarily supports existing vineyard land uses. Historically, vineyard uses, fertilizers, pesticides, and other agricultural agents have been used on the Project site.

Storm Drain and Natural Gas Lines

A PG&E gas pipeline marker was noted on the northwest boarder of the Project site, and flagging for gas pipelines was noted throughout the western portion of the Project site. Two storm drain faults and a water main marker were also noted in the northeast portion of the Project site.

Existing storm drainage Trunk Line "A-1" extends along the Project frontage of Main Street, from Bridgehead Road in an easterly direction past the future Live Oak Avenue extension. The line then turns northeasterly, and continues through the Project site and under the railroad right-of-way and through the adjoining DuPont property. A 12-inch natural gas line extends along the Project frontage on Main Street, and turns north at a point opposite the southwesterly corner of the site to extend through the site.

Wells

The proposed Project site supports one irrigation well and two groundwater-monitoring wells located centrally on the Project site. In addition, one piezometer was located on the southwest portion of the site, and a second piezometer was observed in the southeast portion of the Project site.

Potential Off-site Hazards

The Site Assessment included a survey of the land uses surrounding the proposed Project site. Surrounding land uses to the north include the Burlington Northern, and Santa Fe Railroad (BNSF). Further north on the opposite side of the BNSF Railroad tracks there exists a PG&E gas pipeline and the vacant DuPont chemical facility. The eastern edge of the Project site is bounded by the BNSF Railroad tracks and agricultural land. The Project site is boarded on the south by Main Street, and residential and commercial land uses. To the west of the Project site exists an Arco gas station, a Caffino drive-through coffee kiosk, and Bridgehead Road. Beyond Bridgehead Road land uses include gas stations, a hotel and a mobile home park.

Records Review

The Site Assessment included a standard review of environmental records sources. The purpose of the records review is to obtain and review records that would help to evaluation recognized environmental conditions in connection with the subject site and bordering properties.

Federal, State and local regulatory agencies publish databases or "lists" of businesses and properties that handle hazardous materials or hazardous waste, or are the known location of a release of hazardous substances to soil and/or groundwater. The databases are available for review and/or purchase at the regulatory agencies, or the information may be obtained through a commercial database service. In the preparation of the Site Assessment for the Project site, Kleinfelder contracted with a commercial database service, Environmental Data Resources (EDR) to review the regulatory agency lists for reference to the site and any listings within the appropriate minimum search distance from the site. The EDR search located ten offsite facilities:

- Mellos Sheet Metal: located at 1242 Main Street, adjacent to the south of the site, appears on the UST and Contra Costa County Site List databases. The records search did not show any violations and it does not appear that this facility would pose an environmental concern to the Project site.

- Palex: located at 1314 Main Street, adjacent to the south of the site, appears on the HAZNET, Contra Costa County Site List and CA WDS databases. The facility appears on the HAZNET database due to liquids with halogenated organic compounds, aqueous solutions and unspecified oil-containing wastes, which are disposed of at a transfer station. The facility appears on the CA WDS database because it contains a waste discharge system. The records search did not show any violations and it does not appear that this facility would pose an environmental concern to the Project site.

- Shell (Antioch Shell): located at 5545 Bridgehead Road, adjacent to the west of the site, appears on the UST, Haznet, and SWEEPS UST databases. The facility appears on the HAZNET database due to empty containers less than 30 gallons that are disposed of at a recycler. The records search did not show any violations and it does not appear that this facility would pose an environmental concern to the Project site.

- Bridgehead Inc. (ARCO Products #6301): located at 5540 Bridgehead Road, adjacent to the southwest corner of the site appears on the HAZNET, LUST, Cortese, CHMIRS, and Contra Costa County Site List databases. The facility appears on the HAZNET database due to aqueous

solutions, which are disposed of at a recycler. The facility appears on the CHMIRS database due to a release caused by a hose at the service station that came loose and spilled 10-gallons of gasoline on October 13, 2001. The facility appears on the LUST and Cortese databases due to a leaking underground storage tank. The chemical involved is gasoline, which reportedly affected the aquifer. The leak was discovered on March 23, 1993 during tank closure. MTBE was tested for and detected at 43 parts per billion. The case was closed on June 20, 2003 and does not pose an environmental concern for the Project site.

- Delta Scrap & Salvage: located at 1371 Main Street, adjacent to the south of the site, appears on the Contra Costa County Site List. Violations were not found on the site; however, based upon Kleinfelder's experience with environmental investigations of auto salvage businesses in the area, potential release of hazardous materials was noted. Such potential release does not appear to pose an environmental concern to the Project site.

- PG&E Gas Distribution Facility: at 5900 Bridgehead Road, is located adjacent to the site to the northwest. A recent investigation of this site revealed significant concentrations of petroleum hydrocarbons in the groundwater. Based on the expected groundwater gradient directed to the north, this would not be expected to impact the subject site.

- G E Sales: located at 5801 Bridgehead Road, adjacent to the west of the site appears on the Contra Costa County Site List. The records search did not show any violations and it does not appear that this facility would pose an environmental concern to the Project site.

- Chevron #9-3801: Located at 5433 Neroly Road, approximately 500 feet southwest of the Project site appears on the LUST and Cortese databases. The facility appears on the LUST and Cortese databases due to a leaking underground storage tank. The chemical is gasoline, which reportedly affected the aquifer. MTBE was tested for and detected at 4.2 parts per billion. The case was closed on May 29, 2002. Based on this status, the facility does not appear to pose an environmental concern for the proposed Project site.

- DuPont Antioch Works (DuPont Chemical Company): Located at 6000 Bridgehead Road, approximately 500 feet north of the Project site appears on the LUST, Cortese, CA FID UST, SLIC, and RCRA-TSDF databases. The facility appears on the CA FID UST database due to it being an active underground storage tank location. The facility appears on the LUST and Cortese databases due to the release of gasoline from an underground storage tank, which affected the aquifer. The leak was discovered on

August 21, 1986 during tank closure. Remedial action is currently underway at the site. The facility appears on the SLIC database due to the release of SUB004, SUB005, SUB015, SUB030, and SUB 031, which remain under a remediation plan. The remediation ensures that the site does not pose an environmental concern for the proposed Project.

- Waste Fiber Recovery: Located on Main Street approximately 1,300 feet west of the Project site appears on the LSIC and Contra Costa County Site Lists. The facility appears on the SLIC database due to the release of 128 and PET. Based on the distance from the Project site, this facility does not appear to pose an environmental concern for the Project site.

Regulatory Environment

The term hazardous substance refers to both hazardous materials and hazardous wastes. A material is defined as hazardous if it appears on a list of hazardous materials prepared by a federal, state or local regulatory agency or if the site has characteristics defined as hazardous by such an agency.

The California Environmental Protection Agency, Department of Toxic Substances Control (CAL-EPA, DTSC) defines hazardous waste, as found in the California Health and Safety Code Section 25141(b), as follows:

> […] its quantity, concentration, or physical, chemical, or infections characteristics: (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; (2) pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed.

Many agencies regulate hazardous substances. The following discussion contains a summary review of regulatory controls pertaining to hazardous substances, including federal, State, and local laws and ordinances.

Federal Regulations

Federal agencies that regulate hazardous materials include the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Department of Transportation (DOT), and the National Institute of Health (NIH). The following federal laws and guidelines govern hazardous materials:

- Federal Water Pollution Control;
- Clean Air Act;
- Occupational Safety and Health Act;

- Federal Insecticide, Fungicide, and Rodenticide Act;
- Comprehensive Environmental Response, Compensation, and Liability Act;
- Guidelines for Carcinogens and Biohazards;
- Superfund Amendments and Reauthorization Act Title III;
- Resource Conservation and Recovery Act;
- Safe Drinking Water Act; and
- Toxic Substances Control Act.

Prior to August 1992, the principal agency at the federal level regulating the generation, transport and disposal of hazardous waste was the EPA under the authority of the Resource Conservation and Recovery Act (RCRA). As of August 1, 1992, however, the California Department of Toxic Substance Control (DTSC) was authorized to implement the State's hazardous waste management program for the EPA. The federal EPA continues to regulate hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

State Regulations

The California Environmental Protection Agency (Cal-EPA) and the State Water Resources Control Board establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable State and local laws include the following:

- Public Safety/Fire Regulations/Building Codes;
- Hazardous Waste Control Law;
- Hazardous Substances Information and Training Act;
- Air Toxics Hot Spots and Emissions Inventory Law;
- Underground Storage of Hazardous Substances Act; and
- Porter-Cologne Water Quality Control Act.

Within Cal-EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the State agency, for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law (HWCL).

Local Regulations

City of Oakley General Plan

The following applicable goals and policies are from the Oakley 2020 General Plan Health and Safety Element:

Hazardous Materials

Goal 8.3 Provide protection from hazards associated with the use, transport, treatment, and disposal of hazardous substances.

Policy 8.3.1 Hazardous waste releases from both private companies and public agencies shall be identified and eliminated.

Policy 8.3.2 Storage of hazardous materials and wastes shall be strictly regulated.

Policy 8.3.3 Secondary contaminant and periodic examination shall be required for all storage of toxic materials.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the Project would have a significant effect on the environment if it would:

- 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.

Impacts and Mitigation Measures

Basis for Impacts

The physical placement of buildings and improvements on the Project site could conflict with existing storm drainage and natural gas pipelines. In addition, site development and use of finished facilities could result in exposure of people to pesticides and other agricultural chemicals stored in the soils onsite.

Analysis of Project Impacts

Impact HHM-1 - Impacts Related to the Extension of Natural Gas Pipelines

Construction of building improvements identified in the Specific Plan's Development Plan could necessitate the extension of natural gas lines. The proposed Project could necessitate modifications to existing natural gas lines, which could result in the release of hazardous materials.

