JAMES DONLON BOULEVARD EXTENSION
DRAFT
ENVIRONMENTAL IMPACT REPORT

State Clearinghouse No. 2007102106

Volume 1
Chapters 1 through 9

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TABLE OF CONTENTS

PAGE NO.

1.0 INTRODUCTION

1.1 Background 1-1
1.2 Purpose of the EIR 1-1
1.3 Scope of the EIR 1-2
1.4 Organization of the EIR 1-10
1.5 Terminology Used in the EIR 1-11
1.6 Effects Not Found to be Significant 1-11
1.7 Final EIR and Project Approval 1-12

2.0 EXECUTIVE SUMMARY

2.1 Project Summary 2-4
2.2 Project Setting 2-6
2.3 Project Objectives 2-10
2.4 Environmental Impacts 2-10
2.5 Alternatives 2-18
2.6 Issues to be Resolved 2-20
2.7 Summary of Environmental Impacts and Mitigation 2-20

3.0 PROJECT DESCRIPTION

3.1 Project Location 3-3
3.2 Project Setting 3-6
3.3 Project Characteristics 3-11
3.4 Project Objectives 3-14
3.5 Intended Use of EIR 3-14

4.0 EXISTING CONDITIONS, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 Introduction 4.1-1
4.2 Land Use and Planning 4.2-1
4.3 Aesthetics 4.3-1
4.4 Agriculture and Forestry Resources 4.4-1
4.5 Air Quality/Greenhouse Gas Emissions 4.5-1
4.6 Biological Resources 4.6-1
4.7 Cultural Resources 4.7-1
4.8 Geology and Soils 4.8-1
4.9 Hazards and Hazardous Materials 4.9-1
4.10 Hydrology and Water Quality 4.10-1
4.11 Noise 4.11-1
4.12 Population and Housing 4.12-1
4.13 Transportation/Traffic 4.13-1
4.14 Utilities and Service Systems 4.14-1

5.0 CUMULATIVE AND GROWTH-INDUCING IMPACTS

5.1 Introduction 5-1
5.2 Cumulative Impacts 5-1
5.3 Growth-Inducing Impacts 5-10

6.0 ALTERNATIVES

6.1 Introduction 6-1
6.2 Project Summary 6-1
6.3 Alternatives Eliminated From Further Consideration 6-3
6.4 Project Alternatives 6-5
6.5 Environmentally Superior Alternative 6-17

7.0 OTHER CEQA CONSIDERATIONS

7.1 Significant and Unavoidable Impacts 7-1
7.2 Significant Irreversible Changes 7-1

8.0 REPORT PREPARATION PERSONNEL 8-1

9.0 REFERENCES 9-1

LIST OF TABLES

1-1 Summary of Written Comments on Initial Study/Notice of Preparation 1-5
2-1 Summary of Impacts - Beneficial 2-21
2-2 Summary of Impacts – Less Than Significant 2-22
2-3 Summary of Impacts – Less Than Significant With Incorporation of Mitigation Measures 2-27
2-4 Summary of Impacts – Significant and Unavoidable With Incorporation of Mitigation Measures 2-49
3-1 Proposed Project Statistics 3-1
4.2-1 Consistency with City of Pittsburg General Plan 4.2-11
4.2-2 Consistency with Contra Costa County General Plan 4.2-13
4.5-1 Local Air Quality Levels 4.5-5
4.5-2 Sensitive Receptors 4.5-10
4.5-3 National and California Ambient Air Quality Standards 4.5-11
4.5-4 BAAQMD Emissions Thresholds 4.5-19
4.5-5 BAAQMD GHG Thresholds 4.5-20
4.5-6 Projected Construction Emissions 4.5-22
4.5-7 Construction Health Risk 4.5-26
4.5-8 Vehicle Miles Traveled and Greenhouse Gas Emissions 4.5-29
4.6-1 Summary of Land Cover Types 4.6-3
4.6-2 Covered and No-Take Plant Species 4.6-8
4.6-3 HCP/NCCP Non-Covered Plants 4.6-9
4.6-4 Project Land Cover Impacts 4.6-27
4.8-1 Characteristics of the Soils within the Project Area 4.8-6
4.8-2 Significant Faults 4.8-8
4.11-1 Noise Descriptors 4.11-2
4.11-2 Noise Measurement Results 4.11-6

4.11-3 Existing Traffic Noise Levels....4.11-7
4.11-4 Sensitive Receptors....4.11-8
4.11-5 Land Use Compatibility Noise Guidelines....4.11-9
4.11-6 Typical Construction Equipment Noise Level....4.11-13
4.11-7 Construction Average Leq (dBA) Noise Levels by Receptor Distance and Construction Stage....4.11-14
4.11-8 Typical Vibration Levels for Construction Equipment....4.11-16
4.11-9 Existing Plus Project Traffic Noise Scenarios....4.11-18
4.13-1 Signalized Intersection LOS Criteria....4.13-6
4.13-2 Unsignalized Intersection LOS Criteria....4.13-7
4.13-3 Existing Conditions Intersection Peak Hour Summary (CCTALOS)....4.13-11
4.13-4 Existing Conditions Intersection Peak Hour Summary (HCM)....4.13-11
4.13-5 Existing Conditions Delay Index Summary....4.13-12
4.13-6 Study Intersection LOS Thresholds....4.13-18
4.13-7 Near-Term (2015) Conditions Intersection Peak Hour LOS Summary (CCTALOS)....4.13-22
4.13-8 Near-Term (2015) No Project Conditions Intersection Peak Hour LOS Summary (HCM)....4.13-23
4.13-9 Near-Term (2015) Conditions Delay Index Summary....4.13-26
4.13-10 Cumulative (2030) Conditions Intersection Peak Hour LOS Summary (CCTALOS)....4.13-29
4.13-11 Cumulative (2030) Conditions Intersection Peak Hour LOS Summary (HCM)....4.13-30
4.13-12 Cumulative (2030) Mitigated Conditions Intersection Peak Hour LOS Summary (CCTALOS)....4.13-34
4.13-13 Cumulative (2030) Mitigated Conditions Intersection Peak Hour LOS Summary (HCM)....4.13-35
4.13-14 Cumulative (2030) Conditions Delay Index Summary....4.13-36
4.13-15 Cumulative (2030) Conditions Delay Index Summary....4.13-37
5-1 Cumulative Projects Considered....5-2
5-2 Cumulative Traffic Noise Scenario....5-9
6-1 Comparison of Alternative Environmental Impacts with Proposed Project....6-18

LIST OF FIGURES

2-1 Project Vicinity....2-2
2-2 Project Location....2-3
2-3 Site Plan....2-5
2-4 Existing County Land Use Designations....2-7
2-5 Existing City Land Use Designations....2-8
2-6 Existing City Pre-Zoning....2-9
2-7 Surrounding Land Uses....2-11
3-1 Project Vicinity....3-4
3-2 Project Location....3-5
3-3 Existing County Land Use Designations....3-7
3-4 Existing City Land Use Designations....3-8
3-5 Existing City Pre-Zoning....3-9
3-6 Surrounding Land Uses....3-10
3-7 Site Plan....3-12

4.2-1 Surrounding Land Uses 4.2-2
4.2-2 Existing County Land Use Designations 4.2-3
4.2-3 Existing City Land Use Designations 4.2-4
4.2-4 Existing City Pre-Zoning 4.2-5
4.3-1 Key View Locations 4.3-2
4.3-2 Key View 1 Existing Conditions 4.3-4
4.3-3 Key View 2 Existing Condition 4.3-5
4.3-4 Key View 3 Existing Condition 4.3-6
4.3-5 Key View 4 Existing Condition 4.3-7
4.3-6 Key View 5 Existing Condition 4.3-9
4.3-7 Key View 6 Existing Condition 4.3-10
4.3-8 Key View 7 Existing Condition 4.3-11
4.3-9 Key View 1 Proposed Condition 4.3-19
4.3-10 Key View 2 Proposed Condition 4.3-21
4.3-11 Key View 3 Proposed Condition 4.3-22
4.3-12 Key View 4 Proposed Condition 4.3-25
4.3-13 Key View 5 Proposed Condition 4.3-26
4.3-14 Key View 6 Proposed Condition 4.3-28
4.3-15 Key View 7 Proposed Condition 4.3-30
4.6-1 Land Cover Types/Project Area 4.6-4
4.8-1a Geologic Map 4.8-3
4.8-1b Geologic Map 4.8-4
4.8-2 Soil Map 4.8-7
4.10-1 Watershed Boundaries 4.10-3
4.11-1 Sound Levels and Human Response 4.11-3
4.13-1a Project Study Area 4.13-2
4.13-1b Project Study Area 4.13-3
4.13-2 Existing Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control 4.13-10
4.13-3 Near Term (2015) No Project Conditions Peak Hour Intersection Volumes, Lane Configuration and Traffic Control 4.13-21
4.13-4 Near Term (2015) With Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control. 4.13-25
4.13-5 Cumulative (2030) No Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control 4.13-28
4.13-6 Cumulative (2030) With Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control 4.13-32
6-1 Kirker Pass Road Relocation “T” Intersection Alternative 6-4
6-2 Approximate Southern Alignment Alternative 6-6
6-3 Approximate Northern Alignment Alternative 6-10

APPENDICES

Volume 2

A Notice of Preparation, Initial Study and Public Comments
B Air Quality/Greenhouse Gas Modeling Data
C Biological Resources;
- C.1 James Donlon Boulevard Extension Planning Survey Report
- C.2 Tree Survey Report
- C.3 Special-Status Species Report for CEQA Compliance
- C.4 Alternatives Alignment Assessment
- C.5 East Contra Costa County HCP/NCCP Planning Survey Report

D Cultural Resources
- D.1 Cultural Resources Survey
- D.2 California Register of Historical Resources and National Register of Historic Places Evaluation of CA-CCO-819 (P-07-03086)
- D.3 Draft Archaeological Discovery Plan

Volume 3

E Geological and Geotechnical Resources
- E.1 Geological and Geotechnical Investigation Report: Proposed Buchannan Road Bypass (2008)
- E.2 Engineering Geologic and Geotechnical Feasibility Report: Four Proposed James Donlon Boulevard Extension Alternatives (2012)
- E.3 Supplemental Engineering Geologic and Geotechnical Report James Donlon Boulevard Alignment Extension Middle Alignment (C2-Low) Alternative

F Hazardous Materials
- F.1 Environmental Data Resources, Inc (EDR) James Donlon Boulevard Extension Report
- F.2 Department of Toxic Substances Control EnviroStor GBF/Pittsburg Dumps

G Project Study Report
- G.1 Buchanan Bypass Project Study Report (2003)
- G.2 James Donlon Boulevard Extension Technical Memorandum Report (2012)
- G.3 Existing Buchanan Road Widening Feasibility Study (2006)

H Noise Data
I Traffic Data

1.0 INTRODUCTION

1.1 BACKGROUND

The California Environmental Quality Act (CEQA) requires California public agencies to consider the environmental consequences of projects for which they have discretionary authority. The public agency with the principal responsibility for carrying out or approving a project is the "lead agency." CEQA requires the lead agency to prepare an Environmental Impact Report (EIR) if there is substantial evidence, in light of the whole record, that a project may have a significant effect on the environment. A significant effect is defined in CEQA as a substantial and adverse physical change in the environment.

The City of Pittsburg (City), as lead agency, has determined that based upon preliminary analysis in an Initial Study, an EIR is the appropriate environmental analysis document pursuant to the CEQA (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et seq.) for the proposed James Donlon Boulevard Extension (proposed project). The proposed project is located within unincorporated Contra Costa County, immediately south of the City limits.

Development of this proposed project requires annexation of two privately-owned properties and a general plan amendment and pre-zone to designate the properties Open Space (OS) District, with the option to provide an Agricultural Preserve Overlay. In addition, the City also proposes to annex Kirker Pass Road right-of-way from Nortonville Road to the City limit line; which would potentially affect five additional properties due to slope easements or roadway widening. The proposed project is described in detail in Chapter 3, *Project Description*.

The overall purposes of the CEQA process are to:

- Identify the significant effects to the environment of a project, identify alternatives, and to indicate the manner in which those significant effects can be avoided or mitigated;
- Provide for full disclosure of the proposed project's environmental effects to the public, the agency decision-makers who will approve or deny the proposed project, and responsible and trustee agencies charged with managing resources that may be affected by the proposed project; and
- Provide a forum for public participation in the decision-making process with respect to environmental effects.

1.2 PURPOSE OF THE EIR

An EIR is a public informational document used in the planning and decision-making process. This project-level EIR analyzes the environmental impacts of the proposed project. The City of Pittsburg Planning Commission and City Council will consider the information in the EIR, including the public comments and staff response to those comments, during the public hearing process. As a legislative action, the final decision is made by the City Council who may approve conditionally approve, or deny the proposed project. The purpose of an EIR is to identify:

- The significant potential impacts of the proposed project on the environment and indicate the manner in which those significant impacts can be avoided or mitigated;
- Any unavoidable adverse impacts that cannot be mitigated; and
- Reasonable and feasible alternatives to the project that would eliminate any significant adverse environmental impacts or reduce the impacts to a less-than-significant level.

An EIR also discloses growth-inducing impacts; impacts found not to be significant; and significant cumulative impacts of the proposed project when taken into consideration with past, present, and reasonably foreseeable future projects.

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

CEQA requires an EIR reflect the independent judgment of the lead agency regarding the impacts, the level of significance of the impacts both before and after mitigation, and mitigation measures proposed to reduce the impacts. A Draft EIR is circulated to responsible agencies, trustee agencies with resources affected by the project, and interested agencies and individuals. The purposes of public and agency review of a Draft EIR include sharing expertise, disclosing agency analyses, checking for accuracy, detecting omissions, discovering public concerns, and soliciting mitigation measures and alternatives capable of avoiding or reducing the significant effects of the project, while still attaining most of the basic objectives of the project.

Reviewers of a Draft EIR are requested to focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate significant environmental effects.

Section 15123(b)(3) of the State CEQA Guidelines requires that an EIR contain issues to be resolved, which includes the choices among alternatives and whether or how to mitigate significant impacts. The major issues to be resolved regarding the proposed project include decisions by the lead agency as to whether or not:

- The Draft EIR adequately describes the environmental impacts of the project,
- The recommended mitigation measures should be adopted or modified, or
- Additional mitigation measures need to be applied.

1.3 SCOPE OF THE EIR

The focus of this EIR is limited to specific issues and concerns identified as causing potentially significant effects on the environment based on the proposed annexation, general plan amendment, pre-zone, and ultimately the proposed roadway extension.

1.3.1 DECISION-MAKING PROCESS

CEQA requires lead agencies to solicit and consider input from other interested agencies, citizen groups, and individual members of the public. CEQA also requires a project to be monitored after it has been permitted to ensure that mitigation measures are carried out.

CEQA requires the lead agency to provide the public with a full disclosure of the expected environmental consequences of a proposed project and with an opportunity to provide comments. In accordance with CEQA, the following is the process for public participation in the decision-making process:

Initial Study/Notice of Preparation. The City prepared and distributed an Initial Study (IS) and Notice of Preparation (NOP), dated October 23, 2007, for the proposed project. In conjunction with this public notice, a scoping meeting was held by the City of Pittsburg on November 6, 2007, to provide a forum for public comments on the scope of the EIR. Subsequent to the October 23, 2007 IS/NOP, the City issued a revised IS/NOP dated February 10, 2012, due to revisions to the project description. Both IS/NOP were distributed to responsible, trustee and local agencies for review and comment. The 2007 and 2012 IS/NOPs, along with responses to the IS/NOPs are included in Appendix A of this EIR.

Draft EIR Preparation. A Draft EIR is prepared, incorporating public and agency responses to the IS/NOP and scoping process. The Draft EIR is circulated for review and comment to appropriate agencies and additional individuals and interest groups who have requested to be notified of EIR projects. Per Section 15105 of the State CEQA Guidelines, the City will provide a 45-day public review period on the Draft EIR. The City will subsequently respond to each comment on the Draft EIR received in writing through a Response to Comments chapter in the Final EIR. The Response to Comments will be provided to each agency or person who provided written comments on the Draft EIR a minimum of ten business days before the scheduled Planning Commission hearing on the Final EIR and proposed project.

Preparation and Certification of Final EIR. The City Planning Commission will consider the Final EIR and the proposed project, acting in an advisory capacity to the City Council. Upon receipt of the Planning Commission's recommendation, the City Council will also consider the Final EIR, all public comments, and the proposed project, and take final action on the project. At least one public hearing will be held by both the Planning Commission and the City Council to consider the Final EIR, take public testimony, and then approve, conditionally approve, or deny the proposed project.

INITIAL STUDY/NOTICE OF PREPARATION

Pursuant to Section 15082 of the State CEQA Guidelines, as amended, the City Development Services Department, Planning Department circulated an IS/NOP to the State Clearinghouse, public agencies, special districts, and members of the public for a public review period beginning October 23, 2007 and ending November 23, 2007. Subsequently, the proposed project was revised and a revised IS/NOP was circulated to the State Clearinghouse, public agencies, special districts, and members of the public for a public review period beginning February 10, 2012 and ending March 12, 2012. The 2007 and 2012 IS/NOPs and comments received are contained in Appendix A, *Notice of Preparation, Initial Study, and Public Comments*.

The purpose of an IS/NOP is to assist in the preparation of an EIR by focusing the EIR on the effects determined to be potentially significant, identifying the effects determined not to be significant, and explaining the reasons for those determinations. Refer to Section 1.6, *Effects Not Found To Be Significant*.

An IS/NOP is a document that is sent by the lead agency to notify public agencies and interested parties that the lead agency plans to prepare an EIR for a proposed project. The purpose of an IS/NOP is to solicit comments from public agencies and interested parties, and to identify specific environmental issues that should be considered in the EIR.

The IS/NOP prepared for the proposed project identified the following issues to be addressed in this EIR:

- Land Use and Planning
- Aesthetics
- Agriculture and Forestry Resources

- Air Quality/Greenhouse Gas Emissions
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Population and Housing
- Transportation/Traffic
- Utilities and Service Systems

PUBLIC REVIEW AND SCOPING MEETING

Pursuant to Section 15206 of the State CEQA Guidelines, the lead agency is required to conduct at least one scoping meeting for all projects of statewide, regional, or area-wide significance. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding, but not limited to, the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed.

On November 6, 2007, the City held a public meeting on the scope of the EIR as proposed in the IS/NOP. A public notice of the meeting was sent to members of the public and interested parties. At the meeting, members of the public had the opportunity to identify issues of special concern and suggest additional issues to be considered in the EIR. Minutes from the meeting are included in Appendix A. A public scoping meeting following issuance of the revised IS/NOP in February 2012 was not held.

The City received 12 letters during the 2007 IS/NOP circulation and 10 letters during the 2012 IS/NOP circulation with substantive comments regarding the proposed project. The comments are summarized in Table 1-1, *Summary of Written Comments on Notice of Preparation/Initial Study*.

Table 1-1
Summary of Written Comments on Initial Study/Notice of Preparation

Commenting Party	Comments Received	
	2007	2012
State Agencies		
California Department of Fish and Game (CDFG) (March 9, 2012)	No comment letter was submitted.	The commenter requests that the EIR include a description of biological resources baseline. The EIR should discuss special-status species known to be within the project area, as well as the likelihood of presence, and conduct detailed surveys during the appropriate seasons. The commenter provided a list of potential mitigation measures. The commenter requests that wildlife crossings be included in the design. The commenter requests that the EIR analyze all potential impacts as well as reasonable alternatives. CDFG is considered a responsible agency and will issue appropriate permits and approvals, where necessary, and requires a copy of the Notice of Determination (NOD) prior to issuance of any permit or agreement.
California Department of Transportation (Caltrans) – District 4 (October 26, 2007 and March 12, 2012)	The commenter requests that the traffic study include: a site plan showing ingress, egress, and right-of-way; project related trip generation and distribution; average daily trips (ADT) and peak hour volumes; level of service (LOS) on affected roadways; illustrations of roadways with trip distribution data and intersection geometrics; any building potential adjacent to the proposed project roadway extension; appropriate mitigation with fair share funding, financing, scheduling and implementation details; and any trip reducing measures. The commenter requests information regarding any encroachment into State right-of-way (ROW). Finally, the commenter requests a copy of the EIR, including technical appendices, be sent to Caltrans District 4 Office of Transit and Community Planning.	The commenter requests the EIR include information regarding any impacts to State Route (SR) 4 as a result of the proposed project.
Local Agencies		
Contra Costa Water District (CCWD) (November 21, 2007 and February 28, 2012)	The commenter acknowledges that the proposed project and Sky Ranch II are outside of the CCWD service area and has no entitlements to allow for services. The commenter requests that the EIR include: a description of the relationship between the proposed project and Sky Ranch II; a description of the potential for development with the expanded urban limit line; a discussion of water requirements and any annexation into the CCWD service area,	The commenter has no additional comments beyond those made during the 2007 IS/NOP circulation.

Commenting Party	Comments Received	
	2007	2012
	which would require review under the National Environmental Policy Act (NEPA); an analysis of water needs during construction and for permanent landscaping; and an analysis of drainage impacts on the Contra Costa Canal.	
Contra Costa County Flood Control and Water Conservation District (February 23, 2012)	No comment letter was submitted.	The commenter requests that the EIR provide maps depicting the following: all parcels involved in the proposed project; watershed boundaries; existing water bodies, including all existing watercourses, tributaries and man-made drainage; and drainage areas within the main watershed. The commenter requests the EIR analyze potential impacts to watercourse(s) regarding capacity, distribution of runoff, and improvements within watercourse(s). The commenter further requests a discussion of the design and construction of storm drain facilities conveying runoff water from the proposed project site to the nearest adequate drainage facility/water course while keeping in the watershed (Title 9 of the County Ordinance Code). The commenter provides information regarding mitigation, if necessary, including contribution of $0.80/square foot of newly created impervious area to the drainage improvement fund for Kirker Creek.
Contra Costa Community Development Department (November 21, 2007)	The commenter requests the EIR evaluate traffic impacts using guidance from the Contra Costa Transportation Authority's Technical Procedures Manual and that the appropriate service thresholds be used and that non-vehicular traffic be considered. The EIR should consider an alternative where the main volumes continue to be on Kirker Pass Road. The commenter requests that the County and City Public Works work together. The commenter requests that the proposed project be annexed to the City. The commenter requests that the EIR reference the Program EIR for Buchanan Road Bypass and explain the relationship between the Program EIR and this Project Level EIR. The commenter also requests that the EIR discuss traffic volume measures such as metering at specific intersections. Finally, the commenter requests that any damage to County roads be mitigated upon construction completion.	No comment letter was submitted.
Contra Costa Local Agency Formation Commission (LAFCO) (November 21, 2007 and March 12, 2012)	The commenter requests that the project description contained in the EIR reference LAFCO actions required, lists LAFCO as "Other Public Agencies Whose Approvals is Required" and as a Responsible Agency. The commenter further requests that the EIR evaluate the LAFCO actions and relevant factors on which the LAFCO decision	The commenter requests that the project description contained in the EIR: reference 56668 and other relevant factors; reference LAFCO actions; list LAFCO as "Other Public Agencies Whose Approvals is Required" and as a Responsible Agency. The commenter requests that the EIR evaluate the LAFCO actions and relevant Cortese-Knox-Hertzberg Local Government Act of

Commenting Party	Comments Received	
	2007	2012
	would be based, identify any annexations into utility districts, and discuss the relationship between the proposed project and the Sky Ranch II project.	2000 factors on which the LAFCO decision would be based, identify a preferred alignment, discuss a sphere of influence (SOI) amendment if the project area is outside the City's SOI, provide maps that clearly identifies the proposed project area, City limits and SOI, evaluate the extent to which agricultural land is considered prime, and if applicable, acknowledge and discuss that LAFCO is precluded from annexing Williamson Act land to a city if it will result in the extension of services (including roads), discuss the relationships between the proposed project and the Montreux and the Sky Ranch Projects, evaluate growth inducement and provide mechanisms for addressing this issue, evaluate any increases in public services required, evaluate water needs for permanent landscaping, address water needs of future potential development that could result from this project, provide a Plan for Service, and discuss the financing for the new roadway.
East Bay Regional Park District (November 20, 2007 and March 5, 2012)	The commenter requests the EIR analyze the project's impacts on the quality of the recreational experience provided by Black Diamond Mines and Concord Naval Weapons Station regional park (CNWS). The commenter requests that the EIR analyze biological resources (including habitat fragmentation) and watershed health, traffic impacts including any access changes to Nortonville Road, growth inducement, noise impacts as associated with Black Diamond Mines, aesthetic impacts on parks and open space, public safety and increases in public services, increased wildfire potential, impacts to cultural resources including the Thomas Ranch, and compliance with the East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP). The commenter also requests that the EIR discuss any needs to construct new regional roadway connections as a result of the proposed project.	The commenter requests that the EIR analyze impacts related to biological resources, East Contra Costa County HCP/NCCP compliance, traffic and circulation, growth inducement, noise, aesthetics, public safety, fire hazards, water quality, and historic resources. The commenter requests that an alternative roadway alignment be considered that uses flatter topography to the north of the proposed alignments. The commenter requests that the roadway design avoid impacts to streams. In addition, the commenter acknowledges that all comments from November 2007 continue to apply to the proposed project.

Commenting Party	Comments Received	
	2007	2012
City of Concord – Permit Center (November 16, 2007)	The commenter requests that the EIR evaluate traffic impacts on roadway segments and intersection along Kirker Pass/Ygnacio Valley Road and Clayton Road/Treat Boulevard during peak hours. The commenter also requests that the EIR discuss changes in traffic patterns by commuters from east County to use Kirker Pass Road, Ygnacio Valley Road, and other local streets in Concord.	No comment letter was submitted.
Interested Parties		
TRANSPAC Transportation Partnership and Cooperation (November 16, 2007)	The commenter requests that the EIR discuss control point metering and the proposed project's implementation of these controls. The commenter requests that the City work with TRANSPAC, City of Concord, and other County jurisdictions to establish appropriate parameters and encourages the City to work with Central County jurisdictions to develop mitigation agreements as defined in the TRANSPAC adopted Regional Transportation Mitigation Program (RTMP).	No comment letter was submitted.
Greenbelt Alliance (November 21, 2007 and March 12, 2012)	The commenter requests that the EIR evaluate the protection of open space, growth inducing impacts, traffic impacts including redistribution of traffic patterns, cultural resource impacts, agricultural impacts including impacts to the existing cattle ranch activities, landslide potential as well as other geotechnical issues, fiscal impacts caused by maintaining the roadway, social and economic impacts, air quality impacts, noise impacts, and compliance with the East Contra Costa County HCP/NCCP. In addition, the commenter requests that the EIR evaluate a range of project alternatives.	The commenter requests that the EIR clearly identify the proposed project's purpose and need, as well as project objectives, and the acquisition and annexation into the City limits. The commenter requests that the EIR evaluate greenhouse gas emissions and other air quality impacts, compliance with the County's ability to achieve its Climate Action Plan goals, climate change impacts, growth inducing impacts, long-term maintenance costs, and evaluate how the proposed project would help facilitate the City's "complete streets" and improve pedestrian and bicycling conditions.
California Native Plant Society – East Bay Chapter (November 16, 2007)	The commenter requests that the EIR evaluate fire hazards, climate change, soil stability, and erosion potential. The commenter also requests that the EIR provide analysis and surveys, when applicable, regarding invasive noxious weeds, special-status plant species, rare plant communities, riparian areas, and drainages/streams. The commenter requests that native plants be used for revegatation.	No comment letter was submitted.

Commenting Party	Comments Received	
	2007	2012
Save Mount Diablo (November 6, 2007 and March 12, 2012)	The commenter requests that the EIR evaluate the consistency of the project with the City's General Plan and analyze traffic impacts including changes in traffic patterns, growth inducing impacts, aesthetic impacts including impacts on the Black Diamond Mines Regional Preserve, biological resources including movement corridors, geology and soil impacts, air quality impacts, and agricultural impacts. The commenter requests information be provided on grading amounts, anticipated permits, project cost and funding, compliance with Measure P, and reasons behind changing the name of the proposed project from Buchanan Bypass to James Donlon Boulevard Extension.	The commenter requests that the EIR evaluate impacts on: geologic/soil stability and landslide potential; biological resources including wildlife movement areas and special-status species; water resources; cultural resources; agricultural resources; traffic volumes and patterns; visual resources including photo simulations; air quality and greenhouse gases; hydrology and water quality; wildland fire potential; and noise. The EIR should analyze growth inducing and cumulative impacts. The commenter requests that the EIR discuss land acquisition and annexation activities, and the relationship between the proposed project and the planned development. The EIR should include a purpose and need, project objectives, benefits to City residents and identify the changes between the 2007 and 2012 project description. The EIR should provide a preferred alternative. The commenter further requests information regarding parcels impacted by the proposed project. Finally, the commenter requests that an economic analysis be conducted to determine the benefit of the proposed project to the City's residents.
Discovery Builders (November 6, 2007)	The commenter requests that the EIR analyze impacts based on a four-lane road and that the EIR consider access to the Montreaux Property.	No comment letter was submitted.
Kinder Morgan (April 17, 2012)	No comment letter was submitted.	The commenter provides information regarding specific requirements in order to construct within 10 feet of the Kinder Morgan high pressure pipeline. These include: conducting potholing to determine location and depth in the presence of a Kinder Morgan representative; notification procedures prior to start of construction; excavation activities must be conducted in the presence of a Kinder Morgan representative; and an executed inspection agreement must be in place prior to commencement of work.
Mike Lengyel (November 6, 2007)	The commenter requests that the EIR analyze visual resources impacts, growth inducing impacts, soil stability and landslide potential, biological resource impacts, wildlife movement corridor impacts, air quality and greenhouse gas impacts, and analyze project alternatives. The commenter further requests that the EIR discuss proposed project funding.	No comment letter was submitted.
Joseph Suagusa (March 6, 2012)	No comment letter was submitted.	The commenter requests that the EIR analyze growth inducing impacts and discuss the relationship between the proposed project and surrounding planned and approved development.

1.3.2 CONTENTS OF DRAFT EIR

The environmental issues determined in the IS/NOP to have potentially significant impacts and the issues identified during the IS/NOP review period for inclusion in the EIR have been incorporated into this EIR. For each environmental issue, the EIR describes the environmental setting (current conditions), then discusses and analyzes the potential related impacts that could be caused by project implementation.

For each potentially significant impact, the EIR specifies ways to mitigate the impact, including implementation of applicable mitigation measures. The project proponent must implement all mitigation measures identified in the EIR or their environmental equivalent. "Environmental equivalent" means any mitigation measure and/or timing thereof, subject to the approval of the City, that, when compared to the mitigation measure, would have the same or superior result and would have the same or superior effect on the environment. The City's Development Services Department, in conjunction with appropriate agencies or other City departments, would determine the adequacy of any proposed environmental equivalent. Any costs associated with information or environmental documentation required to determine environmental equivalency would be borne by the project proponent. Like other mitigation measures, the City would ensure compliance with an environmental equivalent through the mitigation monitoring process.

1.4 ORGANIZATION OF THE EIR

The EIR has been organized into the following sections:

Chapter 1, Introduction: Provides an introduction and overview that describes the purpose of the EIR, summarizes the EIR review and certification process, identifies key areas of environmental concern, and outlines the EIR process.

Chapter 2, Executive Summary: Summarizes the proposed project, required actions by the City and other agencies, environmental setting, potential impacts of the project, mitigation measures identified to reduce or eliminate significant impacts, and alternatives to the proposed project.

Chapter 3, Project Description: Presents project objectives, describes the site location and characteristics, provides a detailed description of the proposed project and specifies the intended use of the EIR, including the actions required to implement the proposed project.

Chapter 4, Environmental Analysis: Describes the existing conditions, analyzes the proposed project's potential environmental impacts and specifies measures to mitigate the identified impacts.

Chapter 5, Cumulative Impacts and Growth-Inducing Impacts: Describes cumulative and growth-inducing impacts resulting from implementation of the proposed project, including reasonably anticipated future projects that may have related or cumulative impacts.

Chapter 6, Alternatives: Evaluates a reasonable range of project options (alternative ways of meeting the project objectives) that would reduce or avoid environmental impacts, including the No Project Alternative.

Chapter 7, Other CEQA Considerations: Discusses irreversible or irretrievable commitments of resources and significant and unavoidable impacts.

Chapter 8, Report Preparation Personnel: Lists personnel who prepared the EIR, including City staff and consultants.

Chapter 9, References: Lists sources of information used in the preparation of the EIR.

Appendices: Includes the two IS/NOPs for the EIR, comments received in response to the IS/NOPs, the City's scoping activities, and background technical materials.

1.5 TERMINOLOGY USED IN THE EIR

This EIR uses the following terminology to denote the significance of environmental impacts of the proposed project:

- A "beneficial impact" is an environmental impact that would be a positive contribution or improvement to the physical conditions that exist in the area affected by the project.
- An "environmental impact" is a direct or indirect effect that would be caused by the project that constitutes a physical change to the existing natural or man-made conditions within the area affected by the project.
- "No impact" is the lack of any environmental impact, and no mitigation is required.
- A "less than significant" impact or an impact that is "not significant" is an environmental impact that would cause no substantial adverse change in the environment and, as such, requires no mitigation.
- A "potentially significant" or "significant" impact is an environmental impact that could or would cause a substantial adverse change in the environment. In such a case, an impact has been identified that, although potentially significant, can be avoided or reduced to less than significant levels through mitigation. Such mitigation may include project design features that have been incorporated into the project or existing requirements, such as municipal code or ordinance, engineering and design requirements (e.g., Uniform Building Code), and standard regulations set by regional, state and federal agencies. A further description of mitigation measures is provided below.
- A "significant and unavoidable" impact is an environmental impact that could or would cause a substantial adverse change in the environment and cannot be avoided if the project is implemented; mitigation may be recommended, but would not reduce the impact to a less than significant level.
- "Mitigation measures" are defined in State CEQA Guidelines Section 15370 as:
  - Avoiding the impact altogether by not taking a certain action or parts of an action
  - Minimizing the impact by limiting the degree or magnitude of the action and its implementation
  - Rectifying the impact by repairing, rehabilitating or restoring the affected environment
  - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
  - Compensating for the impact by replacing or providing substitute resources or environments

1.6 EFFECTS NOT FOUND TO BE SIGNIFICANT

Through the IS/NOP scoping process, the City determined that the proposed project would have no significant impacts on certain environmental issues and so has excluded these issues from further analysis in this EIR. These excluded issues are described below.

1.6.1 MINERAL RESOURCES

The Contra Costa County General Plan (County General Plan) does not designate any mineral resources in the vicinity of the proposed project (Contra Costa County, 2005). The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or 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. Therefore, no further analysis is necessary.

1.6.2 PUBLIC SERVICES

The proposed project would include annexation, a general plan amendment, and a pre-zone which would ultimately allow for the construction of the James Donlon Boulevard extension. The proposed project would not result in an increased need for public services. The proposed project would not increase traffic volumes, but rather redistribute existing traffic patterns and the proposed project would not include easily-ignitable components. Therefore, no reasonably foreseeable impacts on fire protection services would result from the proposed project. To the extent that traffic conditions would improve, fire protective services would be enhanced. Although there is the potential for fire to occur within the proposed project area, this threat currently exists and the proposed project would provide a more direct route through the area for fire protective services (refer to Section 4.9, *Hazards and Hazardous Materials*, for an analysis pertaining to wildfires). Similarly, no reasonably foreseeable impacts on police protection would result from the project, and to the extent that traffic conditions would improve, police services would be enhanced. Although there is the potential for accidents or other incidents to occur within the proposed project area that would require police protective services, this threat currently exists on the surrounding roadways. As stated earlier, the proposed project would not increase traffic, but rather redistribute traffic within the City, thus no net change would occur in the need for police protective services as a result of the proposed project. As it is not associated with residential or commercial development, nor would it result in an indirect increase in population, the proposed project would not create or increase demand for schools, parks, or other public facilities. No further analysis is necessary.

1.6.3 RECREATION

The proposed project would not have any reasonably foreseeable significant effect on parks or other recreational facilities. The project would not would not increase the use of recreational facilities, and would not include or require the construction or expansion of recreational facilities. Recreational facilities in the area would maintain existing access. Therefore, no further analysis is necessary.

1.7 FINAL EIR AND PROJECT APPROVAL

1.7.1 PUBLIC REVIEW OF DRAFT EIR

In accordance with CEQA, a good-faith effort has been made during the preparation of this EIR to contact all affected agencies, organizations and persons who may have an interest in this project.

This Draft EIR, with an accompanying Notice of Completion (NOC), is being circulated to the California State Clearinghouse, trustee agencies, responsible agencies, other government agencies and interested members of the public for a 45-day review period as required by CEQA. The review period for this Draft EIR is between April 15, 2013 and May 29, 2013. During this period, public agencies and members of the public may provide written comments on the analysis and content of the EIR. In reviewing a Draft EIR, readers should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and on ways in which the significant effects of the proposed project might be avoided or mitigated.