The proposed Project's impacts to existing natural gas infrastructure are addressed in Impact EC-2 of this DEIR. Though this impact itself does not specifically address hazards that may result of the extension of the natural gas

infrastructure, the discussion does find that impacts related to the expansion of natural gas lines could result in a ***potentially significant*** impact. Impact EC-2 provides mitigation measures that would reduce the impact to natural gas infrastructure to a less-than-significant level. The analysis associated with the proposed Project determined that the implementation of Mitigation Measures EC-2(a) through EC-2(c) would ensure that the design of any natural gas infrastructure extensions or upgrades would meet the approval of the City Engineer, pipeline owners, and utility providers. The implementation of Mitigation Measures EC-2(a) through EC-2(c) would ensure that the proper approvals and design reviews would be required prior to construction of the natural gas infrastructure extensions and would reduce potentially hazardous impacts to a ***less-than-significant*** level. Additional mitigation would not be required.

Mitigation Measure(s):

HHM-1 Implement Mitigation Measures EC-2(a) through EC-2(c).

Impact HHM-2 - Impacts to Storm Drainage Facilities

Construction of building improvements identified in the Specific Plan's Development Plan could potentially encroach upon existing storm drainage lines (See Figure 3.11-1: Storm Drainage System).

The proposed Project's impacts related to drainage and the potential relocation of the existing stormwater drainage lines on the easterly end of the Project site are addressed in Impact HWQ-1. Impact HWQ-1 finds that the proposed Project would have a ***potentially significant*** impact with regard to the possible encroachment into the existing storm drainage pipeline on the eastern portion of the Project site. HWQ-1 found that the impacts associated with the disruption of the storm drainage facilities would be reduced to a less-than-significant level through the implementation of Mitigation Measures HWQ-1(a) through HWQ-1(c).

Mitigation Measure HWQ-1(c) states the following: "Improvement plans for Secondary building envelope D and any adjoining structures shall provide for protection or relocation of the existing storm drain pipeline at the easterly end of the site within an easement to the satisfaction of the City and flood control authorities. "

The implementation of HWQ-1(c) would ensure that the existing stormwater drainage line on the easterly portion of the Project site be protected or relocated to the satisfaction of the applicable authorities. The implementation of Mitigation Measure HWQ-1(c) would also reduce the potential hazardous impacts associated with the encroachment and possible disturbance of the existing stormwater drainage line to a ***less-than-significant*** level. Additional mitigation would not be required.

Mitigation Measure(s):

HHM-2 Implement Mitigation Measures HWQ-1(a) through HWQ-1(c).

Impact HHM-3 - Impacts Related to Previous Pesticide Use

The proposed Project would convert approximately 76.4 acres of agricultural land to a commercial center. The Project site has a history of being used for vineyard purposes. As a result, the possibility exists that previous tenant farmers and/or owners may have applied pesticides in the past. Certain organochlorine pesticides, DDT for example, are extremely persistent in the environment and residual pesticide concentrations in surface soils are consequently a possible contaminant on former agricultural sites. A Phase II Environmental Study of the DuPont Antioch Works Plant Buffer Zone Area included a chemical analysis of the soils and groundwater on and around the proposed Project area (See Appendix M) and concluded that the Project area did not contain any concentrations of hazardous chemical concentrations that would interfere with existing agricultural uses on the site and concludes that the proposed Project site would not require additional study if the proposed Project site were to remain in agricultural use.

The approval of the proposed Project would convert the existing agricultural vineyard land uses to a developed commercial center. During development of the subject property, the majority of the site's ground surfaces would be disrupted and covered with buildings, asphalt paving, and/or landscaping. This type of development would cause exposure pathways to previous surface soils and any residual pesticide concentrations to be reduced or eliminated, and significant health risks to future site occupants would be minimized.

The Phase I environmental site assessment prepared by Kleinfelder, Inc. indicated that several soil assessments of the site performed in the past showed that concentrations of organochlorine pesticides detected in the soil samples were below residential Preliminary Remediation Goals set by the EPA, Region IX. However, due to the amount of time that has lapsed since those assessments were performed and the sample locations' bias to the perimeter of the Project site, the Phase I recommended that further soil sampling be conducted at the Project site to investigate the potential for pesticide-impacted soils.

In January 2007, Kleinfelder Inc. prepared a Limited Phase II environmental site assessment for the Project site, which included further surface soil sampling (See Appendix N). The results of the surface soil samples analysis were compared with California Human Health Screening Levels (CHHSLs), which address concerns related to direct exposure to contaminants and provide a guideline on which to base recommendations, for residential and commercial land use in order to evaluate the significance of organochlorine pesticides, arsenic, lead, and mercury contamination of the surface soils at the site. Concentrations of

organochlorine pesticides, lead, and mercury detected in the composite soil samples from the site were below their respective CHHSLs. Arsenic was detected at concentrations above the CHHSL for arsenic; however, the concentrations were within the range of naturally-occurring arsenic concentrations in soils for the region. The Limited Phase II concluded that the Project site does not appear to be significantly impacted by residual agricultural organochlorine pesticides, arsenic, lead, or mercury. Based on those results, the Limited Phase II does not recommend further environmental assessment, and impacts related to previous pesticide use on the Project site would be ***less-than-significant***.

Impact HHM-4 – Groundwater Monitoring Wells

The environmental assessment for the proposed Project site located two groundwater-monitoring wells (MW-59 and MW-60) and one piezometer (PZ-17) in the southwestern portion of the site. A second piezometer (PZ-36) was found to be located in the southeastern portion of the Project site. The monitoring wells were installed on the proposed Project site for the purposes of collecting regional background data. The development of the proposed Project would require the proper abandonment or potential relocation on-site of the existing groundwater monitoring wells on-site. Should the wells be improperly abandoned, a ***potentially significant*** impact would result. The implementation of the following mitigation measure would reduce this impact to a ***less-than-significant*** level.

Mitigation Measure(s):

HHM-4: *Any improvements associated with the River Oaks Crossing Specific Plan Project that would encroach onto well locations would require close coordination with USEPA and DTSC; and, prior to obtaining clearance to grade the site or conduct earthwork activities, Project workplans shall be developed and pre-approved by USEPA and DTSC for all construction activities occurring adjacent to these wells.*

Prior to obtaining clearance to grade the site or conduct any earthwork activities, the applicant shall consult with the United States Environmental Protection Agency and Department of Toxic Substances Control regarding the relocation/reconstruction of on-site wells and piezometers. The relocation/reconstruction sites for piezometers PZ-17 and PZ-36, as well as monitoring wells MW-59 and MW-60 shall be determined by the United States Environmental Protection Agency and Department of Toxic Substances Control. During work that would involve any modification to, or potential impact upon these wells, such activity shall be directly supervised by the EPA and/or DTSC.

Impact HHM-5 – Irrigation Wells On-Site

One irrigation well was observed on the southwest portion of the Project site and an additional pump and well were located in the southern central portion of the proposed Project site. Soil staining was not noted on the ground surface of pumps or wells. The environmental site assessment conducted by Kleinfelder Inc. indicated that if removal of the wells occurs, the wells should be abandoned in accordance with local, State, and federal regulations. The development of the proposed Project would require the proper abandonment of the existing irrigation wells on-site. Should the wells be improperly abandoned, a ***potentially significant*** impact would result. The implementation of the following mitigation measure would reduce this impact to a ***less-than-significant*** level.

Mitigation Measure(s):

HHM-5: Prior to the issuance of grading permits, the applicant shall hire a licensed well drilling contractor to properly abandon the on-site water wells according to City of Oakley and/or Contra Costa County Guidelines. Upon obtaining a well closure permit, the metal casing should be pulled out and the well backfilled with pea gravel and cement grout for the final review and approval by the City Engineer.

Impact HHM-6 – Concrete Standpipes

Concrete standpipes were noted on the western portion of the proposed Project site. On properties that have a history of agricultural uses, such as the proposed Project site, many underground pipelines may exist. The possibility exists that such pipelines may contain asbestos (e.g. “transite” pipe). In the event that any subsurface structures are encountered during the development of the Project site, or excavation of the site the risk that construction personnel could be exposed to asbestos is present. Therefore, should asbestos containing subsurface piping be encountered during construction activities on the Project site, a ***potentially significant*** impact would result. The implementation of the following mitigation measures would reduce this impact to a ***less-than-significant*** level.

Mitigation Measure(s):

HHM-6: Should underground pipelines or underground structures be uncovered during construction activities, the Project proponent shall stop work in the vicinity and provide an assessment, which determines whether the discovered features contain asbestos and/or lead paint, to the City Engineer for review. If pipelines or associated features do not contain asbestos, further mitigation is not required. If any pipelines or associated features contain asbestos, the applicant shall submit an asbestos abatement plan

consistent with local, state, and federal standards, subject to approval by the City Engineer.

Cumulative Impacts

Impacts associated with hazardous materials are site-specific and generally do not affect or are not affected by cumulative development. Cumulative effects could be of concern if the Project was, for example, part of a development in which industrial processes that would use hazardous materials were proposed. However, this is not the case with this Project, and Project-specific impacts were found to be less-than-significant with the implementation of the recommended mitigation measures; therefore, the proposed Project's incremental contribution to cumulative hazardous conditions was not found to be significant.

In addition, surrounding development would be subject to the same federal, State, and local hazardous materials management requirements as would the proposed Project, which would minimize potential risks associated with increased hazardous materials use in the community, including potential effects, if any, on the proposed Project. Therefore, implementation of the proposed Project would have a ***less-than-significant*** cumulative impact associated with hazardous materials use.

Endnotes

[1] Supplemental Information Related to the Phase II Environmental Assessment of Cline Vineyard Property Adjacent to the DuPont Oakley Facility, September 10, 2002, DuPont Engineering.

3.16 RETAIL MARKET EFFECTS & POTENTIAL FOR URBAN DECAY (UD)

A detailed and comprehensive Retail Market Impact Analysis was conducted by consultants Bay Area Economics as part of this EIR, and is included in Appendix H. The Market Impact Analysis describes the existing market setting, market population and employment trends, the Project's relationship to current and future market conditions and demands, and the Project's potential direct and cumulative effects on competing retail nodes. This Draft EIR incorporates the findings of the Market Impact Analysis, and considers whether there is a potential for urban decay to indirectly result from the Specific Plan Project and other cumulative development.