All written comments on this Draft EIR must be mailed, delivered, faxed or emailed by 5:00 p.m. on May 29, 2013, and addressed as follows:

Mail or Delivery:	City of Pittsburg Development Services Department, Planning Department 65 Civic Avenue Pittsburg, CA 94565 Attention: Leigha Schmidt, Associate Planner
Fax:	Leigha Schmidt, Associate Planner Development Services Department, Planning Department (925) 252-4015
Email:	LSchmidt@ci.pittsburg.ca.us

All comments received on the Draft EIR during the 45-day public review period will be responded to by the City in the Final EIR.

1.7.2 CONTENTS OF FINAL EIR

The following documents will collectively comprise the Final EIR:

- The Draft EIR
- A list of all persons, organizations and public agencies that commented on the Draft EIR within the public review period
- Copies of all comments received
- Written responses to those comments and any supporting documentation

1.7.3 CERTIFICATION OF FINAL EIR AND PROJECT APPROVAL PROCESS

For a period of at least ten days prior to any public hearing during which the lead agency will take action to certify the Final EIR, responses to comments will be made available to, at a minimum, those agencies and individuals that provided written comments on the Draft EIR. Pursuant to Section 15090(a) of the State CEQA Guidelines, the Final EIR must be certified before the lead agency can take action on (approve or deny) the proposed project.

After the Final EIR is certified, the City will evaluate the merits of the proposed project and decide whether to approve the project or not. Before approving (or conditionally approving) the proposed project, the City must prepare CEQA findings in accordance with Section 15091 of the State CEQA Guidelines. The findings must briefly explain the rationale behind the finding for each significant impact identified for the project. If significant environmental impacts that cannot be reduced to a less than significant level are identified for the proposed project, the City must prepare a Statement of Overriding Considerations pursuant to Section 15093 of the State CEQA Guidelines. The City must also prepare a Mitigation Monitoring and Reporting Program (MMRP) in accordance with Section 15097 of the State CEQA Guidelines.

Certification of the Final EIR and approval of the CEQA findings, Statement of Overriding Considerations and MMRP may be considered during the final public hearing. Certification of the Final EIR must be first in the sequence of approvals.

2.0 EXECUTIVE SUMMARY

The James Donlon Boulevard Extension Project (proposed project) is a proposal by the City of Pittsburg (City) to construct a 1.71-mile extension of James Donlon Boulevard from the western edge of the approved Sky Ranch II Subdivision (Sky Ranch II) to Kirker Pass Road, within unincorporated Contra Costa County (County), but within the Urban Limit Line, City's Planning Area, and the City's Sphere of Influence (Figure 2-1, *Project Vicinity*, Figure 2-2, *Project Location*). The proposed project would provide a limited access arterial roadway to serve regional circulation needs and relieve existing traffic congestion on Buchanan Road, which currently receives a high volume of east-west commute traffic between the City of Antioch and the City of Concord. In addition to the extension of James Donlon Boulevard, the City proposes to upgrade Kirker Pass Road from Nortonville Road to the City limit line (approximately 0.63 mile) from a four-lane rural road to a four-lane urban road. A northbound to eastbound free right-turn from Kirker Pass Road to the extension of James Donlon Boulevard is also proposed. The proposed project requires annexation of two properties and Kirker Pass Road from Nortonville Road north to the City limit lines; a City General Plan amendment to designate the land as Open Space; and pre-zone to designate the properties Open Space (OS) District with an option to provide an Agricultural Preserve Overlay.

The proposed project was previously referred to as the Buchanan Road Bypass in various planning documents, including the City's General Plan 2004 (City General Plan) and the East Contra Costa Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP). The James Donlon Boulevard Extension is the same project and has undergone a name change along with other alignment modifications. Additionally, in 1993, a Program EIR was prepared for the proposed Buchanan Road Bypass. By nature, a Program EIR generally analyzes broad environmental effects of a program with the acknowledgement that site-specific environmental review may be required for particular aspects of the program (State CEQA Guidelines, Section 15168). The 1993 Program EIR did not define the proposed Project in specific detail or in engineering design terms; therefore, it is only relevant in the sense that it provides baseline information on the general environmental impacts regarding construction and operational conditions in the area defined by the preliminary route configuration. Thus, the Program EIR is significantly different in the preliminary route configuration (i.e., roadway alignment and Kirker Pass Road intersection configuration) from the proposed project described in this EIR.

This Draft Environmental Impact Report (EIR) has been prepared by the City of Pittsburg as the Lead Agency under the California Environmental Quality Act (CEQA). The Draft EIR provides information about the environmental setting and impacts of the proposed project and alternatives. It informs the public about the proposed project and its impacts and provides information to meet the needs of local, State, and Federal permitting agencies that are required to consider the proposed project. The EIR will be used by the City to determine whether to approve the general plan amendment, pre-zone change, and to apply to the Contra Costa County Local Agency Formation Commission (LAFCO) for annexation of two properties.

This Executive Summary summarizes the requirements of the State CEQA Statutes and Guidelines, provides an overview of the proposed project and alternatives, identifies the purpose of the Draft EIR, outlines the potential impacts of the proposed project and the recommended mitigation measures, and discloses areas of controversy and issues to be resolved.

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Project Vicinity

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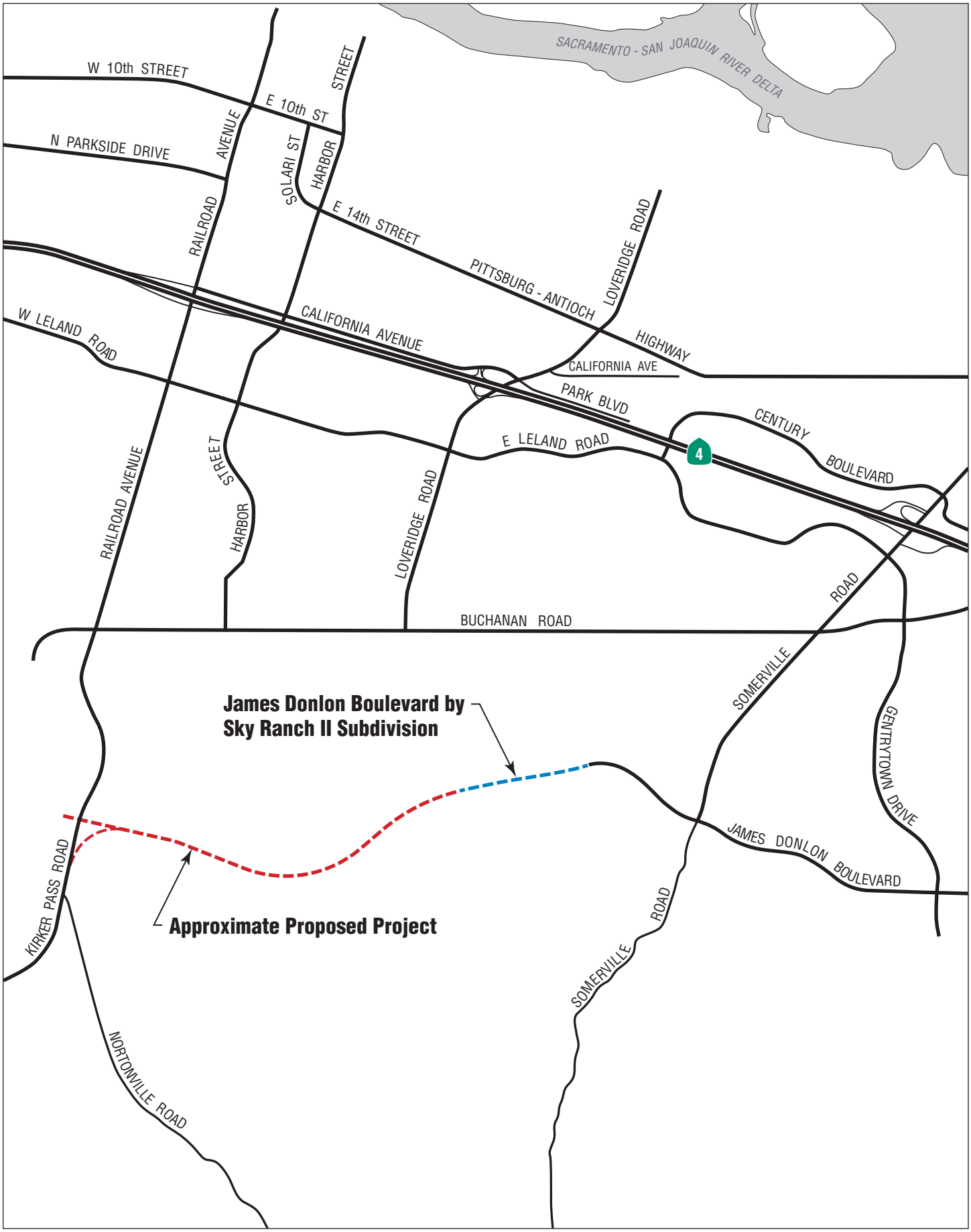
Figure 2-1



JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Project Location

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Figure 2-2

2.1 PROJECT SUMMARY

The proposed project would construct and operate the 1.71-mile James Donlon Boulevard extension from the western boundary of the approved Sky Ranch II Subdivision to Kirker Pass Road, and the improvements to Kirker Pass Road from Nortonville Road north to the City limit line (Figure 2-3, *Site Plan*). From Sky Ranch II, the proposed roadway would merge from a four-lane road to a two-lane road and would meet City and California Department of Transportation (Caltrans) standards and regulations for highway design for vehicles traveling up to 55 miles per hour (mph).

The intersection configuration at Kirker Pass Road would generally maintain the existing alignment of Kirker Pass Road and create a four-way, signalized, tee intersection with proposed Montreux Drive as the eastbound approach, proposed James Donlon Boulevard as the westbound approach and Kirker Pass Road as the northbound/southbound approaches (refer to Figure 3-7, Site Plan). The intersection would include the following design features:

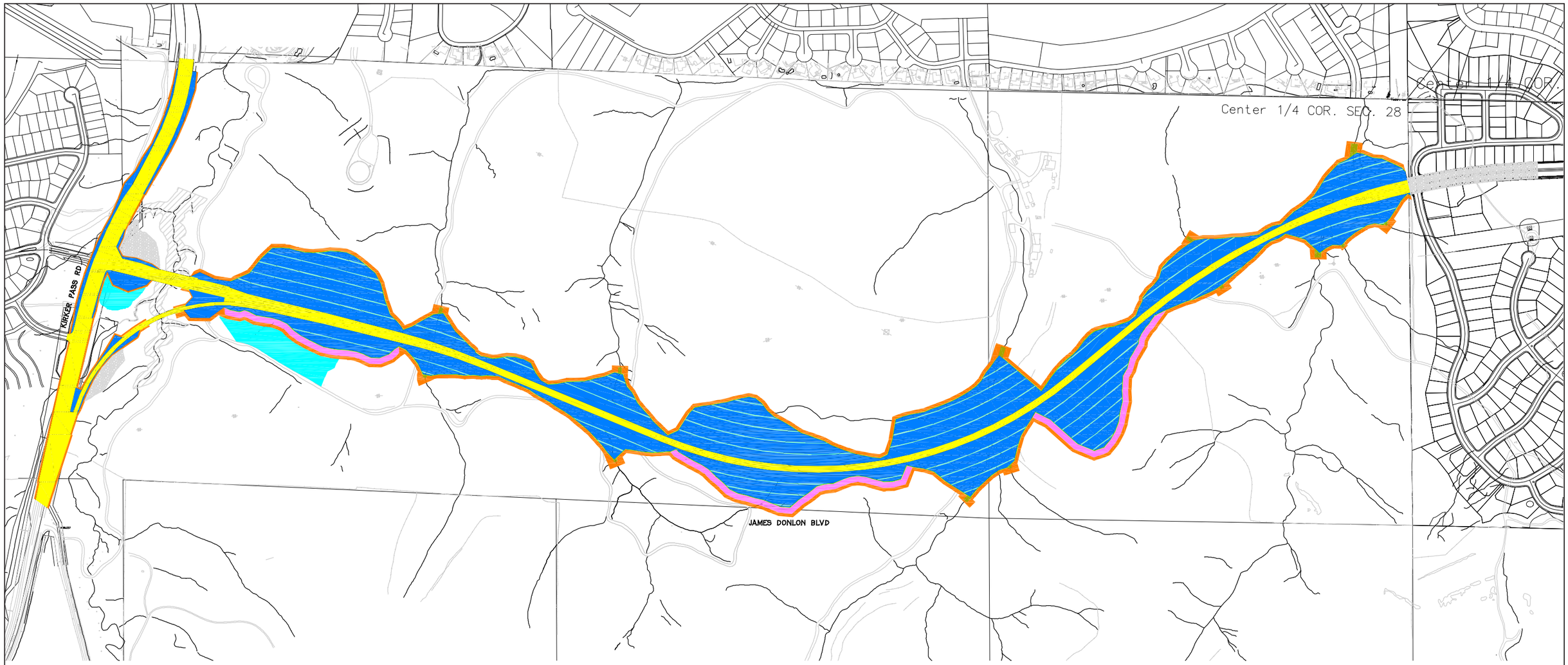
- Northbound Kirker Pass Road – One left-turn lane, two through lanes and one free right-turn lane not controlled by the signal with a design speed of 50 mph.
- Westbound James Donlon Boulevard – Two left-turn lanes, one through lane and one right-turn lane.
- Southbound Kirker Pass Road – One left-turn lane, two through lanes, and one right-turn lane.
- Eastbound Montreux Drive approach – One left-turn lane and one through lane, and one right-turn lane.

The four-lane portion of the James Donlon Boulevard at the Kirker Pass Road intersection would be designed to urban road standards with medians, curbs, gutters, sidewalks and streetlights. The two-lane portion of James Donlon Boulevard would be designed to rural road standards.

Kirker Pass Road from Nortonville Road to the City limits would be upgraded from rural road standards to urban road standards. The profile of Kirker Pass Road would be raised to provide acceptable grades at the intersection with James Donlon Boulevard.

The Draft EIR, once certified, will be used to satisfy CEQA requirements for the following discretionary approvals:

- Annexation approval of assessor parcel numbers (APNs) 089-050-056 and 089-020-011 to the City of Pittsburg by the Contra Costa County LAFCO;
- Annex Kirker Pass Road from Nortonville Road north to the City limit line (parcels affected by Kirker Pass Road improvements include APNs 089-050-055, 075-060-007, 089-020-009, 089-020-014, and 089-020-015) to the City of Pittsburg by the Contra Costa County LAFCO;
- Amendment to the City of Pittsburg General Plan land use designations to designate all subject properties Open Space (change the Hillside Low Density Residential portions of APNs 089-050-056 and 089-020-011 to Open Space);
- Pre-zone the sphere of influence (SOI) to designate all subject properties Open Space (OS) District with an option to add an Agricultural Preserve Overlay District (change the Hillside Planned Development (HPD) District pre-zone portion of APN 089-050-056 to pre-zone Open Space (OS) District with an option to provide an Agricultural Preserve Overlay District);
- California Fish and Game Code Section 1600 et seq. permits (Streambed Alteration Agreements);



LEGEND:

4' CONCRETE DITCH	74,212.05 SF (1.704 ACRES)	CONSTRUCTION EASEMENT	490,939.55 SF (11.270 ACRES)
6' CONCRETE DITCH	137,670.80 SF (3.160 ACRES)	GRADING	2,099,688.32 SF (48.202 ACRES)
RIP RAP	11,709.91 SF (0.269 ACRES)	BUTTRASSES	155,432.68 SF (3.568 ACRES)
ROADWAY IMPROVEMENT	771,912.20 SF (17.721 ACRES)	BORROW/STAGING AREA	132,382.79 SF (3.039 ACRES)
		STAGING AREA	141,273.89 SF (3.243 ACRES)
		NO CONSTRUCTION	

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2/26/13 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Site Plan

Figure 2-3

- Agreements/Permits/Authorizations pursuant to the California and Federal Endangered Species acts, if necessary;
- Section 404 of the Federal Clean Water Act (CWA) permits by the U.S. Army Corps of Engineers (USACE);
- Section 401 of the CWA and the Porter-Cologne Water Quality Control Act by the San Francisco Bay Regional Water Quality Control Board (RWQCB);
- San Francisco Bay RWQCB National Pollutant Discharge Elimination System (NPDES) Storm Water Permit;
- San Francisco Bay RWQCB Storm Water Pollution Prevention Plan (SWPPP);
- Grading Permits from the City of Pittsburg;
- Approval of the proposed Project Mitigation Monitoring and Reporting Program (MMRP);
- Approval of the CEQA Findings pursuant to State CEQA Guidelines Section 15091 and 15093; and
- Approval of a Statement of Overriding Considerations.

2.2 PROJECT SETTING

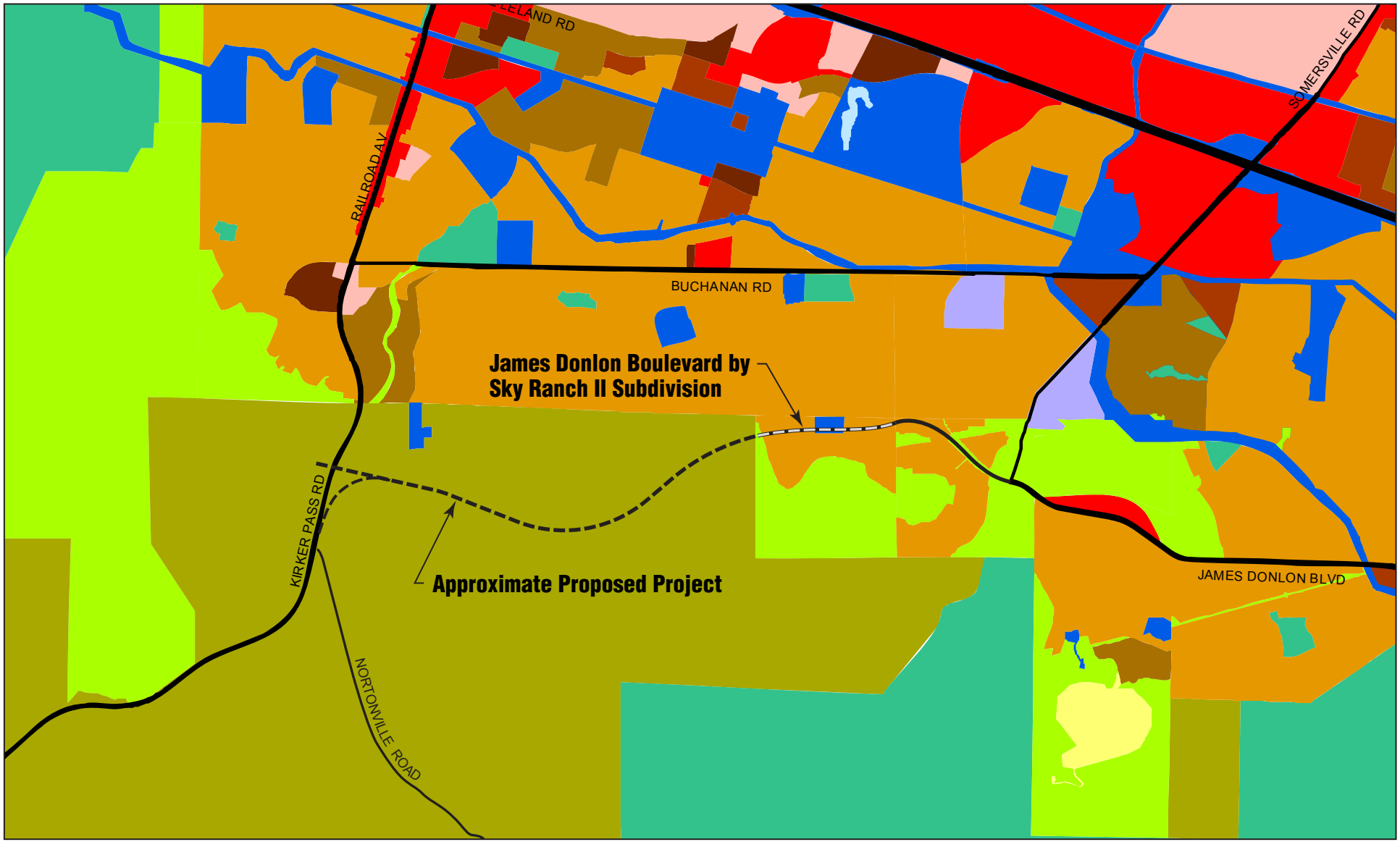
2.2.1 LOCAL AND REGIONAL SETTING

The proposed project would traverse property that is located in unincorporated Contra Costa County south of the City limit boundaries. The proposed project is located within the Urban Limit Line as identified in the County General Plan, which also identifies the project area as Urban Uses (unincorporated/City). The project area is within the City's Planning Area and SOI as established by the City.

The properties through which the proposed project would cross are located adjacent to existing and proposed residential neighborhoods to the north, west and east, and agricultural land to the south. Topography within the project area ranges from gentle slopes in the northern portions to steeper slopes in the western and southern portions of the area. Several perennial, intermittent and ephemeral streams occur in drainages throughout the project area. These streams flow in a south to north direction and eventually enter the City's storm drain system prior to discharging into Suisun Bay. The area has historically been used for horse and cattle grazing. Occupying a small portion of the largest property is an existing ranch and accessory buildings (e.g., barn and corrals). The existing ranch would be retained and cattle grazing would continue after implementation of the proposed project.

2.2.2 EXISTING GENERAL PLAN AND ZONING DESIGNATIONS

The County General Plan land use designations for the project vicinity are show in Figure 2-4, *Existing County Land Use Designations*, which include: AL (Agricultural Lands); OS (Open Space); SH (Single Family Residential – High); ML (Multiple Family Residential – Low); and PS (Public/Semi-Public). The City General Plan land use designations are depicted in Figure 2-5, *Existing City Land Use Designations*, and include: Utility/Right-of-Way; Hillside Low Density Residential; and Open Space. The properties are zoned A-4 (Agricultural Preserve) by the County. Measure P pre-zoned the subject parcels within the project area Open Space (OS) District, Hillside Planned Development (HPD) District, and Government and Quasigovernment District (GQ) District, as depicted in Figure 2-6, *Existing City Pre-Zoning*.



LEGEND

- SL (Single Family Residential - Low)
- SH (Single Family Residential - High)
- ML (Multiple Family Residential - Low)
- MM (Multiple Family Residential - Medium)
- MH (Multiple Family Residential - High)
- SBP (Business Park)
- LI (Light Industry)
- PS (Public/Semi-Public)
- WA (Water)
- PR (Parks and Recreation)
- OS (Open Space)
- AL (Agricultural Lands)

Source: Contra Costa County, General Plan Land Use Element, June 22, 2010.

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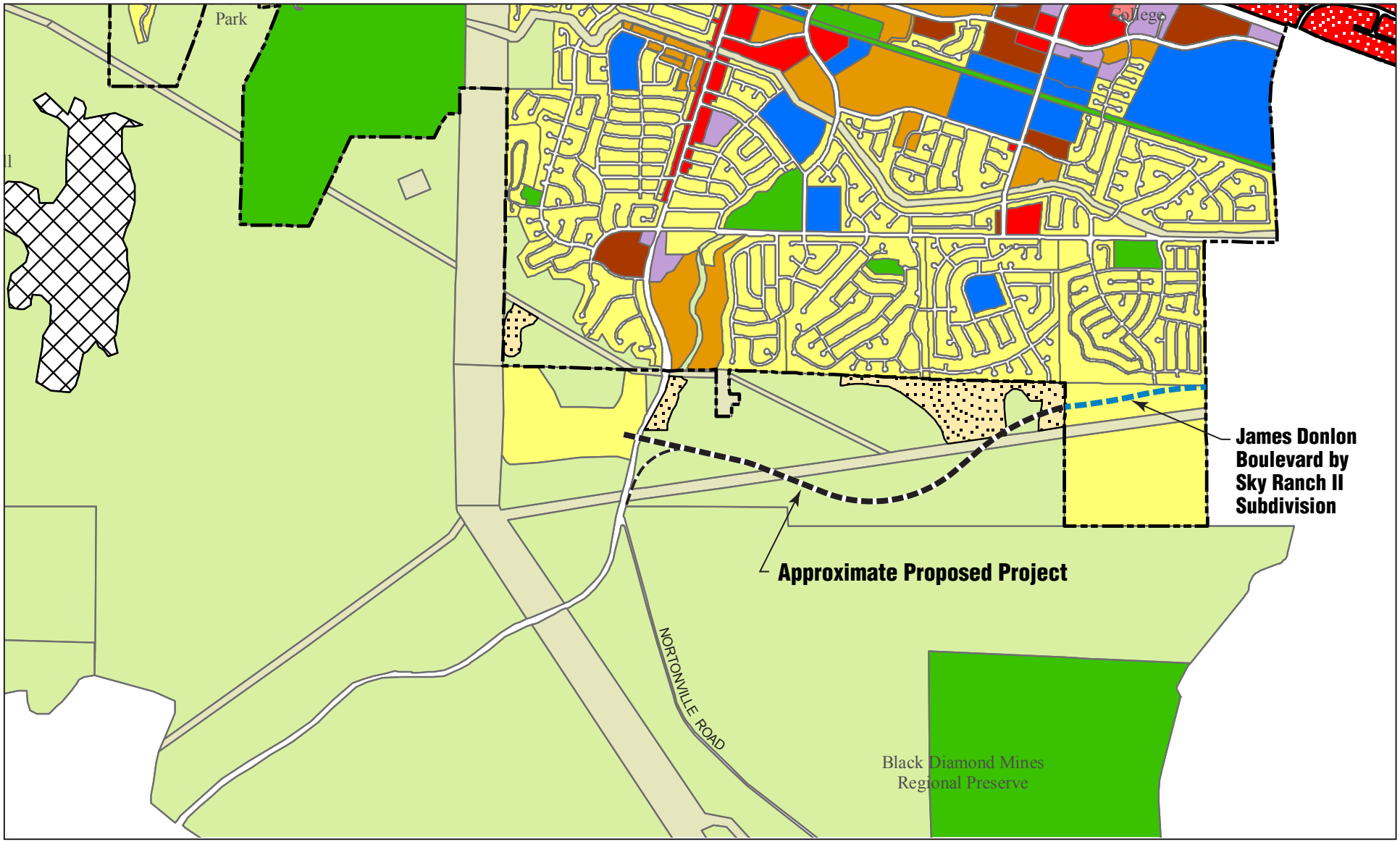
2/26/13 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Existing County Land Use Designations

Figure 2-4



LEGEND

- City Limits
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Hillside Low Density Residential
- Community Commercial
- Service Commercial
- Regional Commercial
- Business Commercial
- Public / Institutional
- Park
- Open Space
- Utility / ROW
- Landfill

Source: City of Pittsburg, General Plan, December 2011.

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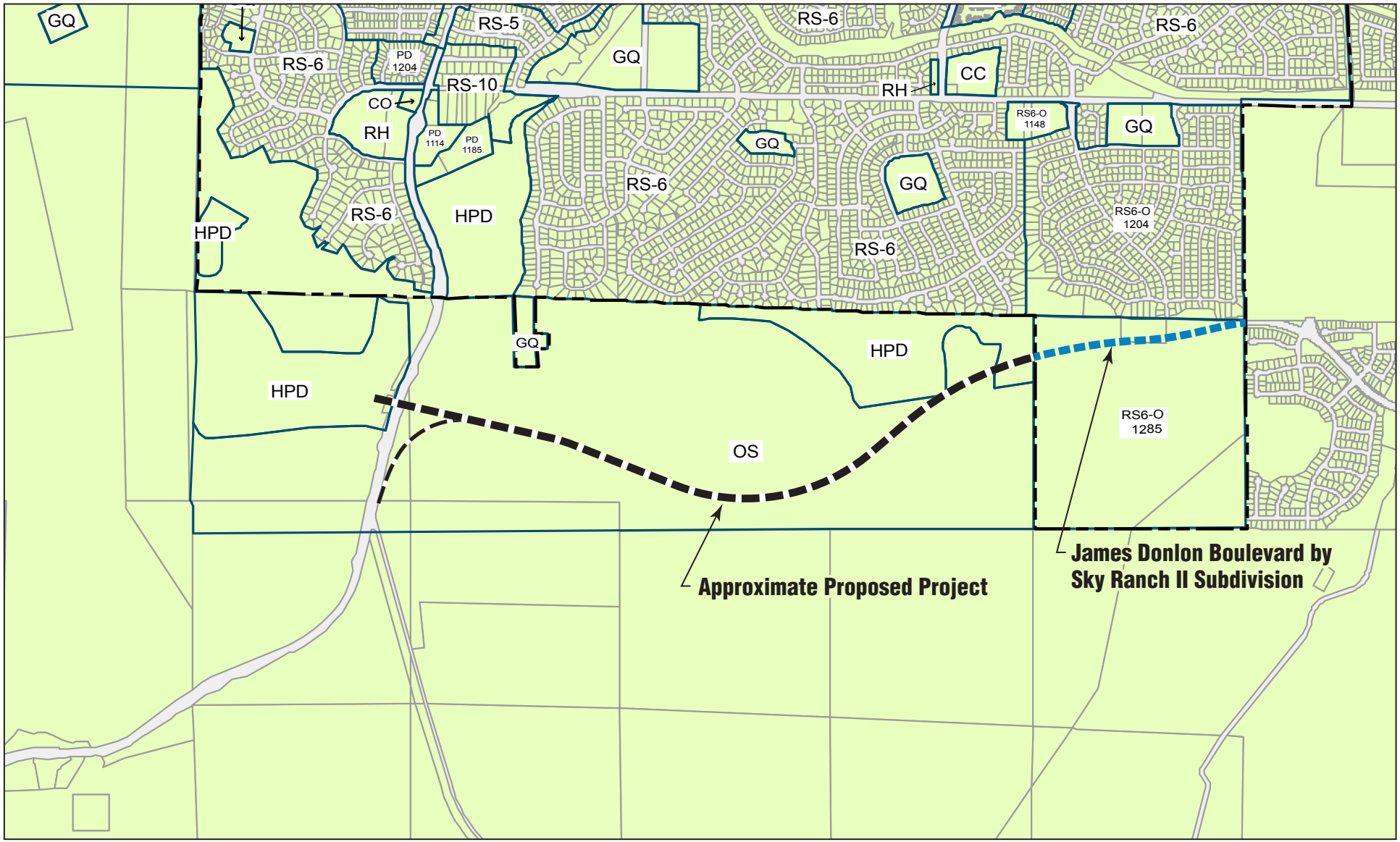
JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Existing City Land Use Designations

Figure 2-5



LEGEND

CO	Commercial Office
OS	Open Space District
HPD	Hillside Planned Development
RS-6	Residential (6,000 square foot minimum lot size)
RS6-O	Residential (6,000 square foot minimum lot size, Limited Overlay)
RS-10	Residential (10,000 square foot minimum lot size)
RH	High Density Residential District
GQ	Government and Quasigovernment District
PD	Planned Development

not to scale

Source: City of Pittsburg, Zoning Map, June 2011.

2/26/13 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Existing City Pre-Zoning

Figure 2-6

2.2.3 SURROUNDING LAND USES

Surrounding land uses are depicted in Figure 2-7, *Surrounding Land Uses*. Bordering the project area to the north are single-family residential homes. The approved Sky Ranch II Subdivision is located east of the project area. Property west of the project area, across Kirker Pass Road, is currently undeveloped; however, the City is currently processing an application to subdivide the approximately 148-acre site into 380 single-family residential lots (known as the proposed Montreux Subdivision). Property south of the project area is undeveloped agricultural land and open space.

2.3 PROJECT OBJECTIVES

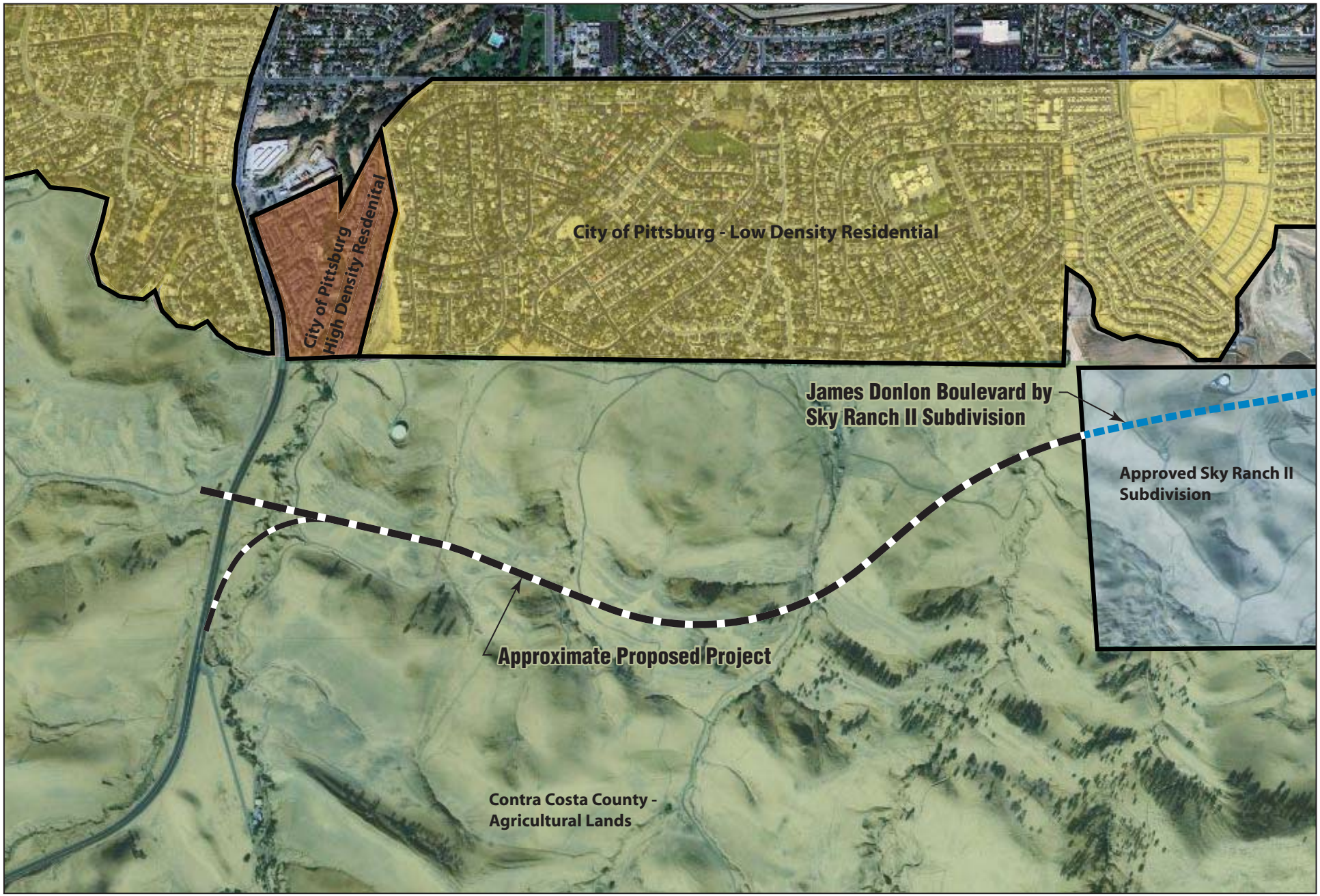
The proposed project has the following objectives:

- Construct a limited access arterial roadway between Kirker Pass Road and Somersville Road south of the existing City limits, to serve regional circulation needs
- Provide a secondary access route for existing, planned and future residential developments in southeastern Pittsburg and southwest Antioch
- Relieve traffic congestion on Buchanan Road, which receives a high volume of east-west commute traffic between Antioch and Concord
- Reduce traffic volumes adjacent to Buchanan Park, Highlands Elementary School, and residences that access Buchanan Road directly.
- Construct a roadway that would meet City, County and Caltrans design and safety standards
- Avoid sensitive wildlife and plant habitat
- Avoid severe landslide areas

2.4 ENVIRONMENTAL IMPACTS

Section 15128 of the State CEQA Guidelines requires that an EIR contain a statement briefly indicating the reasons that various, possible, new significant effects of a project were determined not to be significant, and were therefore not discussed in detail in the EIR. The City has engaged the public to participate in the scoping of the environmental document.

The contents of this Draft EIR were based on the Initial Study/Notice of Preparation (IS/NOP) prepared in accordance with the State CEQA Guidelines, as well as public and agency input that were received during the scoping process. The City received 12 letters during the 2007 IS/NOP circulation and 10 letters during the 2012 IS/NOP circulation with substantive comments regarding the proposed project, which are provided in Appendix A of this document. Based on the findings of the IS/NOP and the results of scoping, a determination was made that this EIR would have no significant impacts on mineral resources, public services, and recreation (refer to Chapter 1, *Introduction*, Section 1.6, *Effects Not Found to be Significant*). The EIR must contain a comprehensive analysis of all other environmental issues identified in Appendix G of the State CEQA Guidelines.



Source: USGS Aerial, 2006.