Environmental Setting

Existing Conditions

Primary and Secondary Trade Areas

Two trade areas were considered in the Market Impact Analysis, the City of Oakley and a "Subregion" consisting of the cities of Oakley, Brentwood, and Antioch. (A "trade area" is the geographic region that encompasses most of a retail outlet's customers.) The assumption was that shoppers would tend to go to the major shopping centers closest to their home for most purchases. Therefore, the Primary Trade Area for the proposed Project is defined as the City of Oakley, and the Secondary Trade Area is the Subregion of Oakley, Brentwood and Antioch (See Chapter 2, Project Description, Figure 1 for Project site vicinity).

The Primary and Secondary Trade Areas were defined based on the location of other existing and planned competitive supercenters and other major retail nodes, with most shoppers assumed to travel to the nearest supercenter-type store for that type of shopping, and in part on the relative distance and isolation from other major urbanized areas (with the exception of Pittsburg, where retail developments could attract shoppers from the Subregion).

Current Economic/Population Trends in the Primary and Secondary Trade Areas

Oakley's population has been steadily increasing at an average annual rate of three percent since 2000. Based on existing development approvals, the City of Oakley projects that Oakley's growth will exceed eight percent annually, through 2015. The Subregion's population, which has grown at a consistently strong rate since 1990, will slow in the next few years to an average annual rate of 1.6 percent. An additional 55,700 persons are expected by 2015, with the Subregion population projected to reach 232,100 persons.

Relative to Contra Costa County's mean household income of $88,700 (all incomes in constant 2000 dollars) in 2005, the Subregion had a lower mean income of $78,058 in the same year. Oakley's 2005 mean income was estimated at $74,300. From 2005 to 2010, the Subregion's mean household income will grow at a steady 1.2 percent per year, the same rate of increase as the Bay Area, with Oakley growing at a slightly lower rate of 1.0 percent.

Contra Costa County has maintained a very steady rate of employment despite the changes in Bay Area economy after 1999 to 2000. The number of employed residents has remained between 480,800 and 487,900 persons over the past five years. Unemployment climbed from 3.5 percent in 2000 to 6.1 percent in 2003, with a recent decline to 4.8 percent. Oakley has experienced a much lower unemployment rate over the same period, with unemployment decreasing from 3.9 percent in 2002 to 3.3 percent in 2005. Employed Oakley residents in 2005 are estimated at 13,100 persons.

The Subregion is undergoing moderate population and household growth and will have a population of 232,100 and 74,840 households by 2015. Long term, these trends are expected to continue at a slower rate, with the Subregion's growth slowing, and Oakley's annual growth accelerating to over eight percent.

Oakley's taxable retail sales have remained stable on an inflation-adjusted basis while the city's population has grown slowly since 2001. Taxable retail sales have changed little over the past few years, ranging from $83.8 million in 2002 to $84.5 million in 2004. Oakley is the County's youngest city, incorporated in 1999, and, as such, detailed taxable sales data for Oakley is unavailable before 2001. Currently, Oakley does not have any large retail centers, and its plateau in taxable retail sales with a rising population suggests that surrounding cities are capturing sales from Oakley residents. This situation could change with the approved Safeway retail center on Laurel and O'Hara, the proposed Project, a 77-acre Main Street retail development near Carol Lane, and other small commercial developments in the pipeline.

Antioch had a similar percentage increase in population, but taxable retail sales climbed 20 percent from $714 million in 2000 to $858 million in 2004. Antioch's sales jumped 11 percent from 2003 to 2004, most likely reflecting the 2003 opening of Slatten Ranch Shopping Center, a 430,000 square foot retail center anchored by Target, Barnes & Noble, Mervyn's and other big-box retailers. As the home to a new Lowe's and Somersville Town Center, the only traditional mall in the area, Antioch has established itself with the most region-serving retail in the Subregion. However, although Antioch's sales trends suggest the market is growing quickly, the rapid emergence of neighboring Brentwood and now Oakley as a competing retail center will most likely challenge Antioch's market growth.

In contrast to its neighbors, Brentwood's taxable retail sales have grown more quickly than its population, climbing over 80 percent from $168 million in 2000 to

$306 million in 2004. During the same time period, Brentwood's population has grown nearly 65 percent from 23,302 persons in 2000 to 38,395 in 2004. Two recently opened retail centers most likely account for the 49 percent increase in taxable retail sales in Brentwood from 2003 to 2004; the WinCo center opened in 2003 and Lone Tree Plaza, with a Home Depot, Kohl's, Sportmart, and other stores, opened in 2004. With over 4,000 housing units already approved or under construction as of July 1st, the 450,000 square foot Streets of Brentwood expected to open in 2007, and several other retail projects in the pipeline, Brentwood may become the strongest retail center in the area in the near future.

Existing Competitive Stores in the Primary and Secondary Trade Areas

Though no tenants have been designated by name in the proposed Project, potential tenant types that have been designated include discount general merchandise superstore with grocery, a home improvement store, and other retail and restaurants. Based upon this, the Market Impact Analysis identified and inventoried major competitors for the proposed Project in the general merchandise, supermarket, and home improvement center categories.

General Merchandise Stores

Oakley does not have any major general merchandise stores. The only significant store in this category is the Rite Aid. Beyond Oakley, Brentwood has only one major general merchandise store, a Kohl's, but has several drug stores. As previously indicated by the retail sales data, Antioch is dominant in this category, with several major stores, including an existing Wal-Mart in Williamson Ranch Plaza with a proposed expansion.

Antioch also has a Big K-mart near the proposed Project site, Mervyns, Sears, Gottschalks, and Macy's in Somersville Towne Center, a Target and Mervyns in Slatten Ranch Shopping Center, and a Costco.

Major Supermarkets

Oakley has three major full-service supermarkets totaling 119,720 gross square feet (s.f.), all located along Main Street. These include the 43,970 s.f. Albertsons in Oakley Town Center, the 60,750 s.f. Raley's in Cypress Square, and the 15,000 s.f. Centro Mart in the Oakley Shopping Center. In addition, the City has approved a new 85,000 s.f. development anchored by a Safeway store on the northeast corner of Laurel and O'Hara. Safeway, as a corporate strategy, is trying to develop a more upscale image as it seeks to reposition itself in the face of competition on the lower end of the market from supercenter type stores; this Safeway will most likely be in this format. The Albertsons store was recently remodeled, and the center in which the store is located currently has no vacancies. This Albertsons is part of the recent acquisition of all Northern

California Albertsons stores by Save-Mart, a California supermarket chain based in Modesto. These stores were all moderately busy at the time of BAE's site visit.

Both Antioch and Brentwood have a number and variety of supermarkets, including Albertsons, Centro-Mart, Raley's, Safeway, WinCo, and Save-Mart; this likely precludes much food shopping by their residents in Oakley. Antioch has an estimated 322,536 s.f. of supermarket space, and Brentwood has approximately 307,171 s.f., bringing the total for the Subregion to approximately 750,000 s.f. Additionally, Antioch has a Costco, which carries food items, typically in bulk or large sizes, and caters in part to pantry-loading households.

Home Improvement Centers

Oakley does not have any home improvement centers; the only business in the building materials category in the City was the recently closed True Value Hardware store. In terms of major competitors, Brentwood has the Home Depot and Antioch has two Lowe's and two Orchard Supply Hardware stores.

Supercenters

Oakley and the Subregion do not have existing supercenters, but there are existing Wal-Mart stores with limited grocery offerings in Antioch on Lone Tree Way and in Pittsburg on Loveridge Road. In addition, there are Target stores in Slatten Ranch in Antioch and in Century Plaza in Pittsburg. Wal-Mart has proposed expanding the Antioch store to a supercenter format with a full supermarket equivalent, but the Antioch City Council determined not to certify the Final EIR for the Wal-Mart expansion project. At the time of this analysis, Wal-Mart's future plans for Antioch were unknown, but because a Wal-Mart supercenter in Antioch will affect the potential geographic draw of a supercenter in Oakley, the Market Impact Analysis considered the cumulative impacts of the Project with and without the Antioch supercenter in place. Beyond the Subregion, Wal-Mart has plans for Supercenters in Fairfield, Suisun City, Tracy, Lodi, and Vallejo, and existing Supercenters in Dixon and Stockton. These existing and planned stores serve to bracket the potential market area for this proposed Project.

Regulatory Environment

Recent California court decisions (*Bakersfield Citizens for Local Control v. City of Bakersfield, Panama 99 Properties LLC, and Castle & Cooke Commercial-CA, Inc.*, as well as *Dolan Ingram, et al. v. City of Redding and Wal-Mart, Inc, et al.*) have made clear that for large retail developments, an economic impact analysis should be undertaken to assess the possibility of "urban decay" – deterioration and indirect physical impacts on the environment. In the *Bakersfield* decision, the Appellate Court made clear that such an impact needed to be given "meaningful consideration." Both cases indicate that to fully satisfy the

requirements of an EIR, the economic analysis must start with the economic impacts, and follow the causal chain to assess the likelihood of new retail space causing existing space to become vacant, and following that outcome, determine the potential for urban decay through the physical deterioration of existing retail centers and nodes. Such an analysis was completed for this Project and is presented in Appendix H. Best available information has been used to assess the economic impacts and then establish whether these economic impacts might result in a negative effect on the physical environment of Oakley and the surrounding communities as manifested by urban decay through the physical deterioration of existing retail centers.

Oakley Municipal Code

The following provisions of Oakley's Municipal Code are relevant to the EIR's urban decay analysis.

The Oakley Municipal Code contains provisions that allow the City to ensure that properties within its jurisdiction are kept up to City standards, and that any non-compliance can be abated, with full cost recovery to the City, subject to approval of the City Council and filing with the County Tax Collector.