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JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Surrounding Land Uses

Figure 2-7

2.4.1 IMPACTS OF THE PROPOSED PROJECT

Chapter 4, *Existing Conditions, Environmental Impacts and Mitigation Measures*, Sections 4.2 through 4.14, provides a detailed discussion of the environmental setting, impacts associated with the proposed project, and mitigation measures designed to reduce significant impacts to less than significant levels, when feasible. The impacts, mitigation measures, and residual impacts for the proposed project are summarized in Tables 2-1, *Summary of Impacts – Beneficial*, Table 2-2, *Summary of Impacts – Less Than Significant*, Table 2-3, *Summary of Impacts – Less Than Significant With Incorporation of Mitigation Measures*, and Table 2-4, *Summary of Impacts – Significant and Unavoidable With Incorporation of Mitigation Measures*, at the end of this chapter, and are discussed further below.

BENEFICIAL IMPACTS

Potential environmental effects of the proposed project and mitigation measures are discussed in detail in Chapter 4, *Existing Conditions, Environmental Impacts and Mitigation Measures*, Sections 4.2 through 4.14, of this EIR. After full analysis, the following effects were determined to be beneficial:

Transportation/Traffic

- The proposed project would reduce the delay index to unacceptable levels on roadway segments within the study area
- The proposed project would conflict with adopted alternative transportation policies, plans, or programs

NO POTENTIAL FOR IMPACTS TO OCCUR

Potential environmental effects of the proposed project and mitigation measures are discussed in detail in Chapter 4, *Existing Conditions, Environmental Impacts and Mitigation Measures*, Sections 4.2 through 4.14, of this EIR. After full analysis, the following effects were determined to have no potential for impacts to occur:

Aesthetics

- Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway

Agriculture and Forestry Resources

- 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
- Conflict with existing zoning, for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))
- Result in the loss of forest land or conversion of forest land to non-forest use

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

- 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, result in a safety hazard for people residing or working in the project area
- For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area
- 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 Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map
- 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
- Inundation by seiche, tsunami, or mudflow

Noise

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels

Population and Housing

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

Transportation/Traffic

- The proposed project would result in inadequate emergency access
- The proposed project would conflict with adopted transportation policies, plans, or programs

Utilities and Service Systems

- 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 facilities, the construction of which could cause significant environmental effects
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to provide the project's projected demand in addition to the provider's existing commitments
- Comply with federal, state, and local statutes and regulations related to solid waste

LESS THAN SIGNIFICANT IMPACTS

Potential environmental effects of the proposed project and mitigation measures are discussed in detail in Chapter 4, *Existing Conditions, Environmental Impacts and Mitigation Measures*, Sections 4.2 through 4.14, of this EIR. After full analysis, the following effects were determined to be less and significant:

Agriculture and Forestry Resources

- The proposed project would not conflict with existing zoning for agricultural use, or Williamson Act Contract
- The proposed project would not involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use

Air Quality

- Significant short-term construction diesel particulate matter impacts would not occur during site preparation and project construction
- The proposed roadway alignment would not create objectionable odors affecting a substantial number of people
- Long-term mobile emissions would occur as a result of project emissions
- Regional air quality emissions resulting from the proposed roadway alignment would not Conflict with the local air quality management plan
- Implementation of the proposed project could generate greenhouse gas emissions that could have a significant impact on the environment and could conflict with an applicable greenhouse gas reduction plan, policy, or regulation

Biological Resources

- The proposed project could interfere substantially with the movement of native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites

Geology and Soils

- The proposed project could expose people or structures to potential substantial adverse effects 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 or based on substantial evidence of a known fault and strong seismic ground shaking

Hazards and Hazardous Materials

- The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

Hydrology and Water Quality

- The proposed project would not 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
- The proposed project would not otherwise substantially degrade water quality

Noise

- The proposed project could expose persons to or generate excessive groundborne vibration or groundborne noise levels
- Implementation of the proposed roadway alignment could permanently increase ambient noise levels in the project vicinity above levels existing without the roadway

Population and Housing

- The proposed project could indirectly induce population growth by expanding transportation capacity and potentially facilitating access to currently undeveloped areas

Transportation/Traffic

- The proposed project could result in a decline of the level of service to unacceptable levels at intersections within the study area
- The proposed project would substantially increase hazards or congestion due to a design feature (e.g., sharp curves) or incompatible uses (e.g., farm equipment)

Utilities and Service Systems

- The proposed project would not result in insufficient water supply
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs

LESS THAN SIGNIFICANT IMPACTS WITH INCORPORATION OF MITIGATION MEASURES

Potential environmental effects of the proposed project and mitigation measures are discussed in detail in Chapter 4, *Existing Conditions, Environmental Impacts and Mitigation Measures*, Sections 4.2 through 4.14, of this EIR. After full analysis, the following effects were determined to be less than significant with incorporation of mitigation measures:

Aesthetics

- During construction the visual qualities of the project area would be temporarily degraded
- The proposed project could have a substantial adverse effect on a scenic vista
- The proposed project could have an adverse affect on a scenic transportation corridor
- The proposed project could substantially degrade the existing visual character or quality of the project site and its surroundings
- The proposed project could create a new source of light and glare that would affect day and nighttime views in the area

Air Quality

- Construction of the proposed roadway alignment could result in the violation of an air quality standard or contribute substantially to an existing or projected air quality violation

Biological Resources

- The proposed project could potentially result in a substantial adverse effect on species identified as candidate, sensitive, or special-status species

- The proposed project could conflict with the Contra Costa County Tree Protection and Preservation Ordinance
- The proposed project could conflict with provisions of the HCP/NCCP

Cultural Resources

- Construction of the roadway alignment has the potential to cause an adverse change in the significance of a historical resource as defined in Section 15064.5
- Construction of the roadway alignment has the potential to cause an adverse change in the significance of an archaeological resource Pursuant to Section 15064.5
- Construction activities could disturb human remains, including those interred outside of formal cemeteries
- The proposed project has the potential to disturb or destroy unknown paleontological resources

Geology and Soils

- The project could result in substantial soil erosion or the loss of topsoil
- The proposed project could be located on a geological 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 landslides and subsidence
- Parts of the proposed project would be located on expansive soil, creating substantial risks to Life or property

Hazards and Hazardous Materials

- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment
- The proposed project could 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
- The proposed project could 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

Hydrology and Water Quality

- The proposed project could potentially violate water quality standards or waste discharge requirements
- The proposed project could potentially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream o river, in a manner which would result in substantial erosion or siltation on- or off-site
- The proposed project would alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site
- The proposed project could create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff"

Noise

- Construction noise could result in temporary impacts to nearby noise sensitive receptors

Utilities and Service Systems

- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

SIGNIFICANT AND UNAVOIDABLE IMPACTS

Potential environmental effects of the proposed project and mitigation measures are discussed in detail in Chapter 4, *Existing Conditions, Environmental Impacts and Mitigation Measures*, Sections 4.2 through 4.14, of this EIR. After full analysis, the following effects were determined to be significant and unavoidable:

Transportation/Traffic

- The proposed project would cause a significant impact at intersections in the study area under cumulative (2030) conditions
- The proposed project would cause a significant impact at roadway segments in the study area under cumulative (2030) conditions

2.4.2 SIGNIFICANT CUMULATIVE IMPACTS

According to Section 15355 of the State CEQA Guidelines, the term *cumulative impacts* "refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Individual effects that may contribute to a cumulative impact may be from a single project or a number of separate projects. Individually, the impacts of a project may be relatively minor, but when considered along with impacts of other closely related or nearby projects, including newly proposed project, the effects could be cumulatively considerable.

This EIR has considered the potential cumulative effects of the proposed project in Chapter 5, *Cumulative and Growth Inducing Impacts*. Cumulative impacts associated with transportation/traffic are cumulatively considerable and would result in significant and unavoidable impacts to the following issue areas (also listed above under Transportation/Traffic):

- The proposed project would cause a significant impact at intersections in the study area under cumulative (2030) conditions
- The proposed project would cause a significant impact at roadway segments in the study area under cumulative (2030) conditions

2.4.3 GROWTH INDUCEMENT

Section 5.3, *Growth-Inducing Impacts*, analyzes the proposed project's "growth-inducing" affects. In summary, the jobs generated by the proposed project would not foster economic growth within the City. The proposed project would provide an alternate east-west connection through Contra Costa County, to alleviate existing and projected traffic congestions; therefore, the proposed project would not result in direct or indirect population and housing growth. The proposed project would amend the pre-zone to Open Space (OS) District with the option of adding an Agricultural Preserve Overlay and would amend the City General Plan land use designations from Hillside Low Density Residential and Open Space to Open Space. The existing ranch would be retained and cattle grazing would continue. The proposed James Donlon Boulevard extension would only be accessed from Kirker Pass Road on the west and the

Sky Ranch II development, including Metcalf Street, Ventura Drive, and Somersville Road on the east. No access points would be provided to the existing cattle ranch property from the proposed project; therefore, the project would provide facilities through the agricultural land but not to the land. Thus, the proposed project would not directly or indirectly increase populations and would continue to provide obstacles to growth.

2.5 ALTERNATIVES

In accordance with State CEQA Guidelines Section 15126.6, the alternatives that would avoid or substantially lessen any of the significant effects of the proposed project and that would feasibly attain most of the basic proposed project objectives are analyzed in Chapter 6, *Alternatives*. The City has considered three alternatives, which are summarized below and discussed in more detail under Section 6.4, *Project Alternative*.

2.5.1 NO PROJECT ALTERNATIVE

Section 15126.6(e)(1) of the State CEQA Guidelines requires an EIR to analyze the No Project Alternative to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. Under the No Project Alternative, annexation of the properties into the city limits would not occur, no amendment would occur to the City General Plan, and the City's pre-zone designations would remain. The proposed project would not be constructed and the area would be built out according to the County General Plan. The project area would maintain the County land use designation of AL (Agricultural Land), and County zoning of A-4, Agricultural Preserve – 40-acre parcel minimum. Under the No Project Alternative, the existing land uses would remain, which include the working cattle ranch and open space.

This alternative would reduce impacts associated with the proposed project for all resource areas except land use and planning and transportation/traffic. The No Project Alternative would have greater impacts than the proposed project on land use and planning and transportation/traffic. Moreover, this alternative would not meet four of the six project objectives. This alternative would avoid sensitive wildlife and plant habitats and would avoid severe landslide areas.

2.5.2 ALTERNATIVE A – NORTHERN ALIGNMENT

Under this alternative, the roadway alignment would commence at the edge of the approved Sky Ranch II subdivision and extend to the northwest, running parallel to the existing residential neighborhood to the north, joining Kirker Pass Road with a conventional "T" signalized intersection; refer to Figure 6-3, *Approximate Northern Alignment Alternative*. In addition, Alternative A would utilize a clear span bridge to cross Kirker Creek. The length of Alternative A would be approximately 1.9 miles, slightly longer than the proposed project. Similar to the proposed project, Alternative A would merge from a four-lane road to a two-lane road until just before its intersection with Kirker Pass Road, where it would again expand to a four-lane road. The alternative's proposed roadway alignment would follow the natural topography of the land and meet City and California Department of Transportation (Caltrans) standards and regulations for highway design. All other design elements of Alternative A would generally mirror that of the proposed project including portions of the roadway being built to both highway and rural road standards. Similar to the proposed project, Alternative A would require annexation of approximately 475 acres to the City, annexing Kirker Pass Road from Nortonville Road north to the City limit line, amending the City General Plan to designate all subject properties Open Space, and pre-zone the sphere of influence (SOI) to designate all subject properties as Open Space (OS) District with an option to provide an Agricultural Preserve Overlay.

This alternative would not reduce impacts associated with the proposed project. Alternative A – Northern Alignment would have similar impacts regarding agricultural resources, biological resources, hazards and hazardous materials, hydrology and water quality, land use and planning, population and housing, utilities and service systems, and transportation/traffic as compared to the proposed project. Alternative A would have greater impacts regarding aesthetics, air quality, cultural resources, geology and soils, and noise as compared to the proposed project. This alternative would meet five of the six project objectives. Alternative A would not avoid severe landslide areas.

2.5.3 ALTERNATIVE B – WIDEN BUCHANAN ROAD

Alternative B would construct improvements to the existing Buchanan Road. The James Donlon Boulevard Extension would not be constructed under this alternative; no annexation, City General Plan amendment, or pre-zone would be required. Alternative B would widen Buchanan Road from three lanes (two through lanes and one two-way left turn lane) to four through lanes (two through lanes in each direction) with a raised median. Left-turn pockets within the raised median would be provided as necessary. Alternative B would widen Buchanan Road for approximately 2.9 miles, beginning at the Kirker Pass Road/Buchanan Road intersection and ending at the Somersville Road/Buchanan Road intersection. The widening of Buchanan Road would require the City to reconfigure a minimum of seven intersections along Buchanan Road, including the Kirker Pass Road and Somersville Road intersections. Alternative B would require right-of-way acquisition from properties adjacent to Buchanan Road, in order to accommodate this alternative's proposed improvements. Depending on the engineering design and constructability, full and partial property acquisitions could occur on residential (up to approximately 66 residential properties, including single and multi-family residences), park, school, commercial, and industrial lands. Alternative B would require the realignment of portions of Contra Costa Canal and other drainage courses, which parallels Buchanan Road at the east end of this alternative. Alternative B would include curb, gutters, streetlights, traffic signals and pedestrian crossings similar to existing conditions. Alternative B would also include signal timing during AM and PM traffic peak traffic hours.

As stated above, Alternative B would result in right-of-way acquisition to park and school lands. This would result in impacts that do not currently exist under the proposed project, No Project Alternative, or Alternative A. These impacts would require additional analysis regarding recreation and public services as related to schools. In addition, because right-of-way would be acquired for a transportation project from park lands, a Section 4(f) evaluation would be required for Alternative B.

Alternative B would reduce impacts associated with the proposed project for agricultural resources, biological resources, cultural resources, geology and soils, and hydrology and water quality. Alternative B would have greater impacts than the proposed project on aesthetics, air quality, hazards and hazardous materials, land use and planning, noise, population and housing, utilities and service systems, and transportation/traffic. This alternative would meet four of the six project objectives. This alternative would not construct a limited access arterial roadway south of the existing City limits nor would Alternative B provide a secondary access route between southeastern Pittsburg and southwestern Antioch.

2.5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires an EIR to identify the environmentally superior alternative. The environmentally superior alternative is the one that would result in the fewest or least significant environmental impacts. The No Project Alterative would be the environmentally superior alternative because it would eliminate most of the potentially significant impacts of the proposed project. However, while the No Project Alternative is the environmentally superior alternative, it is not capable of meeting most of the basic objectives of the project. Section 15126.6(e)(2) of the State CEQA Guidelines Section 15126.6 states that if the no project alternative is found to be environmentally superior, "the EIR shall also identify an environmentally superior alternative among the other alternatives. Due to the slight reduction of impacts to biological

resources, and the similar impacts to the majority of the remaining resources, Alternative A, Northern Alignment, is considered the environmentally superior alternative.

Alternative A would construct the proposed James Donlon Boulevard Extension to the north of the proposed project. This alternative would slightly reduce impacts to biological resources and would increase impacts to aesthetics, cultural resources, geology and soils, noise, and transportation and traffic. Impacts would be similar to the proposed project for all remaining resources.

2.6 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the State CEQA Guidelines requires that an EIR contain issues to be resolved, which includes the choices among alternatives and whether or how to mitigate significant impacts. The major issues to be resolved regarding the project include decisions by the lead agency as to whether or not:

- The Draft EIR adequately describes the environmental impacts of the project;
- The recommended mitigation measures should be adopted or modified; or
- Additional mitigation measures need to be applied.

2.7 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION

The following is a summary of the environmental impacts of the proposed project, mitigation measures, and level of significance before and after mitigation identified and analyzed in Chapter 4, *Existing Conditions, Environmental Impacts and Mitigation Measures*, Sections 4.2 through 4.14, of this EIR. Refer to the appropriate EIR section for additional information.

Table 2-1
Summary of Impacts – Beneficial

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Transportation/Traffic			
THE PROPOSED PROJECT WOULD REDUCE THE DELAY INDEX TO UNACCEPTABLE LEVELS ON ROADWAY SEGMENETS WITHIN THE STUDY AREA	Less than Significant	No additional mitigation measures are required.	Beneficial Impact
THE PROPOSED PROJECT WOULD CONFLICT WITH ADOPTED ALTERNATIVE TRANSPORTATION POLICIES, PLANS, OR PROGRAMS	Less than Significant	No additional mitigation measures are required.	Beneficial Impact

Table 2-2
Summary of Impacts - Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Land Use			
THE PROPOSED PROJECT WOULD CONFLICT WITH AN 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.	Less than Significant	No additional mitigation measures are required.	Less than Significant
Agriculture and Forestry Resources			
THE PROPOSED PROJECT WOULD NOT CONFLICT WITH EXISTING ZONING FOR AGRICULTURAL USE, OR WILLIAMSON ACT CONTRACT	Less than Significant	No additional mitigation measures are required.	Less than Significant
THE PROPOSED PROJECT WOULD NOT INVOLVE OTHER CHANGES IN THE EXISTING ENVIRONMENT, WHICH, DUE TO THEIR LOCATION OR NATURE, COULD RESULT IN CONVERSION OF FARMLAND, TO NON-AGRICULTURAL USE OR CONVERSION OF FOREST LAND TO NON-FOREST USE	Less than Significant	No additional mitigation measures are required.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Air Quality/Greenhouse Gas Emissions			
SIGNIFICANT SHORT-TERM CONSTRUCTION DIESEL PARTICULATE MATTER IMPACTS WOULD NOT OCCUR DURING SITE PREPARATION AND PROJECT CONSTRUCTION	Less than Significant	No additional mitigation measures are required.	Less than Significant
THE PROPOSED ROADWAY ALIGNMENT WOULD NOT CREATE OBJECTIONABLE ODORS AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE	Less than Significant	No additional mitigation measures are required.	Less than Significant
LONG-TERM MOBILE EMISSIONS WOULD OCCUR AS A RESULT OF PROJECT EMISSIONS	Less than Significant	No additional mitigation measures are required.	Less than Significant
REGIONAL AIR QUALITY EMISSIONS RESULTING FROM THE PROPOSED ROADWAY ALIGNMENT WOULD NOT CONFLICT WITH THE LOCAL AIR QUALITY MANAGEMENT PLAN	Less than Significant	No additional mitigation measures are required.	Less than Significant
IMPLEMENTATION OF THE PROPOSED PROJECT COULD GENERATE GREENHOUSE GAS EMISSIONS THAT COULD HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT AND COULD CONFLICT WITH AN APPLICABLE GREENHOUSE GAS REDUCTION PLAN, POLICY, OR REGULATION	Less than Significant	No additional mitigation measures are required.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Biological Resources			
THE PROPOSED PROJECT COULD INTERFERE SUBSTANTIALLY WITH THE MOVEMENT OF NATIVE RESIDENT OR MIGRATORY WILDLIFE SPECIES OR WITH ESTABLISHED NATIVE RESIDENT OR MIGRATORY WILDLIFE CORRIDORS, OR IMPEDE THE USE OF NATIVE WILDLIFE NURSERY SITES	Less than Significant	No additional mitigation measures are required.	Less than Significant
Geology and Soils			
THE PROPOSED PROJECT COULD EXPOSE PEOPLE OR STRUCTURES TO POTENTIAL SUBSTANTIAL ADVERSE EFFECTS 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 OR BASED ON SUBSTANTIAL EVIDENCE OF A KNOWN FAULT AND STRONG SEISMIC GROUND SHAKING	Less than Significant	No additional mitigation measures are required.	Less than Significant
Hazards and Hazardous Materials			
THE PROPOSED PROJECT WOULD NOT CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIALS	Less than Significant	No additional mitigation measures are required.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Hydrology and Water Quality			
THE PROPOSED PROJECT WOULD NOT 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	Less than Significant	No additional mitigation measures are required.	Less than Significant
THE PROPOSED PROJECT WOULD NOT OTHERWISE SUBSTANTIALLY DEGRADE WATER QUALITY	Less than Significant	No additional mitigation measures are required.	Less than Significant
Noise			
THE PROPOSED PROJECT COULD EXPOSE PERSONS TO OR GENERATE EXCESSIVE GROUNDBORNE VIBRATION OR GROUNDBORNE NOISE LEVELS	Less than Significant	No additional mitigation measures are required.	Less than Significant
IMPLEMENTATION OF THE PROPOSED ROADWAY ALIGNMENT COULD PERMANENTLY INCREASE AMBIENT NOISE LEVELS IN THE PROJECT VICINITY ABOVE LEVELS EXISTING WITHOUT THE ROADWAY	Less than Significant	No additional mitigation measures are required.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Population and Housing			
THE PROPOSED PROJECT COULD INDIRECTLY INDUCE POPULATION GROWTH BY EXPANDING TRANSPORTATION CAPACITY AND POTENTIALLY FACILITATING ACCESS TO CURRENTLY UNDEVELOPED AREAS.	Less than Significant	No additional mitigation measures are required.	Less than Significant
Transportation/Traffic			
THE PROPOSED PROJECT COULD RESULT IN A DECLINE OF THE LEVEL OF SERVICE TO UNACCEPTABLE LEVELS AT INTERSECTIONS WITHIN THE STUDY AREA	Less than Significant	No additional mitigation measures are required.	Less than Significant
THE PROPOSED PRPOJECT WOULD SUBSTANTIALLY INCREASE HAZARDS OR CONGESTION DUE TO A DESIGN FEATURE (E.G., SHARP CURVES) OR INCOMPATIBLE USES (E.G., FARM EQUIPMENT)	Less than Significant	No additional mitigation measures are required.	Less than Significant
Utilities and Service Systems			
THE PROPOSED PROJECT WOULD NOT RESULT IN INSUFFICIENT WATER SUPPLY	Less than Significant	No additional mitigation measures are required.	Less than Significant
BE SERVED BY A LANDFILL WITH SUFFICIENT PERMITTED CAPACITY TO ACCOMMODATE THE PROJECT'S SOLID WASTE DISPOSAL NEEDS	Less than Significant	No additional mitigation measures are required.	Less than Significant

Table 2-3
Summary of Impacts – Less Than Significant With Incorporation of Mitigation Measures

Impact	Level of Significance before Mitigation	Mitigation Measure(s)		Level of Significance after Mitigation
Aesthetics				
DURING CONSTRUCTION THE VISUAL QUALITIES OF THE PROJECT AREA WOULD BE TEMPORARILY DEGRADED	Potentially Significant	AES1	Construction equipment staging areas shall use appropriate screening (e.g., temporary fencing with opaque material) to buffer views of construction equipment and material. Staging locations shall be indicated on final plans, and grading plans shall be subject to review and approval of the City of Pittsburg. Compliance with this measure is subject to periodic field inspection by City staff.	Less than Significant
THE PROPOSED PROJECT COULD HAVE A SUBSTANTIAL ADVERSE EFFECT ON A SCENIC VISTA	Potentially Significant	AES2	A comprehensive landscape plan shall be prepared and approved concurrent with the final roadway implementation plans. Landscaping design shall be subject to approval by the City of Pittsburg Development Services Department prior to the issuance of grading or building permits. Design elements of the landscape plan shall include, but not be limited to the following (where feasible): • Erosion control shall be applied to all disturbed slopes. • Slopes shall be restored with hydroseeding using native, non-invasive vegetation. • Where possible, topsoil shall be saved, stockpiled and reapplied on disturbed slopes to reduce the newly-constructed look and to promote natural revegetation. • In order to reduce the artificial appearance of engineered slopes, cut-and-fill slopes shall be blended within existing contours, with horizontal variation, and shall be finished with a rough appearance where possible to create an aged look. • Existing rock outcroppings shall be retained where possible. • All mature removed trees shall be replaced using a planting ratio and maintenance program which shall ensure plant establishment and long-term success. • Trees shall be planted or relocated in irregular locations to achieve a natural appearance along the roadway, at a density similar to the trees that would be removed. • Natural creeks and drainage courses shall be preserved as close as possible to their natural location and appearance. Soft surface alternatives to concrete ditches and rock slope protection shall be utilized wherever possible.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		Installed landscaping shall be subject to review and approval by the City of Pittsburg Development Services Department prior to final sign-off of construction of the roadway and associated improvements. The City shall be responsible for maintenance of the landscaping until it is established (anticipated to be approximately five years).	
THE PROPOSED PROJECT COULD HAVE AN ADVERSE EFFECT ON A SCENIC TRANSPORTATION CORRIDOR.	Potentially Significant	Implement Mitigation Measure AES2.	Less than Significant
THE PROPOSED PROJECT COULD SUBSTANTIALLY DEGRADE THE EXISTING VISUAL CHARACTER OR QUALITY OF THE PROJECT SITE AND ITS SURROUNDINGS	Potentially Significant	Implement Mitigation Measure AES2.	Less than Significant
THE PROPOSED PROJECT COULD CREATE A NEW SOURCE OF LIGHT AND GLARE THAT WOULD AFFECT DAY AND NIGHTTIME VIEWS IN THE AREA	Potentially Significant	AES3 All street lighting shall utilize directional lighting techniques and low wattage bulbs that direct light downwards and minimize light spillover, without compromising safety or security. Lighting fixtures shall use shielding, if necessary to prevent spill lighting on adjacent off-site uses.	Less than Significant
Air Quality/Greenhouse Gas Emissions			
CONSTRUCTION OF THE PROPOSED ROADWAY ALIGNMENT COULD RESULT IN THE VIOLATION OF AN AIR QUALITY STANDARD OR CONTRIBUTE SUBSTANTIALLY TO AN EXISTING OR PROJECTED AIR QUALITY VIOLATION	Potentially Significant	AQ1 Prior to issuance of any Grading Permit, the City of Pittsburg Development Services Department shall confirm that the Grading Plans and specifications stipulate that the following basic construction mitigation measures shall be implemented: • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		• Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • A publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints shall be posted. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations. AQ2 Prior to issuance of any Grading Permit, the City of Pittsburg Development Services Department shall confirm that the Grading Plan, Building Plans, and specifications stipulate that the following additional construction mitigation measures shall be implemented for all construction projects: • All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe. • All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph. • Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity. • Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. • The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.	

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		• All trucks and equipment, including their tires, shall be washed off prior to leaving the site. • Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel. • Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent. • Minimizing the idling time of diesel powered construction equipment to two minutes. • The proposed project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOX reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. • Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings). • Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM. • Requiring all contractors use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines. AQ3 Prior to issuance of any Grading Permit, the City of Pittsburg Development Services Department shall confirm that the Grading Plan, Building Plans, and specifications stipulate that off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emissions standards. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.	

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Biological Resources			
THE PROPOSED PROJECT COULD POTENTIALLY RESULT IN A SUBSTANTIAL ADVERSE EFFECT ON SPECIES IDENTIFIED AS CANDIDATE, SENSITIVE, OR SPECIAL-STATUS SPECIES	Potentially Significant	BIO1 Prior to the issuance of grading or building permits, compliance with the landscape and species-level measures for covered and no-take plants, provided in Sections 6.4.1 and 6.4.3 of the East Contra Costa County Habitat Conservation Plan / Natural Community Conservation Plan (HCP/NCCP), as well as non-listed special status species, shall occur as follows: • Planning surveys of suitable land cover types shall be conducted using approved California Department of Fish and Wildlife (CDFW) / U.S. Fish and Wildlife Service (USFWS) methods and during the appropriate seasons to identify HCP/NCCP covered and no-take plants. • All impacts to HCP/NCCP no-take plants shall be avoided. Surveys shall demonstrate that no-take plant species are absent from the project site; that the project will not result in indirect impacts on no-take plants if they occur in adjacent areas; and that, if no-take plant species occur on the project site, the project will avoid all direct and indirect impacts on these species. • Impacts to HCP/NCCP covered species shall be avoided to the extent practicable. Where impacts on covered perennial plant species cannot be avoided, the East Contra Costa County Habitat Conservancy (Conservancy) may salvage the covered plants. Salvage methods shall be conducted as appropriate for each species, using techniques described in the HCP/NCCP. • For annual covered plants, mature seeds shall be collected from all individuals for which impacts cannot be avoided. Collection and storage shall be conducted per the methods described in the HCP/NCCP. • All salvage operations of covered plant species shall be conducted by the Conservancy. The Conservancy shall conduct investigations to determine the efficacy of salvaging seeds from the soil seed bank for covered species. • New populations shall be transplanted as separate populations, such that they do not become part of an existing population of a species. Sites shall be selected based on physical, biological, and logistical considerations (i.e., species' historic range, soil types, soil moisture, topography, hydrology). BIO2 Compliance with HCP/NCCP species-level measures for covered branchiopods, provided in Section 6.4.3 of the HCP/NCCP and modified to apply to the rock outcrop habitat in the	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		project area, are as follows: *Pre-construction Surveys* - Prior to any ground disturbance, a USFWS/CDFW approved biologist shall conduct a pre-construction survey of the areas of rock outcrop where suitable habitat for covered shrimp identified during planning surveys occurs. The surveys shall establish the presence or absence of covered shrimp and/or habitat features and evaluate use by listed shrimp in accordance with modified USFWS survey guidelines. The approved biologist shall conduct USFWS protocol-level surveys in one year to determine presence or absence of covered shrimp species. If covered shrimp are absent from the project site, no further mitigation is required. If covered shrimp are present, the following measures would be implemented. *Avoidance and Minimization* – To the maximum extent practicable, impacts to occupied habitat of covered shrimp shall be avoided by implementing the following measures: o If suitable habitat for covered shrimp would be retained on-site, a buffer (described below) shall be established from the outer edge of the pools occupied by covered shrimp. Alternatively, at the request of the project proponent, representatives of the Conservancy and USFWS shall conduct site visits to inspect the particular characteristics of specific project sites and shall approve reductions of the buffer. Buffer reductions shall be approved for all portions of the project site whenever reduced setbacks would maintain the hydrology of the pool and achieve habitat values the same as, or greater than, would be achieved by the original buffer. o Activities inconsistent with the maintenance of pools within the buffers and disturbance of the on-site watershed shall be prohibited. Examples of inconsistent activities include altering topography, dumping, burning, and the placement of fill materials. o Filling of pools, if unavoidable, shall be delayed until pools are dry and samples from the top four inches of wetland soils are collected (if such soils are present in the rock outcrop pools). Soil collection shall be sufficient to include a representative sample of plant and animal present in the wetland by incorporating seeds, cysts, eggs, spores and similar inocula. The amount of soil and the number and size of samples shall be determined by a USFWS approved biologist. o Pools occupied by covered shrimp (other than longhorn fairy shrimp, addressed in BIO3) that are filled shall be offset by preserving or acquiring seasonal wetlands occupied by the covered shrimp species and restoring habitat suitable for the covered shrimp species in accordance with HCP/NCCP Conservation Measure 3.8.	

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		Construction Monitoring - If suitable habitat for shrimp would be retained on-site, the project proponent shall establish a buffer from the outer edge of all occupied pools occupied by covered shrimp. This buffer zone shall be determined in the field by the biologists as the immediate watershed feeding the pool or a minimum of 50 feet, whichever is greater. Buffers shall be marked by brightly colored fencing or flagging throughout construction. Construction activities within the buffer zone shall be prohibited. Construction personnel shall be trained to avoid affecting shrimp. A qualified biologist approved by USFWS shall inform all construction personnel about the life history of covered shrimp, the importance of avoiding their habitat, and the terms and conditions of the HCP/NCCP related to avoiding and minimizing impacts to covered shrimp.	
		BIO3 Compensatory mitigation for the loss of occupied pools in rock outcrops within the project site through the preservation and creation of suitable habitat in accordance with the ratios and requirements provided in Conservation Measure 3.8 of the HCP/NCCP. If the pools in the rock outcrops are occupied by covered shrimp, the project proponent shall first determine if the Conservancy has preserved 2 acres of occupied habitat for the same shrimp species for every acre impacted, and restored 1 acre of suitable habitat for the shrimp species for every acre impacted, and the restored habitat is occupied. If the Conservancy has not accomplished these tasks, then the project proponent shall compensate for impacts to these pools through 2 acres of preservation and 1 acre of creation of occupied habitat (or purchase of an equivalent amount of preservation credits in a USFWS-approved mitigation bank) for each acre of pools affected. If longhorn fairy shrimp are detected in pools in the project area, direct impacts (e.g., filling or draining) or indirect impacts (e.g., modification of hydrology supporting those pools) shall be avoided to the extent practicable. The HCP/NCCP did not anticipate impacts to the longhorn fairy shrimp from covered development activities, and thus the Conservancy is not planning any habitat acquisition or creation to benefit this species. Thus, if the longhorn fairy shrimp will be impacted by the proposed project, the project proponent shall perform project-specific mitigation for this species via preservation of existing pools and/or by creating pools elsewhere, inoculating those pools with cysts from the impacted pools, and preserving and managing the lands on which those pools occur in perpetuity. The project proponent shall attempt to locate longhorn fairy shrimp occurrences on lands that are not currently protected and acquire and preserve those lands at a 2:1 (mitigation:impact) ratio, in addition to creating new habitat at a 1:1 ratio. Due to the rarity	

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		of this species, it is possible that the project proponent may be unable to find existing occurrences of the longhorn fairy shrimp that can be preserved. In this case, mitigation shall occur via creation of pools at a 3:1 ratio. If compensatory mitigation for unavoidable impacts to longhorn fairy shrimp is necessary, the project proponent shall prepare a Habitat Mitigation and Monitoring Plan (HMMP) for the creation, inoculation, preservation, and management of the created pools and submit it to the Habitat Conservancy and USFWS for review and approval. Impacts to the occupied pools shall not commence until the Conservancy and USFWS approves the HMMP. The HMMP shall be prepared by qualified restoration ecologists in consultation with a longhorn fairy shrimp expert and will provide, at a minimum, the following items: a. A summary of impacts and the proposed mitigation site/species management b. A description of the location and boundaries of the mitigation site/management area and description of existing site conditions c. A description of measures to be undertaken to create pools for the longhorn fairy shrimp enhance d. A description of measures to salvage cysts of the longhorn fairy shrimp from occupied pools and use them to inoculate the created pools e. Proposed management activities to maintain high-quality habitat conditions for the longhorn fairy shrimp f. A description of species monitoring measures on the mitigation site, including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. g. A description of the management plan's adaptive component, including potential contingency measures for mitigation elements that do not meet performance criteria h. A description of the preservation mechanism (e.g., a conservation easement) and the funding mechanism to ensure the long-term maintenance and monitoring of the mitigation lands BIO4 Compliance with HCP/NCCP species-level measures to avoid and minimize impacts to golden eagle include: *Pre-construction Surveys* - Prior to implementation of any construction activities, a qualified biologist shall conduct a pre-construction survey to establish whether nests of golden eagles are occupied (HCP/NCCP Section 6.3.1, Planning Surveys). If nests are occupied,	

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		the avoidance and minimization measure and construction monitoring measures shall be implemented as outlined below. *Avoidance and Minimization* - Covered activities shall be prohibited within 0.5 miles of active nests. Nests can be built and active at almost any time of the year, although mating and egg incubation occurs late January through August, with peak activity in March through July. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be appropriate or that a larger buffer could be implemented, the Implementing Entity shall coordinate with CDFW/USFWS to determine the appropriate buffer size. *Construction Monitoring* - Construction monitoring shall focus on ensuring that no covered activities occur within the buffer zone established around an active nest. Although no known golden eagle nest sites occur within or near the project site, covered activities inside and outside of the Preserve System have the potential to disturb golden eagle nest sites. Construction monitoring shall ensure that direct effects to golden eagles are minimized. BIO5 Prior to the issuance of grading or building permits, compliance with the HCP/NCCP species-level measures to avoid and minimize impacts to San Joaquin kit foxes shall be implemented and include: *Pre-construction Surveys* - Prior to any ground disturbance, a USFWS/CDFW-approved biologist shall conduct a pre-construction survey in areas identified in the project's planning survey as supporting breeding or denning habitat for San Joaquin kit foxes. The surveys shall establish the presence or absence of San Joaquin kit foxes and/or suitable dens and evaluate use by San Joaquin kit foxes in accordance with USFWS survey guidelines. Pre-construction surveys shall be conducted within 30 days of ground disturbance. The biologist shall survey the proposed disturbance footprint and a 250-foot radius from the perimeter of the proposed project footprint to identify San Joaquin kit foxes and/or suitable dens. The status of all identified dens shall be determined and mapped. Written results of preconstruction surveys shall be submitted to USFWS within five (5) working days after survey completion. *Avoidance and Minimization* - If San Joaquin kit foxes and/or suitable dens are identified, the measures described below shall be implemented: o The den shall be monitored for three days by a USFWS/CDFW approved biologist using a tracking medium or an infrared beam camera to determine if the den is	