Title 1 of the Oakley Municipal Code contains regulations related to "Penalties and Remedies" and "Abatement of Nuisances" that allow the City to pursue abatement of many types of nuisances on private property. Title 1 defines "nuisance" and contains provisions for declaring, noticing, and abating nuisances. "Nuisance" has a broad definition that includes any violation of the Municipal Code, any City ordinance, regulation issued pursuant to a City ordinance, or any condition of approval. Examples of nuisances include, but are not limited to, graffiti on buildings, dilapidated buildings, and the failure to collect weeds and refuse on a private property.

The City of Oakley has a Code Enforcement Division that performs nuisance abatement on a daily basis. (The proposed Project, like any other property in Oakley, would fall under the enforcement actions of the Code Enforcement Division.) Nuisances that are not remedied by a property owner or other party responsible for maintenance are subject to the "Penalties and Remedies" as described in Title 1.

Antioch Municipal Code

The following provisions of Antioch's Municipal Code are relevant to the EIR's urban decay analysis.

Similar to the City of Oakley, the City of Antioch contains language in the municipal code that allows the City to take enforcement action on properties that are creating a nuisance.

The Antioch Municipal Code, Title 5 (Public Welfare, Morals, and Conduct), Chapter 1 (Property Maintenance) contain the Code's definitions and specifications regarding nuisances, abatement procedures, and graffiti abatement. The Antioch Municipal Code declares a "public nuisance" for any person owning, leasing, occupying, or having charge of possession of any premises in the city to maintain such a premises in such a manner that any one of a list of 30 conditions exist. These conditions include categories such as abandoned buildings, overgrown vegetation, lack of general maintenance of a property, neglect of property, and hazardous walls, hedges, or fences.

In the event a public nuisance is declared, the City's Code Enforcement Division takes action through the "Abatement Procedure" described in Article 3 of Chapter 1, Title 5. The Code Enforcement Division works with the Planning Division on enforcing conditions of approval on applicable properties. The Police Department and Waste Management Division also work together with the Code Enforcement Division when necessary.

The City may recover the cost of abatement by creating a record of the abatement procedure, holding a hearing, then collecting. The cost of abatement of a nuisance constitutes a special assessment lien against the property pursuant to Government Code Section 38773.5. Graffiti abatement is handled under a procedure similar to that of nuisance abatement, in that it is declared a nuisance and the failure of the responsible party to self-abate may result in the City abating the nuisance and collecting the costs of abatement from the responsible party through a lien if necessary. The regulations allow the City of Antioch to pursue any nuisances created by conditions at a vacant retail center within the City of Antioch.

Brentwood Municipal Code

The following provisions of Brentwood's Municipal Code are relevant to the EIR's urban decay analysis.

The City of Brentwood Municipal Code also contains language that allows abatement of public nuisances and graffiti. Brentwood Municipal Code Chapter 8.00 defines nuisances, and sets forth the procedures for declaration of abatement, notice of hearing, and cost recovery as a special assessment against the land in the event the owner fails to abate. Chapter 9.90 is specific to graffiti control and sets forth procedures for declaration of a nuisance, abatement by the responsible party or City, and costs recovery of the abatement removal if conducted by the City.

The Brentwood Code Enforcement Division, which consists of four officers, is the main source responsible for ensuring compliance with the Municipal Code. Like Oakley and Antioch, the Code Enforcement Division implements authority to inspect and abate as regulated in the Municipal Code with options for City

abatement and cost recovery if necessary. Any Brentwood shopping center or commercial area would be subject to the regulations of the Municipal Code and enforcement actions thereof.

Thresholds of Significance

Based on the recent California court decisions discussed above, the Project would have a significant effect on the environment if it would:

- Result in a negative economic impact so severe that stores might close as a result, and that those buildings and/or properties, rather than being reused within a reasonable time, would remain vacant, deteriorate, and lead to the decline of the associated or nearby real estate. If no or minimal negative impact is found, then urban decay would not be a logical result. Store closures alone are not sufficient to cause urban decay as such closures could provide an opportunity for new retailers or other tenants to occupy the vacated space or for property owners to engage in economic development efforts to improve properties.

Impacts and Mitigation Measures

Basis for Impacts

Proposed Project

The proposed Project consists of a mix of retail space configurations in several large buildings and free-standing pads, including three anchor spaces of more than 100,000 s.f., additional store spaces ranging from 4,000 to 30,000 s.f., and several pad spaces suitable primarily for restaurants. Committed tenants do not exist at this time, but the Market Impact Analysis assumed the following anchor tenants: a large-format, 230,000 s.f. general merchandise discount supercenter with approximately 65,000 s.f. of supermarket-equivalent use, providing sales of garden and other goods and services typically found in a large store of this type; a 170,000 s.f. home improvement center; a third approximately 120,000 s.f. large scale retailer, such as a large apparel or durable goods store; up to an additional 220,000 s.f. of general retail use including restaurants; and one hotel providing up to 100 rooms (maximum of 30,000 to 40,000 s.f.).

The Market Impact Analysis assumed that the proposed Project will be phased over a period of five to ten years for full buildout. The two larger Major Retail users (the supercenter and the home improvement center) are expected to open in 2009, followed by the remaining tenants based on market demand over the next five to ten years. The Analysis did not assess whether the retail market area can support the proposed Project, but rather assessed the impacts of the proposed Project assuming that it is constructed as planned. Further, the

Analysis assumed that this will be a fully functioning center, with all of the proposed Project's outlets achieving a level of revenue reflective of the national averages for each sector represented in the Project.

Assuming the proposed Project performs at industry standards, it would generate an estimated $284 million in retail sales at buildout. Estimated 2005 total sales in Oakley in these categories are approximately $93 million; $94 million in additional sales could be captured from leakage, and population growth to 2010 would generate $147 million in additional sales. In 2010, total potential sales in Oakley will be slightly below $334 million annually. At stabilized levels, assuming industry-standard performance, the proposed Project is expected to capture an estimated $42.7 million from existing outlets (after factoring out capture of leakage and sales from growth), representing a loss of 46 percent of existing store sales. However, this "cannibalization" of sales varies widely by store category, with building materials and home furnishing seeing the weakest sales support. Because the specific store types that will fill out the proposed Project are unknown, the impacts on particular retail nodes cannot be ascertained, but this is a large share of existing retail in Oakley. Because other retail categories remain with supportable square footage, the possibility exists that the final mix of stores will differ from the mix assumed for this analysis.

Foreseeable Projects Competitive with the Proposed Project

Competitive Projects in Oakley

In the Primary Trade Area (Oakley) there are several sites designated for future retail development; the major project besides the proposed Project in the development process at this time is a site on Laurel at O'Hara with 85,000 s.f. of retail/commercial space proposed, including a Safeway Supermarket and pad space for a gas station and fast food restaurant. Aside from the Safeway-anchored center, there are several other smaller projects in Oakley with applications in the pipeline at this time. These are smaller retail projects with unspecified tenants, or are freestanding restaurants not competitive with the major anchors in the proposed Project, so determining any cumulative impacts would be highly speculative at this time.

It should be noted that after preparation of the market analysis, the City of Oakley received a tenant improvement application for an Ace Hardware store to be located in an existing 11,120 s.f. building near downtown Oakley at 410 4th Street. This hardware use would be new to the City and could be somewhat competitive with the potential home improvement center in the proposed Project; however, such a small amount of retail demand associated with the proposed Ace Hardware would not significantly alter the conclusions of the market analysis (personal communication with Ray Kennedy, Bay Area Economics, August 7, 2007).

Competitive Projects in the Remainder of Subregion

In the remainder of the Subregion, there are several other proposed developments that could possibly result in substantial cumulative impacts in tandem with the proposed Project. In addition, a region-serving project that may have cumulative effects in tandem with the proposed Project currently exists in Pittsburg. Along with the projects listed below, there are other retail projects in the pipeline in the Subregion, but these projects do not include large region-serving anchor tenants that would be directly competitive with the proposed Project. As much of the retail mix of the proposed Project is unknown, any conclusions regarding specific store closure impacts resulting from these other projects would be speculative.

Antioch

Wal-Mart proposed expanding their existing Antioch store to a Supercenter format, but recently the Antioch City Council determined not to certify the Final EIR. It is not known at this time whether Wal-Mart intends to proceed with the proposed expansion. Elsewhere in Antioch, Costco is replacing their existing approximately 115,000 square-foot store with a new 161,000 square foot store. The replacement will occur onsite, and the existing building will be demolished, so the net addition of space is more limited. In addition, the 30,860 s.f. County Square Market, an Asian specialty food market at East Tregellas and Wildflower near Hillcrest and State Route 4, has been approved.

In addition to these supermarket-related proposals, the other proposed project in Antioch that is directly competitive with a major tenant of the proposed Project is a 104,325 s.f. JC Penney department store recently proposed on Empire Avenue near the Slatten Ranch retail center.

Brentwood

The Streets of Brentwood at the State Route 4 Bypass and Sand Creek Road is slated to develop as a 460,000 s.f. lifestyle center; the developers have been seeking an upscale supermarket as an anchor tenant. Additionally, it is reported that the closed Brentwood Albertsons will reopen as part of Save-Mart's acquisition of the Albertsons stores in Northern California.

Pittsburg

WinCo Foods is currently developing another store in Pittsburg in a 108,000 s.f. existing space in North Park Plaza next to Home Depot. This store, at the eastern edge of Pittsburg, is likely to draw shoppers out of the Subregion, especially Antioch, as the store is closer to some Antioch residents than the existing WinCo in Brentwood.