Impact	Level of Significance before Mitigation	Mitigation Measure(s)		Level of Significance after Mitigation
			currently being used. o Unoccupied dens shall be destroyed immediately to prevent subsequent use. o If a natal or pupping den is identified, the USFWS and CDFW shall be notified immediately. The den shall not be destroyed until the pups and adults have vacated and then only after further consultation with the USFWS and CDFW. If San Joaquin kit fox activity is observed at the den during the initial monitoring period, the den shall be monitored for an additional five (5) consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is determined to be unoccupied it may be excavated under the direction of the biologist. Alternatively, if the animal is still present after five (5) or more consecutive days of plugging and monitoring, the den shall be excavated when, in the judgment of a biologist, it is temporarily vacant.	
THE PROPOSED PROJECT COULD RESULT IN A SUBSTANTIAL ADVERSE EFFECT ON FEDERALLY PROTECTED WETLANDS AS DEFINED BY SECTION 404 OF THE CLEAN WATER ACT OR HABITAT PROTECTED BY THE CALIFORNIA FISH AND GAME CODE 1600 (INCLUDING STREAMS AND ASSOCIATED RIPARIAN HABITAT), THROUGH DIRECT REMOVAL, FILLING, AND HYDROLOGICAL INTERRUPTION	Potentially Significant	BIO6	Prior to the issuance of grading or building permits for the proposed project, the project proponent shall submit to the City of Pittsburg Development Services Department evidence of all required water quality permits before engaging in soil-disturbing construction activities, before entering flowing or ponded water, and before constructing crossing(s) at flowing or ponded water. Such permits may include, but are not limited to, a Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW), a Clean Water Act Section 402 National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activities, and/or a Waste Discharge Requirement from the San Francisco Bay Regional Water Quality Control Board. Additionally, after review and approval of all required water quality permits, the project proponent shall maintain and make available on-site at all times an approved copy of all required permits.	Less than Significant
THE PROPOSED PROJECT COULD CONFLICT WITH THE CONTRA COSTA COUNTY TREE PROTECTION AND PRESERVATION ORDINANCE	Potentially Significant	BIO7	Prior to the issuance of any building or grading permit, the project proponent shall submit a tree permit application pursuant to Article 816-6 of the County's Municipal Code. Compliance with this article shall result in the replacement or mitigation of any protected tree affected by the proposed project. The County shall specify the exact tree replacement ratio upon review of the tree permit application. Written proof of the tree removal permit shall be provided to the City of Pittsburg Development Services Department prior to issuance of any building or grading permit.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		BIO8 Prior to issuance of any grading or building permit, the project proponent shall install protective measures for all trees to remain within the construction easement or whose dripline falls within one (1) foot of the project site. Protective measures shall be shown on the grading and/or drainage plan. All tree protection measures shall be approved, installed and inspected by the project proponent before any construction may begin. All existing trees to remain shall be protected with the following measures during construction: a. Protective fencing shall be six (6) feet high and a minimum of one (1) foot beyond the dripline of each tree. This fencing shall be installed prior to any construction activity, including clearing and grubbing, within the roadway alignment. Additional protection measures, such as hay bales or two-by-fours, may also be necessary. No project activities shall occur within these fenced areas. b. All underground work within tree driplines shall be avoided wherever possible to minimize impacts. If trenching or grading within the dripline is completely unavoidable because of site constraints, then a qualified arborist shall be consulted to advise on the least damaging course of action. Trenches within the dripline shall be hand-excavated. c. Access within the dripline shall be granted only as a condition of the tree removal application. If pruning is required for safe access and clearance within the dripline, then necessary pruning shall be to the standards and guidelines of the International Society of Arboriculture. A qualified arborist shall identify and monitor all pruning activities during construction. d. Individual or isolated trees subject to the influences of trenching, grade changes, or altered drainage patterns shall be provided with a protective layer of mulch prior to construction activities. Similarly, if equipment access is absolutely necessary beneath the dripline of a tree, a mulch layer 4 to 12 inches deep shall be placed over the area prior to allowing equipment to cross. Mulch shall be chipped bark material placed away from the trunk and extend out to the dripline of the canopy or the edge of the protective fencing. The area beneath the dripline shall be well-watered prior to the placement of the mulch so that moisture is not wicked out of the soil by the mulch itself. The mulch shall be left on the site since removal may cause damage to surface feeder roots. e. If necessary, specific instructions for fertilization, disease, pest control, and weed control shall be made for individual trees per the qualified arborists' direction.	

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		f. Watering during construction to minimize tree stress is crucial when 25 percent or more of a tree's roots have been disturbed. Water shall be slowly applied to a minimum depth of 12 inches for the full outer half of the canopy/dripline area. The area immediately adjacent to a tree trunk shall not be watered. Watering shall occur once a month during the dry season (May through September). g. All grading shall be designed to drain water away from the base of the trees to avoid creating areas of ponding within the dripline. The natural drainage across the site shall be retained as much as possible. h. Trees that are excessively damaged due to inadequate protection or negligence by the contractor shall be replaced at the project proponent's expense. Replacement shall be determined in the same manner as mitigation plantings.	
THE PROPOSED PROJECT COULD CONFLICT WITH PROVISIONS OF THE HCP/NCCP	Potentially Significant	BIO9 The HCP/NCCP requires the proposed project to pay the appropriate fees, as indicated in the HCP/NCCP, to mitigate the loss of open space. In addition, the proposed project is subject to the HCP/NCCP conservation strategy, which includes complying with applicable Conservation Measures and Species-Level Measures specified in the HCP/NCCP. Payment of HCP/NCCP fees and implementation of the HCP/NCCP's Conservation and Species-Level Measures by the project proponent shall ensure the proposed project's compliance with the HCP/NCCP. Proof of payment shall be provided to the City of Pittsburg Development Services Department prior to issuance of any building or grading permit.	Less than Significant
Cultural Resources			
CONSTRUCTION OF THE ROADWAY ALIGNMENT HAS THE POTENTIAL TO CAUSE AN ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE AS DEFINED IN SECTION 15064.5	Potentially Significant	CULT1 Roadway construction and auxiliary activities shall avoid the Abrams Ranch Complex. In addition, the ranch complex shall not be used as a construction staging area.	Less than Significant
CONSTRUCTION OF THE ROADWAY ALIGNMENT HAS THE POTENTIAL TO CAUSE AN ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE	Potentially Significant	CULT2 If deposits of prehistoric or historical archaeological materials are encountered during project activities, all work within 25 feet of the discovery shall be immediately halted and a qualified archaeologist contacted to assess the finds and make recommendations. Project personnel shall not collect or move any archaeological materials or human remains and associated materials.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
PURSUANT TO SECTION 15064.5		It is recommended that adverse effects to archaeological deposits be avoided by project activities. If such deposits cannot feasibly be avoided, they shall be evaluated for their eligibility for listing in the California Register of Historical Resources. If the deposits are not significant, avoidance is not necessary. If the deposits are eligible, they shall be avoided or adverse effects must be mitigated. Prehistoric materials can include flaked-stone tools (e.g. projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Historical materials can include wood, stone, concrete, or adobe footings, walls and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse.	
CONSTRUCTION ACTIVITIES COULD DISTURB HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES	Potentially Significant	CULT3 If human remains are encountered, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted (if an archaeological monitor is not present) to assess the situation. If the human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission shall identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. A report of findings shall be submitted to the City of Pittsburg Development Services Department, Contra Costa County, and the Northwest Information Center.	Less than Signficant
THE PROPOSED PROJECT HAS THE POTENTIAL TO DISTURB OR DESTROY UNKNOWN PALEONTOLOGICAL RESOURCES	Potentially Significant	CULT4 A paleontologist shall monitor initial project ground disturbing activities at or below five feet from the original ground surface or at any direct exposure of bedrock. A sample of alluvium below this soil layer depth shall be taken for presence-absence testing of microvertebrate and botanical fossils. Subsequent to the initial monitoring and sediment sampling, the paleontologist can then determine if further monitoring, periodic site reviews, or no further monitoring for paleontological resources is appropriate. In addition, a paleontologist shall monitor ground disturbing activities occurring within close proximity of V6821, near Kirker Pass Road and Kirker Creek, within Section 29, Township 2 North, Range 1 East.	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		Paleontological monitors shall be empowered to halt construction activities at the location of a discovery to review the possible paleontological material and to protect the resource while it is being evaluated. Monitoring shall continue until, in the paleontologist's judgment, paleontological resources are not likely to be discovered. If paleontological resources are discovered during project activities, all work within 25 feet of the discovery shall be redirected until the paleontological monitor has assessed the situation and made recommendations regarding their treatment. The paleontological monitor shall also contact University of California Museum of Paleontology at University of California at Berkeley regarding any discoveries of paleontological resources. It is recommended that adverse effects to paleontological resources be avoided by project activities. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, they shall be avoided to ensure no adverse effects, or such effects must be mitigated.	
Geology and Soils			
THE PROJECT COULD RESULT IN SUBSTANTIAL SOIL EROSION OR THE LOSS OF TOPSOIL	Potentially Significant	Implement Mitigation Measures WQ1 through WQ3, Section 4.10, *Hydrology and Water Quality*. GS1 Prior to issuance of a grading permit and final project approval, the project sponsor shall submit an Erosion Control Plan to the City of Pittsburg Development Services Department for review and approval by the City Engineer. The Erosion Control Plan shall include measures to protect slopes that are anticipated to be susceptible to erosion by wind and rainfall. The plan shall also provide measures for the protection of creek banks where undercutting could occur during large volume flows. GS2 Prior to approval of final design and issuance of a grading permit, the project sponsor shall submit final grading and revegetation plans to the City of Pittsburg Development Services Department for review and approval. The final grading plan shall include measures for terracing to control erosion on all slopes; however, slopes with greater than 3:1 inclination shall require additional protection measures. Drainage terraces shall be constructed at 30 to 50 foot intervals on slopes with greater than 3:1 inclination in order to aid the control of surface runoff. The revegetation plans shall ensure that all slopes are be planted with fast growing, deep rooted, low water tolerant plant species in order to curtail the effects of erosion.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
THE PROPOSED PROJECT COULD 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 LANDSLIDES AND SUBSIDENCE	Potentially Significant	GS3 Prior to the issuance of any building or grading permit, the project sponsor shall submit grading plans to the City of Pittsburg Development Services Department for review and approval. The grading plans shall provide the following: a. The grading plans shall provide details for the removal of any landslide deposits that underlie the roadway alignment. Where landslide deposits are found to underlie fill, these areas shall be overexcavated and replaced as engineered fill. In addition, an infield Certified Engineering Geologist shall evaluate landslide deposits that underlie cut areas of the alignment. The Certified Engineering Geologist shall evaluate grading operations to determine the needs, if any, for remediation after any cuts have been performed. In addition, the grading plans shall include details for buttressing and repair of landslides that could have an impact on the alignment. The grading plan shall also depict plans for debris benches and basins to collect landslide materials between the edge of the slope and the roadway if complete removal of the landslide material is not possible. b. The grading plans shall demonstrate that any cut slopes are not steeper than that of the bedrock dip to prevent the bedrock dip from day lighting on the slope face. Where the bedding angle is considered adverse, or the soil exposed is either weak or sandy, it may be necessary to cut slope faces and subdrain them. In addition, cut and fill slopes shall be observed by a Certified Engineering Geologist during grading activity in order to evaluate the exposed bedrock dip, the nature of the exposed materials, and how that relates to the proposed gradient. Additional remediation of the slope faces may be needed based on the results of the insitu conditions as determined by the project Engineering Geologist. c. Grading plans shall demonstrate that where fill is placed on hillside slopes steeper than 5:1, keyways and benches would be excavated into the exposed ground surface to provide support for the fill. The keyways and benches should extend into competent natural soil or bedrock. Horizontal benches should also be excavated into competent materials (typically at five foot vertical intervals as the fill placement progresses up the slope). The keyways shall also provide appropriate means for drainage. d. The grading plans shall demonstrate that use of tuff/tuffaceous materials are used limitedly for construction fill under the roadway alignment. If tuff/tuffaceous materials are used as fill they shall not be allowed near the surface of any fill embankment.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		Additionally, the tuff/tuffaceous material should be mixed with substantial amounts of other soil and rock materials to dilute its adverse properties. e. The grading plans shall include limited overexcavation and/or use of careful moisture conditioning and subgrade preparation of soils be implemented as a result of the presence of expansive soils at the project site. GS4 During construction, the project construction manager shall ensure that grading activity in areas underlain by colluvial and slope wash deposits remove such deposits. Cuts into, or fills on top of, such deposits shall not be conducted because of the slope failure and/or landslide risk. Deposits shall be removed from fill areas and placed back as engineered fill where exposed along proposed cut areas. GS5 Prior to approval of final project design, the Certified Engineering Geologist shall provide a Supplemental Geotechnical Study which shall map in detail the soils surrounding the creek banks where culverts or bridges are required. The Certified Geotechnical Engineer shall further evaluate the soils and provide additional project design recommendations. The Supplemental Geotechnical Study shall further evaluate the soils surrounding creek banks where culverts or bridges may be required. The Supplemental Geotechnical Study must be signed by a California-registered professional engineer. The Supplemental Geotechnical Study shall provide further information regarding soil stability and subsurface recommendations, as recommended in the *Engineering Geologic and Geotechnical Feasibility Report: Four Proposed James Donlon Boulevard Extension Alternatives* (March 2012) and *Supplemental Engineering Geologic and Geotechnical Report James Donlon Boulevard Alignment Extension Middle Alignment (C2-Low) Alternative* (September 2012). The project sponsor shall determine the final bridge and culvert design based on the results of The Supplemental Geotechnical Study and implement recommended measures to minimize geologic hazards. The City of Pittsburg Development Services Department shall evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been minimized and avoided. GS6 The construction manager shall ensure the following actions are carried out during all construction activities in order to limit settlement of fill. All soils with the potential for settlement shall be removed or surcharged prior to construction. The amount of material that will need to be overexcavated will vary by the soil type. Soils within and adjacent to creek beds would have the greatest potential for settlement. Upon completion of grading, and prior to the commencement of construction, the Certified Engineering Geologist shall	

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		inspect the soils within the alignment right-of-way and verify the potential for settlement has been adequately mitigated to prevent potentially significant impacts associated with soil settlement.	
PARTS OF THE PROPOSED PROJECT WOULD BE LOCATED ON EXPANSIVE SOIL, CREATING SUBSTANTIAL RISKS TO LIFE OR PROPERTY	Potentially Significant	Implement Mitigation Measures GS3 through GS6. GS7 Due to the presence of expansive soils within the project area, the construction manager shall ensure that limited overexcavation and/or use of careful moisture conditioning and subgrade preparation of soils, as identified in the grading plans, is implemented during construction activities. As feasible, earthwork that involves the use of expansive soils shall occur during dry weather conditions.	Less than Significant
Hazards and Hazardous Materials			
BE LOCATED ON A SITE WHICH IS INCLUDED ON A LIST OF HAZARDOUS MATERIALS SITES COMPILED PURSUANT TO GOVERNMENT CODE SECTION 65962.5 AND, AS A RESULT, WOULD CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT	Potentially Significant	HAZ1 If during grading or soil excavation, evidence of petroleum products is discovered and appears to continue below the ground surface, construction activities shall stop immediately and sampling shall be performed to characterize the extent of contamination. If applicable, remediation shall include removal of soil and proper disposal at an approved facility. HAZ2 If suspect materials or wastes of unknown origin are discovered during construction on the proposed project site, which is thought to include hazardous waste materials the following shall occur: • All work shall immediately stop in the vicinity of the suspected contaminant; • Project engineer of the implementing agency shall be notified; • Area(s) shall be secured as directed by the Project Engineer; Notification shall be made to the appropriated agency's Hazardous Waste/Materials Coordinator. HAZ3 At least 48 hours prior to commencement of excavation work, the project construction manager shall contact Underground Service Alert (USA) to verify the nature and location of existing underground utilities, and to avoid the unplanned disruption of pipes or service lines during construction activities. HAZ4 At least two weeks prior to commencement of excavation work, the project construction manager shall contact Kinder Morgan regarding the high pressure pipeline and PG&E regarding the overhead utility lines and shall conduct the following: a. Perform hand excavation potholing at a minimum of 50-foot intervals, in the presence	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		of a Kinder Morgan representative, to verify the exact alignment of the pipeline. b. Coordinate with Kinder Morgan to have a representative present when construction activities are conducted within 10 feet of the high pressure pipeline. c. Provide Kinder Morgan and PG&E with a construction schedule and notify the utility companies of pre-construction conference dates and times.	
THE PROPOSED PROJECT COULD CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH REASONABLY FORESEEABLE UPSET AND ACCIDENT CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT	Potentially Significant	Implement Mitigation Measure HAZ1.	Less than Significant
THE PROPOSED PROJECT COULD 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	Potentially Significant	HAZ5 Prior to issuance of any building or grading permits or other construction related activity, the City of Pittsburg Development Services Department shall verify that that the construction manager first clears away all flammable material within ten feet of construction operations. During any time of the year when burning permits are required no person shall use or operate any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices from which a spark, fire, or flame may originate, on property located on or near any forest-covered land, brush-covered land, or grass-covered land (PRC Section 4427). HAZ6 Prior to issuance of any building or grading permits and/or commencement of other construction related activity, the City of Pittsburg Development Services Department shall review and approve plans and specifications for the project. The City of Pittsburg Development Services Department shall verify that the project sponsor has incorporated provisions for on-site firefighting purposes pursuant to Public Resources Code (PRC) Section 4428. Per PRC Section 4428, when construction activities occur between April 1 and December 1, appropriate firefighting tools must be provided in a location within the construction area at a point accessible in the event of a fire. A firefighting tool box(es) shall be accessible within the area(s) of construction and shall contain: one backpack pump-type fire extinguisher filled with water, two axes, two McLeod fire tools, and a sufficient number of shovels so that each construction crew member can be equipped to fight fire. In addition, all vehicles will be equipped with a minimum of one shovel. purposes pursuant to	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)		Level of Significance after Mitigation
			Public Resources Code (PRC) Section 4428. Per PRC Section 4428, when construction activities occur between April 1 and December 1, appropriate firefighting tools must be provided in a location within the construction area at a point accessible in the event of a fire. A firefighting tool box(es) shall be accessible within the area(s) of construction and shall contain: one backpack pump-type fire extinguisher filled with water, two axes, two McLeod fire tools, and a sufficient number of shovels so that each construction crew member can be equipped to fight fire. In addition, all vehicles will be equipped with a minimum of one shovel.	
		HAZ7	Prior to issuance of any building or grading permits and/or commencement of other construction related activity, the City of Pittsburg Development Services Department shall perform an initial inspection, as well as subsequent inspections of project construction equipment. The inspections shall verify that spark arresters are installed and maintained on all equipment, or that the engine is constructed, equipped and maintained for the prevention of fire (PRC Section 4442).	
		HAZ8	Prior to issuance of any building or grading permits and/or commencement of other construction related activity, the City of Pittsburg Development Services Department shall verify the construction contractor has provided adequate fire-fighting capability at the site. Specifically, the project sponsor shall provide and maintain tools for firefighting purposes including one serviceable round point shovel, with an overall length of not less than 46 inches, or one serviceable fire extinguisher (PRC Section 4431).	
		HAZ9	Prior to issuance of any building or grading permits, the project sponsor shall submit a safety plan to the City of Pittsburg Development Services Department for review and approval. The safety plan shall incorporate measures to reduce risk of fire. The plan shall direct construction crews to park vehicles away from flammable material, such as dry grass or brush. Additionally, at the end of each workday, heavy equipment would be parked over non-flammable surfaces as well. The plan shall also stipulate a means of communication (e.g., cell phone, if coverage is adequate) to contact fire suppression assistance. Finally, the plan shall prohibit smoking by all construction personnel while working on-site.	
Hydrology and Water Quality				
THE PROPOSED PROJECT COULD POTENTIALLY VIOLATE WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS	Potentially Significant	WQ1	Prior to issuance of any building or grading permit, the project proponent shall comply with NPDES General Construction Activities Stormwater Permit Requirements established by the CWA including preparation of a SWPPP. The SWPPP shall identify specific types and sources of stormwater pollutants, determine the location and nature of potential impacts,	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		and specify appropriate control measures to eliminate any potentially significant impacts to receiving water quality from stormwater runoff. In addition to complying with the standards established by the CWA for preparation of a SWPPP, the SWPPP shall also comply with the directions for preparing a SWPPP contained in the latest edition of the Guidelines for Construction Projects published by the SFBRWQCB. WQ2 Prior to issuance of any building or grading permit, the project proponent shall submit to the City of Pittsburg Development Services Department a copy of the NOI and SWPPP sent to the State Water Resources Control Board. WQ3 Prior to issuance of any building or grading permit for the proposed project, the project proponent shall submit a Stormwater Control Plan to the City of Pittsburg Development Services Department for the proposed project that meets applicable C.3 requirements.	
THE PROPOSED PROJECT COULD POTENTIALLY 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	Potentially Significant	Implement Mitigation Measure WQ3.	Less than Significant
THE PROPOSED PROJECT WOULD ALTER THE EXISTING DRAINAGE PATTERN OF THE SITE OR AREA, INCLUDING THROUGH THE ALTERATION OF THE COURSE OF A STREAM OR RIVER, OR SUBSTANTIALLY INCREASE THE RATE OR AMOUNT OF SURFACE RUNOFF IN A MANNER WHICH WOULD RESULT IN FLOODING ON- OR OFF-SITE	Potentially Significant	Implement Mitigation Measures WQ3.	Less than Significant
THE PROPOSED PROJECT COULD CREATE OR CONTRIBUTE RUNOFF WATER THAT WOULD EXCEED THE	Potentially Significant	Implement Mitigation Measures WQ3.	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
CAPACITY OF EXISTING OR PLANNED STORMWATER DRAINAGE SYSTEMS OR PROVIDE SUBSTANTIAL ADDITIONAL SOURCES OF POLLUTED RUNOFF			
Noise			
CONSTRUCTION NOISE COULD RESULT IN TEMPORARY IMPACTS TO NEARBY NOISE SENSITIVE RECEPTORS	Potentially Significant	NOI1 Prior to issuance of a grading permit, the project proponent shall provide evidence to the City of Pittsburg Development Services Department that is acceptable to demonstrate the project complies with the following: • Construction contracts specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices. • Property owners and occupants located within 550 feet of the project boundary shall be sent a notice, at least 15 days prior to commencement of construction of each phase, regarding the construction schedule of the proposed project. A sign, legible at a distance of 50 feet shall also be posted at the project construction site. All notices and signs shall be reviewed and approved by the City of Pittsburg Development Services Department and the City Engineer, prior to mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number where residents can inquire about the construction process and register complaints. • If impact equipment (e.g., jack hammers, pavement breakers, and rock drills) is used during project construction, hydraulically or electric-powered equipment shall be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used (a muffler can lower noise levels from the exhaust by up to about 10 dBA). • Construction haul routes shall be designed to avoid noise sensitive uses (e.g., residences, convalescent homes, etc.), to the extent feasible. • During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers. • Construction activities shall not take place outside of the allowable hours specified by the City's Municipal Code Section 18.82.040 (8:00 AM and 5:00 PM). Additionally, pursuant to	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		Section 9.44.010 of the City's Municipal Code the use of a pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other appliances between the hours of 10:00 PM and 7:00 AM are prohibited.	
Utilities and Service Systems			
REQUIRE OR RESULT IN THE CONSTRUCTION OF NEW STORM WATER DRAINAGE FACILITIES OR EXPANSION OF EXISTING FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL EFFECTS	Potentially Significant	Implement Mitigation Measures HAZ1, HAZ2, and WQ1 through WQ3.	Less than Significant