Analysis of Project Direct and Cumulative Impacts

Overview of Economic Impacts

The Market Impact Analysis determined that the proposed Project alone may have substantial short-term economic impacts at three retail centers in Oakley, as well as at the Big K-mart in Antioch. The Raley's and Centro Mart face greater risk of closure because these stores are currently performing below industry benchmarks. Cumulatively, the proposed Project, in conjunction with a proposed Oakley Safeway could lead to a greater risk of closure of retail buildings for a longer period of time in Oakley. However, the demand analysis indicates that, even if one or more of the existing supermarkets closes, long term demand in Oakley should support three supermarkets the size of the existing ones in addition to both the supercenter and the Safeway.

For the Subregion, the cumulative impacts of the proposed Project in combination with other supermarkets could lead to a short-term loss of sales at existing stores. Without the Wal-Mart expansion in Antioch, recovery to near current overall sales levels would occur by 2015. If that expansion occurs, the loss of sales at existing stores would be larger, with a slower recovery. Overall levels might be sustainable, but individual stores that are currently underperforming could be at risk of closure. Oakley's supermarket sales should recover as the population increase over the next decade, and Brentwood's strong growth should allow recovery there. Especially if the Wal-Mart expansion occurs, the Albertsons on Lone Tree is at risk of closure due to its poor sales currently and its proximity to Wal-Mart, and a long-term oversupply of supermarket space. Because of this proximity and poor sales performance, the Antioch Wal-Mart expansion alone would place this store at risk of closure even without the proposed Project in Oakley moving forward.

A strong likelihood exists that the Antioch Big K-mart would close in the face of competition from the proposed Project, especially if cumulative impacts including the possible expansion of the Antioch Wal-Mart and the addition of a JC Penney store are considered. Long term demand from Oakley alone is not great enough to support the general merchandise component of the supercenter along with the Kmart just outside Oakley's city boundary. With the opening of the supercenter in Oakley in combination with the completion of the State Route 4 Bypass, this site loses much of its locational advantage. The other major general merchandise stores in the Subregion are differentiated enough that, in combination with regional growth, there should be no risk of store closure if the Antioch Wal-Mart expands in combination with the proposed Project's supercenter and the other reasonably foreseeable general merchandise stores planned in the Subregion.

Additional vacancies scattered throughout Oakley could result from defections of tenants to the new center as they seek out the newest space available, and from closure of existing businesses competing with the new center. However, in the

absence of a specifically defined tenant mix for the Secondary Retail buildings in the Project, any attempt to identify such potential vacancies would be speculative, and growth in the City and the Subregion should sustain reuse of any smaller vacated spaces, which in any case are part of the lifecycle of any retail real estate market. The Project impacts might be lessened to some degree to the extent the center develops with a regional retail focus because most existing stores in Oakley are local-serving.

Elsewhere in the Subregion, there are no additional plans for competitive home improvement stores for which cumulative effects need to be considered. The other proposed center that has a substantial amount of retail space is the Streets of Brentwood project. As proposed, this will be a "lifestyle" center, catering to a more upscale market niche than the proposed Project. While it may draw shoppers from throughout the Subregion, including Oakley, it will compete in a different market niche, and the current capture rates for the proposed Project take into account the likelihood that shoppers from Oakley and elsewhere in the Subregion will shop in other outlets. Furthermore, the continued population growth in Brentwood and the Subregion should create additional overall retail demand that can be absorbed by this Project without causing other store closures or long term vacancies.

Potential for Business Closures and Sustained Vacancies

Cypress Square

The proposed Project, either alone or in conjunction with the proposed Safeway and other projects including the possible Wal-Mart expansion in Antioch, would result in increased supermarket competition, especially in the short term. This period of increased competition could lead to the closure of Raley's, the anchor at Cypress Square, which currently has sales reported below industry benchmarks. However, by 2010, just a year after the two larger Major Retail users (the supercenter and the home improvement center) within the proposed Project are expected to open. Local demand for supermarkets should increase above existing levels, even with the supercenter in place. Therefore, even if Raley's closes, another supermarket use, perhaps repositioned to a niche less directly competitive with the supercenter, should be feasible within a year or so. Additionally, there are "second generation" tenants that brokers active in Oakley note as potential reuses for this space. As a result, this analysis does not indicate a likelihood of sustained long-term vacation of existing building spaces due to the proposed Project either alone or cumulatively.

Oakley Shopping Center

The proposed Project, either alone or in conjunction with the proposed Safeway and other projects including the possible Wal-Mart expansion in Antioch, would result in increased supermarket competition, especially in

the short term. The main occupant at risk in Oakley Shopping Center is the Centro Mart, because the other tenants are small independent local-serving businesses. This store is underperforming industry benchmarks and is somewhat dated and rundown in appearance. Because of Centro Mart's location (the farthest from the proposed Project) and smaller size, the store may be less vulnerable to the proposed Project's supermarket impacts than Raley's, but is still at some risk in the short term. The other occupants of the center are local-serving and appear to be tenants that seek low rent. The possibility exists that Centro Mart may be forced to close due to near-term competition from the proposed Project, by 2010, just a year after the two larger Major Retail users (the supercenter and the home improvement center) within the proposed Project are expected to open. Local demand for supermarkets is expected to increase above existing levels even with the supercenter in place. Even if the Centro Mart closes, another supermarket use, perhaps repositioned to a niche less directly competitive with the supercenter, should be feasible. However, like the Centro Mart itself, this center is somewhat antiquated and rundown in appearance. Additional competitive pressure, from either the proposed Project or cumulative retail expansion, could result in the loss of tenants and reduced aggregate revenues, potentially placing a greater financial burden on the management of this center to address maintenance of the facilities over time.

Oakley Town Center

The proposed Project, either alone or in conjunction with the proposed Safeway and other projects including the possible Wal-Mart expansion in Antioch, would result in increased supermarket competition, especially in the short term. Additionally, the Rite Aid store, as the only significant general merchandise store operating in Oakley, may also see competitive pressure from the supercenter, but as a smaller store will offer a convenience level not attainable by the supercenter; and should survive, especially as Oakley's population increases. The Albertsons in the center is estimated to be performing above industry benchmarks, however, and as a result is less likely to face closure in the short term than either the Raley's or Centro Mart. Furthermore, by 2010, just a year after the two larger Major Retail users (the supercenter and the home improvement center) within the proposed Project are expected to open. Local demand for supermarkets should increase above existing levels even with the supercenter in place. As a result, this analysis does not indicate a likelihood for sustained long-term vacation of existing building spaces due to the proposed Project either alone or cumulatively.

Antioch Kmart

The Big Kmart located in Antioch is in close proximity to the proposed Project, less than one-half mile from the Project site. This store faces many challenges given the proximity to the proposed Project. Additionally, the cumulative impacts of the proposed Project, in conjunction with an expansion of the Wal-Mart Supercenter in Antioch, could greatly reduce the market share for this store. Though additional supportable square feet of general merchandise stores in Oakley exceeds the size of the general merchandise component of the proposed supercenter in 2010 and 2015, it is not equivalent to the size of this existing store, and in fact relies on capture of some sales to residents of Antioch and Brentwood. K-mart's sales base will likely erode and could potentially cause the store to close.

The site is a larger single user site that would not be encumbered with legacy retail tenants that could hinder redevelopment, and could perhaps be reused as retail or in some other commercial or even industrial use. However, there are a limited number of users seeking this size of space, and this site loses much of its retail locational advantage (i.e., proximity to Oakley) if the proposed Project is constructed. The site does have high visibility due to its location adjacent to a highway exit, but this advantage will be somewhat diminished upcoming completion of the State Route 4 Bypass, which will direct many commuters away from this interchange. Though this site has potential for other reuse due to its visibility and access, there remains the potential for closure of the Big Kmart use and long-term vacancy of the building.

Other Locations

The other potential closure indicated by the impacts analysis is the Albertsons on Lone Tree Way on Antioch. Under a cumulative impacts scenario, if the Antioch Wal-Mart expansion occurs and the proposed Project is constructed, this Albertsons may potentially close. However, the risk of closure is linked almost entirely to the Antioch expansion moving forward, rather than from impacts of the proposed Project. If the Albertsons store closes, the overall Subregion retail market and regional growth should lead to reuse with either another supermarket or a "second generation" user. Alternatively, the recent purchase of this Albertsons and others by Save Mart indicates that the store may be repositioned as a Save Mart, rendering it more competitive. In either case, long-term vacancy is not a likely outcome.

Potential For Urban Decay to Result Due to Prolonged Vacancy

The Market Impact Analysis determined that, even with store closures resulting from the proposed Project or cumulatively with the opening of the Oakley Safeway and the expansion of the Antioch Walmart, all but one of the retail uses

that might close would not experience long-term vacancies that might give rise to the potential for urban decay. This is due, in large part, to the 2010 increase in local demand for supermarkets to above existing levels, even with the supercenter in place. This increase in demand would occur just a year after the two larger Major Retail users (the supercenter and the home improvement center) within the proposed Project are expected to open. Accordingly, those potential temporarily vacant sites are expected to be reused within a reasonable time, approximately within a year of their possible closure, and therefore their vacancy will not to create the potential for urban decay. Further, even during these short-term vacancies, Oakley and Antioch's Municipal Code provisions, which are discussed above, would operate to address any potential for physical deterioration at the sites.

The Market Impact Analysis did conclude that the Antioch Big K-Mart would be likely to close and likely to remain vacant for a prolonged period of time. Accordingly the EIR has analyzed the potential for the prolonged vacancy of the Big K-Mart to lead to physical deterioration and the decline of the associated or nearby real estate.

Based on Antioch's Municipal Code provisions, as discussed above, there are provisions that will operate to address any potential negative impacts of the vacancy. The Antioch Municipal Code declares a "public nuisance" for any person owning, leasing, occupying, or having charge of possession of any premises in the city to maintain such a premises in such a manner that any one of a list of 30 conditions exist. The described conditions include categories such as abandoned buildings, overgrown vegetation, lack of general maintenance of a property, neglect of property, and hazardous walls, hedges, or fences. These are the types of conditions that characterize urban decay.

In the event a public nuisance is declared, the City's Code Enforcement Division can pursue abatement procedures. The Code Enforcement Division works with the Planning Division on enforcing conditions of approval on applicable properties. The Police Department and Waste Management Division also work together with the Code Enforcement Division when necessary.

Antioch can recover the cost of abatement by creating a record of the abatement procedure, holding a hearing, and collecting its costs from the property's owner. The cost of abatement of a nuisance can be specially assessed as a lien against the property pursuant to Government Code Section 38773.5. Antioch can pursue graffiti abatement through a similar program. Further, though Oakley does not have authority over the enforcement of Antioch's ordinances, under California Evidence Code section 664, it is presumed that a City's official duties are regularly performed, and it is expected that Antioch will continue to implement and enforce its nuisance and graffiti ordinances.

Finally, it is expected that K-Mart would actively seek to retenant the space, an effort which would also include maintaining the structure's appearance so as to

better market it to potential tenants. Accordingly, the prolonged vacancy of the Antioch Big K-Mart is not expected to result in urban decay. Given the above, the proposed Project's impacts associated with urban decay, on both a project and cumulative level, would be ***less-than-significant***.

4. STATUTORILY REQUIRED SECTIONS

Growth-Inducing Impacts

This EIR tiers from the programmatic EIR prepared in 2002 for the Oakley 2020 General Plan. As discussed in Chapter 5 of the General Plan EIR, overall General Plan policies, programs and maps focus on management of defined levels of growth and development in the community, while preserving the quality of life for Oakley's residents. One of the key components to a high quality of life in Oakley, as discussed in the General Plan, is the development of employment and retail uses to meet local needs. Promoting balance in future employment and revenue growth to address the costs of urban services is a key component of local planning and a focus of economic development policy in the General Plan. Development of retail uses on the River Oaks Crossing Specific Plan at the maximum square footage authorized under the Specific Plan Project would be consistent with adopted General Plan policies, programs and maps.

The Project would directly lead to growth on the Project site, and could potentially induce growth in the surrounding areas. However, the proposed Project is in conformance with the General Plan, and would not induce, either directly or indirectly, growth that has not been evaluated in the General Plan EIR. The General Plan EIR states that any traffic and population impacts from planned development would be mitigated by compliance with the City's standards as discussed in the General Plan and analyzed on page 5-2 of the General Plan EIR.

Significant Irreversible Environmental Changes

The State CEQA Guidelines mandate that an EIR address any significant irreversible environmental changes that would be involved if the proposed Project were implemented (CEQA Guidelines, Section 15126.2[c]). An impact would fall into this category if any of the following would occur:

- The project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of a project would generally commit future generations to similar uses (e.g., a highway provides access to a previously remote area);
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The phasing of the proposed consumption of resources is not justified (e.g., the project involves a wasteful use of energy).

The development of the proposed Project would result in the irreversible conversion of 76.4 acres of old growth vineyards to commercial uses, consistent

with City of Oakley Development Plan and the existing General Plan land use designation for the Project site. The proposed River Oaks Crossing Specific Plan Project would likely result in, or contribute to, the following irreversible environmental changes:

- Conversion of existing vineyard land to commercial land uses, thus committing future generations to similar uses through the construction of infrastructure. precluding alternative land uses in the future.

The proposed Project would involve the consumption of nonrenewable resources (both materials and energy) for both construction and ongoing use following completion of the Project. However, the Project would be compliant with both the waste reduction and energy efficiency requirements established by the State. Furthermore, the Project would be unlikely to result in potential environmental accidents. Therefore, the proposed Project would not result in significant and irreversible impacts beyond committing future generations to the proposed use.

Significant and Unavoidable Impacts

According to CEQA Guidelines, a Draft EIR must include a description of those impacts identified as significant and unavoidable should the proposed action be implemented (CEQA Guidelines §15126.2[b].) Such impacts would be considered unavoidable when the determination is made that either mitigation is not feasible or only partial mitigation is feasible, such that the impact is not reduced to a level that is less-than-significant. This section identifies significant impacts that could not be eliminated or reduced to a less-than-significant level by mitigations imposed by the City. The final determination of the significance of impacts and the feasibility of mitigation measures would be made by the City as part of its certification action.

The significant and unavoidable impacts of the River Oaks Crossing Specific Plan Project are listed below.

<u>Traffic and Circulation</u>

The discussion of Traffic and Circulation effects, Section 3.2 of this Draft EIR, concluded that the proposed Project would result in the following significant and unavoidable impacts:

- Cumulative Plus Project (2030) Impacts to Wilbur Avenue / SR 160 Southbound Ramps; and
- Cumulative Plus Project (2030) Impacts to Wilbur Avenue / SR 160 Northbound Ramps.

Although the mitigation measures included in this Draft EIR would reduce the above impacts to less-than-significant levels, the mitigation measures are located

outside the jurisdiction of the City of Oakley and their implementation cannot be guaranteed. Therefore, the above circumstances would result in a significant and unavoidable impact.

Noise

The discussion of Noise effects, Section 3.3 of this Draft EIR, concluded that the cumulative (2030) traffic increases (with and without the Highway 160 connector ramps) associated with the proposed River Oaks Crossing Specific Plan Project would result in noise increases compared to the existing (baseline) condition. Although the volume of traffic generated by the Project would be consistent with volumes analyzed in the Oakley 2020 General Plan EIR, the City considers the cumulative contribution of the proposed Project to the traffic-related noise environment to be a cumulatively considerable significant and unavoidable impact.

Air Quality

The discussion of Air Quality effects, Section 3.6 of this Draft EIR, concluded that the proposed Project would result in cumulative effects relating to increases in daily vehicle emissions, resulting in a degradation of regional air quality.

Although implementation of mitigation measures would reduce the magnitude of this impact, emissions would still be above BAAQMD thresholds and measures to fully mitigate this impact were not identified. Therefore, this impact would remain significant and unavoidable.

Agricultural Resources

The discussion of Agricultural Resources effects, Section 3.9 of this Draft EIR, concluded that the proposed Project would result in a significant and unavoidable impact with regard to the loss of the existing old-growth vineyards that currently exist on the Project site. Although implementation of mitigation measures would reduce the magnitude of this impact, measures to fully mitigate this impact were not identified. Therefore, this impact would remain significant and unavoidable.

Cumulative Impacts

The analyses of the proposed Project's cumulative impacts were based on buildout projected in the Oakley 2020 General Plan. Mitigation measures included in Chapter 3, and summarized in Table 1-1, would reduce the effect of the Project's cumulative impacts to Land Use and Planning, Biological Resources, Cultural Resources, Energy Conservation, Agricultural Resources, Geology and Soils, Hydrology and Water Quality, Public Services, Utilities and Service Systems, Aesthetics, Hazards and Hazardous Materials to ***less-than-significant*** levels. These effects, when evaluated in combination with other

approved and reasonably foreseeable development identified in the Oakley 2020 General Plan and discussed in Chapter 3, would remain at a less-than-significant level, in relationship to the threshold standards identified in Chapter 3. All such effects would also remain within threshold standards established in the General Plan and programmatic General Plan EIR analysis.

The analysis related to Greenhouse Gasses and Global Climate Change found that, because the long-term cumulative effects of the release of greenhouse gasses could not be quantitatively determined, the significance of long-term cumulative impacts to greenhouse gasses and global climate change associated with the proposed Project could not be determined.

Finally, the analysis included in this Draft EIR found that, though suggested mitigation measures would reduce the overall intensity of related impacts, the proposed Project would contribute incrementally to ***significant and unavoidable*** cumulative impacts to air quality, noise, and traffic and circulation.

5. ALTERNATIVES ANALYSIS

Introduction

The proposed Specific Plan Project was developed through analysis of market opportunities and community needs. The mix and quantity of Major and Secondary Retail uses identified in the Project Description (Chapter 2) were selected in the configuration shown in the Development Plan, in order to satisfy the market demand, fiscal revenue, local service need, serviceability and other Specific Plan Project objectives listed below. As mandated by CEQA, three Alternatives to the proposed Project were developed. The purpose of the Alternatives is to explore options that would reduce the significant impacts associated with the proposed Project, while still achieving the Project objectives.

CEQA Guidelines Section 15126.6(a) indicates that Alternatives analyses are included in EIRs to "...describe a range of reasonable Alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the Alternatives." Consequently it is not necessary that an EIR consider every conceivable Alternative to a project, but rather that it "...consider a reasonable range of potentially feasible Alternatives that will foster informed decision making and public participation."

An EIR is not required to consider Alternatives that are infeasible. Guidelines Section 15226.6(b) provides that the Alternatives should focus on lessening or avoiding significant environmental effects of the project, "even if these Alternatives would impede to some degree the attainment of the project objectives, or would be more costly." This chapter of the EIR describes the range of Alternatives considered, and why they have been selected for analysis.

The proposed Project, as analyzed in Chapter 3, would result in significant impacts to traffic, air, noise, and agriculture. Consistent with the CEQA Guidelines sections outlined above, the following alternatives have been developed because they would reduce, at least in part, one or more of the significant impacts associated with the proposed Project.

The following three Alternatives to the proposed Project have been included in this analysis: (1) Reduced Intensity (595,000 square feet); (2) Partial Site Development (retaining the easterly portion of the site in grape production); and (3) No Project (See Table 5-1 for a comparative inventory of the three Alternatives). The first two Alternatives represent variations on the commercial theme of the proposed Project, modified to reduce overall buildout potential, and retain a portion of the existing agricultural resources. The third Alternative (No Project) is a statutory requirement of Guidelines Section 15126.6(e), in order to

provide decision makers the ability to "compare the impacts of approving the proposed Project with the impacts of not approving the proposed Project."

Table 5-1
Summary of Project Alternatives

Land Uses	Project		Reduced Intensity Alternative		Partial Development Alternative		No Project Alternative	
Major Retailers								N/A
	A	120,000	A	100,000	A	120,000		
	B	230,000	B	200,000	B	230,000		
	C	170,000	C	170,000	C	170,000		
Subtotal Major Retailers		520,000		470,000		520,000		
Secondary Retailers								N/A
	D	90,000	D	15,000	D	0		
	E	12,000	E	8,000	E	0		
	F	12,000	F	8,000	F	0		
	G	9,000	G	6,000	G	0		
	H	4,000	H	4,000	H	0		
	I	4,000	I	4,000	I	0		
	J	8,000	J	6,000	J	0		
	K	8,000	K	6,000	K	0		
	L	10,000	L	5,000	L	0		
	M	13,000	M	9,000	M	13,000		
	N	10,000	N	4,000	N	10,000		
	O	10,000	O	4,000	O	10,000		
	P	20,000	P	8,000	P	20,000		
	Q	5,000	Q	4,000	Q	5,000		
	R	5,000	R	4,000	R	5,000		
Subtotal Secondary Retailers		220,000		95,000		63,000		
Hotel	S	30,000	S	30,000	S	30,000		N/A
Total Floor Area		770,000		595,000		613,000		N/A
Floor Area Ratio (FAR)		0.23		0.19		0.18		N/A
Land Use Emphasis	Mixed Retailing with Expanded Secondary Uses		Major Retailers with Retention of Agriculture at East End of Site		Minimum Retail With Smaller Major Retailers, Expanded Hotel & Restaurants[1]			

In addition to their relative ability to avoid or lessen environmental impacts, these three Alternatives must be evaluated in terms of their ability to fulfill the objectives of the Specific Plan as summarized below:

- To provide a retail development of at least 630,000 gross square feet, which meets the current unmet demand of consumers residing within the City and demand from planned future residential development in the City of Oakley;
- To provide a commercial center that serves both the local and regional market area to attract customers and new retailers into the City of Oakley;

[1] The Partial Development Alternative is based on the Development Plan, modified to eliminate development east of Live Oak Avenue.

- To provide a commercial development that results in a net fiscal benefit to the City of Oakley by providing new sales tax revenue and increasing property tax revenues;
- To provide a commercial center on a large, undeveloped lot in close proximity to an existing highway, and near other commercial centers to minimize travel lengths and utilize existing infrastructure to the extent possible;
- To provide a commercial center that provides sufficient development area to allow a mixture of uses in outlying parcels in addition to major anchor tenants to create a destination commercial center that will attract various types of customers to the City of Oakley;
- To provide a commercial development that can be adequately served by public services and utilities;
- To provide large-scale retail activities that will compliment existing smaller scale retail activities located throughout the City of Oakley;
- To provide commercial development that creates new jobs for the residents of Oakley; and
- To expand and provide new retail options in close proximity to local customers by providing daytime and nighttime shopping opportunities in a safe and secure environment.

In addition to the three analysis Alternatives evaluated below, four other Alternatives to the proposed Project were considered and dismissed as clearly failing to achieve compatibility with the Oakley 2020 General Plan and the basic needs of the Specific Plan. These unacceptable Alternatives include:

- *Industrial Development Alternative:* The Oakley 2020 General Plan has allocated a substantial reserve of land to the north of the Project site for a range of light industrial and business park uses, consistent with projected employment needs of the community at full buildout. Reservation of an additional 76 acres for similar industrial uses, would create an excess supply of industrially planned and zoned property, and result in either: (a) the inability to effectively develop the property based on lack of market demand; or (b) development of both the subject site and others already planned for industrial uses at an unacceptably low intensity level thereby unacceptably inflating the costs of providing public services. Long-term development of the subject site for industrial uses would also generate a substantial increase in peak-hour traffic inconsistent with Oakley 2020 General Plan service levels, and in excess of the capacity of the roadway network or alternative transportation modes to provide compensating mitigation. In addition to the traffic impacts, the Industrial Development Alternative would not reduce impacts to air quality, noise, or agriculture; therefore, the Alternative was rejected because

development of the Alternative would not reduce any of the significant impacts associated with the proposed Project.

- *Residential Development Alternative:* Additional market rate and affordable housing would respond to regional market needs, beyond the boundaries of the City of Oakley. However, additional housing uses would be inconsistent with the Oakley 2020 General Plan, because adequate supplies of housing for all segments of the community are planned at other locations not situated on major arterial roadways adjoining the entry to the community. The establishment of additional housing uses at this location would preempt the opportunity to satisfy retail needs, while stimulating additional peak-hour traffic beyond the capacity of the roadway network and planned system improvements. In addition to the traffic impacts, the Residential Development Alternative would not reduce impacts to air quality, noise, or agriculture; therefore, the Alternative was rejected because development of the Alternative would not reduce any of the significant impacts associated with the proposed Project.

- *Mixed-Use Alternative:* A mixed commercial and residential, mixed industrial and commercial, or mixed industrial and residential project would suffer from conflict with the current planned inventories for each of the associated land uses as designated by the General Plan and/or stimulate new significant environmental impacts. A mixed industrial or residential, with commercial Alternative, while capable of providing limited retail opportunities, would fall short of the critical size necessary to provide the large-scale big box uses currently lacking in the community. In addition, such mixed use development would necessarily fall short of the overall aggregate square footage of retail space needed to respond to current and future needs of the community, based on long-term land use decisions made with adoption of the Oakley 2020 General Plan. In addition to the new significant impacts to land use, the Mixed-Use Alternative would not reduce impacts to air quality, noise, or agriculture; therefore, the Alternative was rejected because development of the Alternative would result in new significant impacts, would not meet the Project objectives, and would not reduce most of the significant impacts associated with the proposed Project.

- *Off-Site Alternative:* Available land that is large enough to accommodate development of the proposed Project and designated for commercial uses by the Oakley 2020 General Plan does not currently exist (See Chapter 2, Project Description, Figure 2-13). Vacant commercial land does exist on the northwest corner of East

Cypress Road and Bethel Island Road; however, this property is approximately 40 acres, and is intended to serve the nearby East Cypress Corridor. Vacant commercial land also exists at the corner of Laurel Road and O'Hara Avenue; however, the properties on this land are mostly entitled or have applications currently filed, and are also no more than 30 or 40 acres. The Off-Site Alternative was rejected because development of the Alternative would not be feasible due to the size of the proposed Project.

The following discussion provides a review of the three analysis Alternatives in relationship to the proposed River Oaks Crossing Specific Plan Project, and compares the relative abilities of each of the Alternatives to achieve the foregoing Project objectives.

Alternative #1 - Reduced Intensity

Table 5-1 provides a quantitative comparison of the proposed Project with Alternatives #1, #2 and #3. The Reduced Intensity Alternative represents a reduction in total gross floor area of approximately 23 percent, compared to the proposed Project. The Reduced Intensity Alternative downscaling is achieved across the entire site, by reducing the size of Major Pad A and Major Pad B and Secondary Retail uses. The total of 595,000 square feet would be allocated to three large-format retail uses, a hotel, and secondary retail uses. The Reduced Intensity Alternative would retain the same access arrangement and configuration as the proposed Project.

The Reduced Intensity Alternative would meet most of the Project objectives by providing nearly 630,000 square feet of retail development that would serve both the local and regional market. However, the reduction in square footage would also reduce the ability of the commercial center to provide an extensive array of retail options. Because shoppers would still need to travel to other locations to obtain the goods and services that that would be provided under the proposed Project, the Alternative would only partially meet the objective of reducing retail trip lengths. Furthermore, the reduction in square footage would also reduce the number of new jobs that could be created for Oakley residents.

<u>Transportation and Circulation</u>

The Reduced Intensity Alternative would result in a decrease to the overall intensity of development and a decrease in the total square footage of the commercial areas within the proposed Specific Plan area when compared to the proposed Project. The decrease in intensity would, likewise, result in a decrease in the total number of vehicle trips generated by the approval of the proposed Project. Therefore, because the Reduced Intensity Alternative would be expected to produce fewer total vehicle trips than the proposed Project, the traffic and circulation impacts associated with The Reduced Intensity Alternative would be

fewer than those associated with the proposed Project. However, the cumulative impacts to traffic would remain significant and unavoidable. Fehr & Peers has determined that the Reduced Intensity Alternative, while reducing overall traffic, would not significantly change the conclusions identified for the proposed Project.

Noise

The Reduced Intensity Alternative would result in a decrease to the overall intensity of development and a decrease in the total square footage of the commercial areas within the proposed Specific Plan area when compared to the proposed Project. As a result, the noise associated with the total number of vehicle trips would decrease as compared to the proposed Project. However, The Reduced Intensity Alternative would result in a larger hotel pad, with a larger number of rooms than the hotel included in the proposed Project. As noted in the Environmental Noise Assessment (Appendix D), the hotel use involves residential occupancies, which are more sensitive to on-site roadway and truck delivery noise sources. However, as the Reduced Intensity Alternative would result in fewer total vehicle trips than the proposed Project, the Alternative would reduce the Project's incremental contribution to the significant cumulative noise impact. However, the cumulative noise impact would remain significant and unavoidable.

Air Quality

The Reduced Intensity Alternative would result in a decrease to the overall intensity of development and a decrease in the total square footage of the commercial areas within the proposed Specific Plan area when compared to the proposed Project. As a result, the air quality impacts associated with the total number of vehicle trips would decrease as compared to the proposed Project. However, the cumulative air quality impacts associated with this Alternative would remain significant and unavoidable.

Agricultural Resources

Though the Reduced Intensity Alternative would result in a reduction in intensity when compared to the proposed Project, the Alternative would require the entirety of the Project site be cleared and graded for development. Therefore, impacts related to the loss of on-site agricultural resources would remain unchanged.

Alternative #2 - Partial Site Development

The Partial Site Development Alternative would retain agricultural uses on the easterly end of the site, and reduce the maximum development potential on the site by approximately 157,000 square feet of retail space, for a net total of 613,000 square feet. This additional downscaling of the Project would be

achieved by eliminating development on the approximately 25-acre portion of the site east of the Live Oak Avenue intersection.

Due to the substantial reduction in project size, the Partial Site Development Alternative would not provide sufficient commercial space to meet the existing community needs. Nor would the Alternative create a "destination" quality center that would adequately serve the local or regional market. Furthermore, the reduction in the variety of retailers offered would reduce the ability of the shopping center to serve as a nighttime retail destination. As local residents would need to travel to other locations for some of their shopping needs the Alternative would only partially reduce retail trip lengths. Finally, the reduction in square footage would reduce the ability of the center to provide new jobs for Oakley residents.

Transportation and Circulation

The Partial Site Development Alternative would result in a decrease to the overall intensity of development and a decrease in the total square footage of the commercial areas within the proposed Specific Plan area when compared to the proposed Project. The decrease in total square footage would, likewise, result in a decrease in the total number of vehicle trips generated by the approval of the proposed Project. Therefore, because the Partial Site Development Alternative would be expected to produce fewer total vehicle trips than the proposed Project, the traffic and circulation impacts associated with the Partial Site Development Alternative would be fewer than those associated with the proposed Project. However, the cumulative impacts to traffic would remain significant and unavoidable. Fehr & Peers has determined that the Partial Site Development Alternative, while reducing overall traffic, would not significantly change the conclusions identified for the proposed Project.

Noise

The Partial Site Development Alternative would result in a decrease to the overall intensity of development and a decrease in the total square footage of the commercial areas within the proposed Specific Plan area when compared to the proposed Project. As a result, the noise associated with the total number of vehicle trips would decrease as compared to the proposed Project. Therefore, the total impact associated with noise would be expected to be less than that associated with the proposed Project. However, Partial Site Development Alternative's contribution to the significant cumulative impact to noise levels would still be cumulatively considerable, and the impact would remain significant and unavoidable.

Air Quality

The Partial Site Development Alternative would result in a decrease to the overall intensity of development and a decrease in the total square footage of the commercial areas within the proposed Specific Plan area when compared to the proposed Project. The decrease in total square footage would, likewise, result in a decrease in air quality impacts associated with vehicle trips generated by the proposed Project. Therefore, because the Partial Site Development Alternative would be expected to produce fewer total vehicle trips than the proposed Project, the air quality impacts associated with the Partial Site Development Alternative would be fewer than those associated with the proposed Project. However, the cumulative air quality impacts associated with the development of the proposed Project would remain significant and unavoidable.

Agricultural Resources

The Partial Site Development Alternative would result in the conservation of a 25-acre area in the eastern portion of the proposed Project site and the preservation of the existing vineyards within the 25-acre area. Although the impacts to agricultural resources associated with the development of the remainder of the Project site would remain, the conservation of the 25-acre vineyard area would result in a decrease in the total impacts when compared to the proposed Project. However, the impacts related to the loss of old-growth vineyards would remain significant and unavoidable.

Alternative #3 - No Project

Section 15236.6(e)(3)(a) of the CEQA Guidelines provides that evaluation of the No Project Alternative should “discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the Project were not approved, based on current plans and consistent with available infrastructure and community services.” The No Project Alternative relies on the environmental setting and regulatory context conditions as described in Chapter 2. The proposed Project is consistent with the General Plan; therefore, development under another use would be inconsistent with the General Plan. As a result, the No Project Alternative is considered a “no build” alternative, and the site would remain in agricultural production.

The No Project Alternative would not include the development of a retail center. As a result, the Alternative would not achieve any of the Project objectives.

Transportation and Circulation

The No Project Alternative would not result in an increase in traffic levels over the existing conditions. Therefore, the proposed Project's significant and unavoidable impact to the traffic would be eliminated. Therefore, because the No Project Alternative would result in fewer impact to traffic and circulation as compared to the proposed Project.

Noise

The proposed Project would cause an increase in noise levels due to construction of buildings, and increased intersection traffic. These noise impacts would not exist under the No Project Alternative; therefore, this Alternative would maintain ambient noise levels at their present level and result in fewer impacts when compared to the proposed Project. As a result, the Project would not contribute to the significant cumulative impact to noise, and the significant and unavoidable impact would be reduced to the "no impact" level.

Air Quality

The proposed Project would create air quality impacts from the construction of future commercial development of the Project site, and additional vehicle trips in the Project area. Under the No Project Alternative, development of the Project site would not occur; therefore, construction-related air quality impacts would not occur. In addition, because the number of vehicles in the Project area would not increase, impacts to operational air quality impacts would be less than those associated with the Project. As a result, the proposed Project's significant and unavoidable impact to cumulative air quality would be eliminated.

Agricultural Resources

The Project area is currently vacant land, which has been utilized for agricultural proposes in the past. In the No Project Alternative, the Project site would remain an undeveloped area of the City of Oakley, and impacts related to the loss of existing agricultural resources would be eliminated. Therefore, the No Project Alternative's impacts to agricultural resources would be less than those associated with the proposed Project.

Environmentally Superior Alternative

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. Section 15126(d)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated and states that "if the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Generally, the environmentally superior alternative is the one that would result in the fewest

unmitigable impacts or less environmental impact overall.

The Specific Plan Project is optimized to maximize the delivery of retail space on the Project site, while preserving the ability to incorporate mitigation measures to minimize significant impacts. The analysis contained in Chapter 3 supports the conclusion that a Specific Plan Project, which coordinates overall development on the one-mile long site, has a clear advantage in avoiding the unanticipated cumulative effects of piecemeal development. As a public-sponsored undertaking, the Specific Plan Project has considered the individual and cumulative effects of a finite set of land uses in the context of a well-defined Development Plan with a set of uniform development standards and design guidelines. However, the No Project Alternative would not result in any impacts; therefore, the No Project Alternative would be considered the Environmentally Superior Alternative. However, the CEQA Guidelines (Section 15126.6(e)(2)) further state that if the environmentally superior alternative is the "No Project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

As shown in Table 5-1, the Reduced Intensity Alternative would result in a 23 percent reduction in total retail floor area, through incremental reductions in both Major and Secondary Retail uses. As a result, the Reduced Intensity Alternative would result in a reduction in the intensity of impacts associated with traffic, noise, and air quality, when compared to the proposed Project (See Table 5-2). However, it should be noted that although the Reduced Intensity Alternative would lessen the degree of the above-identified areas, the level of significance of these impacts would be unchanged when compared to the proposed Project.

The Partial Development Alternative would decrease total floor space in relationship to the Specific Plan Project by roughly 20 percent, by eliminating a number of Secondary Retail uses on the easterly end of the Project site. Though this Alternative would result in a decrease in the intensity of Project impacts associated with most areas (See Table 5-2), this Alternative would not reduce the significance of these impacts. Furthermore, the implementation of the Partial Development Alternative would result in an increase in the level of significance to impacts associated with land use and retail market effects and urban decay to a potentially significant level when compared to the proposed Project.

While the Partial Development Alternative would reduce the intensity of the four identified significant Project impacts, the Alternative would conflict with existing land use designations which would create a new impact. The Reduced Intensity Alternative would reduce the intensity of three of the four identified significant Project impacts associate with the proposed Project, but not to a level of less-than-significant (See Table 5-2). As the Partial Development Alternative result in the most substantial reductions in the intensity of the Project's identified

significant impacts, the Partial Development Alternative would be considered to be the Environmentally superior Alternative.

Table 5-2
Summary of Impacts Associated with Project Alternatives

	Project	Reduced Intensity Alternative	Partial Development Alternative	No Project Alternative
Achievement of Project Objectives (Chapter 1.2):				
(a) Achieve min.630,000 SF consistent with community needs	Yes	Partially	Partially	No
(b) Adequacy to serve local and regional market	Yes	Yes	No	No
(c) Provide net fiscal benefits to City of Oakley	Yes	Yes	Yes	No
(d) Reduce retail trip lengths and utilize existing infrastructure	Yes	Partially	Partially	No
(e) Provide mix of uses creating "destination" quality center	Yes	Yes	No	No
(f) Adequately be served by utilities and municipal services	Yes	Yes	Yes	N/A
(g) Provide large-scale retail to complement existing retail	Yes	Yes	Yes	No
(h) Create new jobs for Oakley residents	Yes	Partially	Partially	No
(i) Provide daytime and nighttime retail opportunities	Yes	Yes	Partially	No
Significance of Environmental Effects (Chapter 3):				
3.1 Land Use	LTS	No change	Greater (PS)	Greater (PS)
3.2 Circulation	SU	Fewer (SU)	Fewer (SU)	No impact
3.3 Noise	SU	Fewer (SU)	Fewer (SU)	No impact
3.4 Biological Resources	LTS	No change	Fewer (LTS)	No impact
3.5 Cultural Resources	LTS	No change	Fewer (LTS)	No impact
3.6 Air Quality	SU	Fewer (SU)	Fewer (SU)	No impact
3.7 Energy Consumption and Waste Reduction	LTS	Fewer (LTS)	Fewer (LTS)	No impact
3.8 Greenhouse Gasses and Global Climate Change	LTS	Fewer (LTS)	Fewer (LTS)	Fewer (LTS)
3.9 Agricultural Resources	SU	No change	Fewer (SU)	No impact
3.10 Geology and Soils	LTS	No change	Fewer (LTS)	No impact
3.11 Hydrology and Soils	LTS	No change	Fewer (LTS)	No impact
3.12 Public Services	LTS	No change	No change	No impact
3.13 Utilities and Service Systems	LTS	Fewer (LTS)	Fewer (LTS)	No impact
3.14 Aesthetics	LTS	No change	Fewer (LTS)	No impact
3.15 Hazards & Hazardous Materials	LTS	No change	No change	No impact
3.16 Retail Market Effects and Potential Urban Decay	LTS	No change	No change	Fewer (LTS)

LTS = Less-than-Significant PS = Potentially Significant SU = Significant and Unavoidable

[1] The Partial Development Alternative is based on the Development Plan, modified to eliminate development east of Live Oak Avenue.
[2] The Reduced Density Alternative establishes the Specific plan's minimum development potential as a maximum for the site.

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