Table 2-4
Summary of Impacts – Significant and Unavoidable With Incorporation of Mitigation Measures

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Transportation/Traffic			
THE PROPOSED PROJECT WOULD CAUSE A SIGNIFICANT IMPACT AT INTERSECTIONS IN THE STUDY AREA UNDER CUMULATIVE (2030) CONDITIONS	Potentially Significant	TRA1 Prior to opening day of the proposed project, the project proponent shall contribute its fair share funding for the construction of an additional mixed-flow lane on eastbound SR 4 from SR 242 through the San Marco Boulevard Interchange. The fair share funding amount shall be provided to the City to be placed in the regional transportation mitigation fee fund, pursuant to City Municipal Code Chapter 15.100, Regional Transportation Mitigation Fee.	Significant and Unavoidable
THE PROPOSED PROJECT WOULD CAUSE A SIGNIFICANT IMPACT AT ROADWAY SEGMENTS IN THE STUDY AREA UNDER CUMULATIVE (2030) CONDITIONS	Potentially Significant	Implement Mitigation Measure TRA1.	Significant and Unavoidable

3.0 PROJECT DESCRIPTION

This Environmental Impact Report (EIR) has been prepared to identify and evaluate potential environmental impacts associated with the implementation of the City of Pittsburg's (City's) proposed James Donlon Boulevard Extension Project (proposed project). The proposed project requires approval of annexation of property into the City, amendment to the City of Pittsburg General Plan for land use designations, and a pre-zone of the land. The California Environmental Quality Act (CEQA) process began in 2007 with the circulation of an Initial Study/Notice of Preparation (IS/NOP). Since that time, changes have occurred based on resources in the project area and engineering design. Table 3-1, *Proposed Project Statistics*, provides a comparison of the changes that have occurred since 2007.

Table 3-1
Proposed Project Statistics

Project Activity	Proposed Project	
	2007	2012
Privately-Owned Parcels	7 total (APNs 089-050-056, 089-020-011, 075-070-002, 074-070-004, 089-020-009, 089-020-010, and 089-020-012)	• 2 required for the extension (APNs 089-050-056 and 089-020-011) • 5 required for improvements to Kirker Pass (APNs 089-050-055 [Existing City Property], 075-060-007, 089-020-009, 089-020-014 and 089-020-015)
Total Parcel Acreage	Approximately 675 acres	Approximately 475 acres
Total Permanent Conversion (ROW acquisition)	Approximately 75 acres	Approximately 70 acres
Annexation Properties	APNs 089-050-056 and 089-020-011	APNs 089-050-056 and 089-020-011
Right-of-Way Acquisitions (adjacent to Kirker Pass Road) and Annexation of Kirker Pass Road	APNs 075-070-002, 074-070-004, 089-020-009, 089-020-010, and 089-020-012	APNs 089-050-055 [Existing City Property], 075-060-007, 089-020-009, 089-020-014 and 089-020-015
Length of Roadway	1.98 miles	1.71 miles
Vehicle Speeds	60 miles per hour (mph)	55 mph
Grading	2,086,943 cubic yards	2,165,000 cubic yards
Culverts and Bridges	Nine	As necessary, would cross three ephemeral and three intermittent streams.
Improvements to the Kirker Pass Road/James Donlon Boulevard Intersection	• Two lanes eastbound • Two lanes westbound • Dedicated westbound to northbound right turn pocket • Eastbound to northbound left turn pocket • Signalized	• Dedicated left-turn from northbound Kirker Pass Road to westbound James Donlon Boulevard • Two through lanes northbound • Free right northbound Kirker Pass Road to eastbound James Donlon Boulevard • Two left-turn lanes from westbound James Donlon Boulevard to southbound Kirker Pass Road • One through lane on westbound James Donlon Boulevard • One right-turn lane from westbound James Donlon Boulevard to northbound Kirker Pass Road

Project Activity	Proposed Project	
	2007	2012
		• One left-turn lane southbound Kirker Pass Road to eastbound James Donlon Boulevard • Two southbound through lanes on Kirker Pass Road • One right-turn lane from southbound Kirker Pass Road to westbound James Donlon Boulevard • One left turn lane from eastbound Montreux Drive to northbound Kirker Pass Road • One through lane • One right-turn lane from eastbound Montreux Drive to southbound Kirker Pass Road
Kirker Pass Road improvements	• Portions of Kirker Pass Road would be abandoned and removed	• Kirker Pass Road from Nortonville Road to City limits upgraded to urban road standards • Profile raised to provide acceptable grades and the James Donlon Boulevard intersection
Wildlife Movement Corridors	Provided and designed according to species and sited with natural landscape features	Provided and designed in accordance with the Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) and type of species
Landscaping and Revegetation	• Drought-tolerant species and ornamental vegetation consistent with City-approved landscaping themes • Revegetate with native seed mix	• Drought-tolerant species and ornamental vegetation consistent with City-approved landscaping themes • Revegetate with native seed mix • No permanent irrigation for revegetated areas
Buttresses	None	Provided to support 2:1 slope gradient
Stormwater Detention Basins	Detention basins and best management practices (BMPs)	Bio-retention facilities and BMPs
Utility Relocations	• Relocate Pacific Gas and Electric (PG&E) transmission lines (two towers)	• Relocate PG&E transmission lines (up to six towers) • Lower Kinder Morgan 10-inch high-pressure natural gas line

The City proposes to construct a 1.71-mile extension of James Donlon Boulevard from the western edge of the approved Sky Ranch II Subdivision (Sky Ranch II) to Kirker Pass Road. The proposed project would provide a limited access arterial roadway to serve regional circulation needs and relieve existing traffic congestion on Buchanan Road, which currently receives a high volume of east-west commute traffic between the City of Antioch and the City of Concord. The extension of James Donlon Boulevard would provide an alternative access route that would link the eastern portion of Contra Costa County (e.g., the cities of Brentwood, Antioch and Pittsburg) to the central portion of Contra Costa County (e.g. the cities of Concord and Walnut Creek). In addition to the extension of James Donlon Boulevard, the City proposes to upgrade Kirker Pass Road from Nortonville Road to the City limit line (approximately 0.63 mile) from a four-lane rural road to a four-lane urban road. A northbound to eastbound free right-turn from Kirker Pass Road to the extension of James Donlon Boulevard is also proposed.

The project site is currently located within unincorporated Contra Costa County (County), but within the Urban Limit Line, City's Planning Area, and the City's Sphere of Influence. To facilitate construction of the roadway extension, the City proposes to annex two privately-owned properties, through which the roadway would cross, totaling approximately 475 acres east of Kirker Pass Road. The proposed project

includes an amendment to the City General Plan to designate the land Open Space. It also includes a pre-zoning to designate the properties Open Space (OS) District, with an option to provide an Agricultural Preserve Overlay. In addition, the City proposes to annex the Kirker Pass Road right-of-way from Nortonville Road to the City limit line and, thus, that portion of Kirker Pass Road would become a City-maintained right-of-way.

As noted above, the extension of James Donlon Boulevard is proposed from the western edge of the Sky Ranch II Subdivision (Sky Ranch II), which was approved by the City in December 2005 but has not yet been completed, to Kirker Pass Road. Sky Ranch II consists of the construction of 415 single-family homes on approximately 160 acres and the construction of approximately 0.4 miles of James Donlon Boulevard within the limits of the Sky Ranch II Subdivision. Therefore, the environmental impacts associated with the construction of the extension through Sky Ranch II were analyzed in the Sky Ranch II Subdivision EIR. No further analysis of that portion of the extension is required in this EIR.

The proposed project was previously referred to as the Buchanan Road Bypass in various planning documents, including the City's General Plan 2004 (City General Plan) and the East Contra Costa Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP). The James Donlon Boulevard Extension is the same project and has undergone a name change along with other alignment modifications. Additionally, in 1993, a Program EIR was prepared for the proposed Buchanan Road Bypass. By nature, a Program EIR generally analyzes broad environmental effects of a program with the acknowledgement that site-specific environmental review may be required for particular aspects of the program (State CEQA Guidelines, Section 15168). The 1993 Program EIR did not define the proposed Project in specific detail or in engineering design terms; therefore, it is only relevant in the sense that it provides baseline information on the general environmental impacts regarding construction and operational conditions in the area defined by the preliminary route configuration. Thus, the Program EIR is significantly different in the preliminary route configuration (i.e., roadway alignment and Kirker Pass Road intersection configuration) from the proposed project described in this EIR.

This chapter provides an overview of the project location, setting and characteristics, and includes the project objectives and a description of the intended use of this EIR.

3.1 PROJECT LOCATION

The proposed project would be a public right-of-way constructed through two privately-owned properties (APNs 089-050-056 and 089-020-011). These two properties are proposed for annexation to the City as part of the roadway extension. In addition, slope easements or roadway widening along Kirker Pass Road may affect five additional properties (APNs 089-050-055, 075-060-007, 089-020-009, 089-020-014 and 089-020-015). Six of the parcels comprising the project area are located within unincorporated Contra Costa County, near the western limits of the City of Antioch and the southern limits of City of Pittsburg, within the City of Pittsburg's Planning Area, Urban Limit Line, and Sphere of Influence. Parcel No. 089-050-055 is city-owned and is already within located within city limits. Approximately 70 acres of right-of-way and/or slope easements for grading would be required for the proposed project and would be purchased from the property owners or acquired through the use eminent domain.[1] Refer to Figure 3-1, *Project Vicinity*, and Figure 3-2, *Project Location*, for a depiction of the project location.

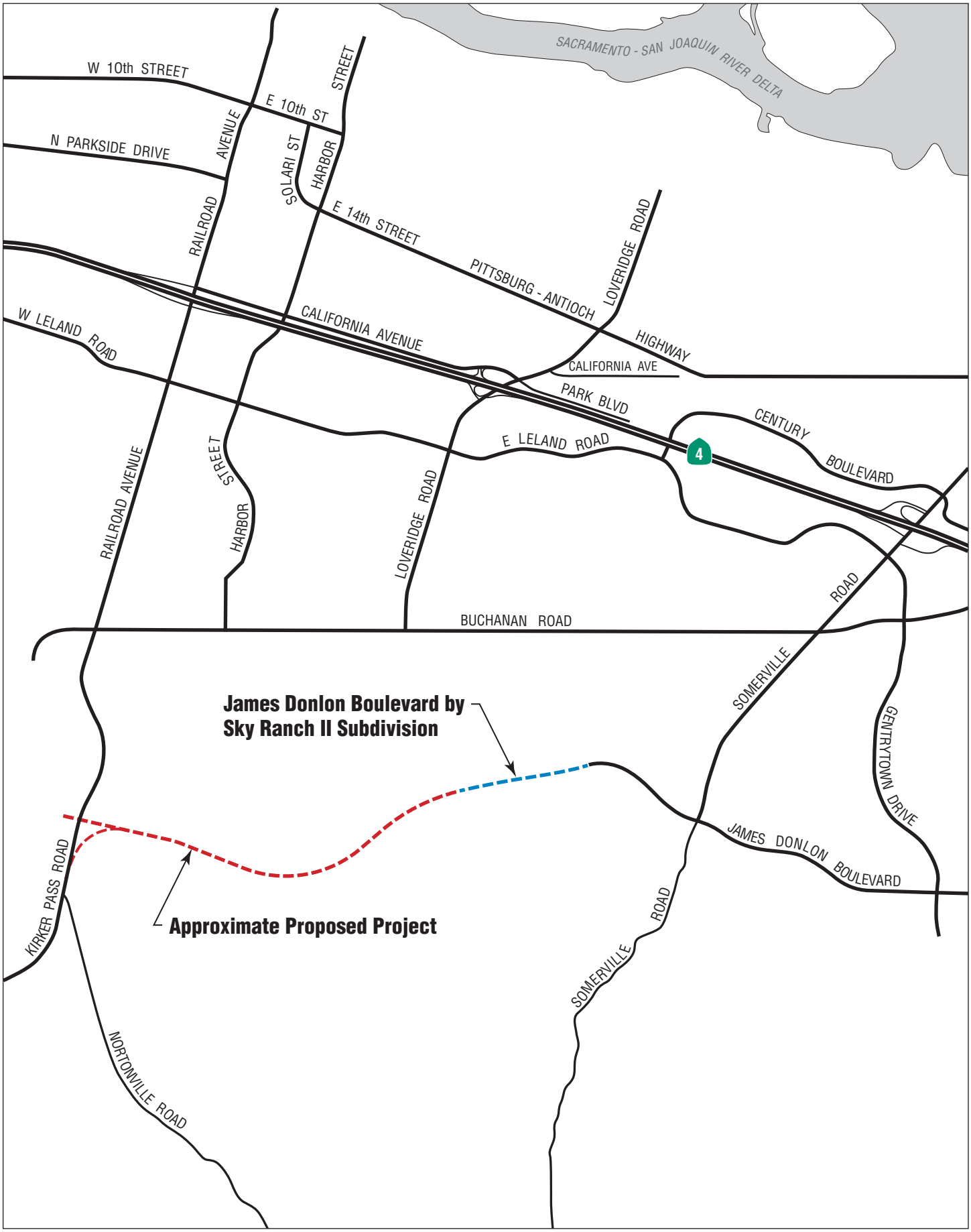
[1] Eminent domain is the right of a governmental agency to take private property for public use with payment of compensation to the owner, but without the owner's consent.

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Project Vicinity

11/28/12 JN 130944-18838 MAS

Figure 3-1



JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Project Location

0 1/2 mile
APPROXIMATE

11/28/12 JN 130944-18838 MAS

Figure 3-2

3.2 PROJECT SETTING

3.2.1 OVERVIEW OF EXISTING SITE CONDITIONS

The properties through which the proposed project would cross are located adjacent to existing and proposed residential neighborhoods to the north, west and east, and agricultural land to the south. The area has historically been used for horse and cattle grazing. Occupying a small portion of the largest property, known as the Thomas Ranch property (APN 089-050-056), is an existing ranch and accessory buildings (e.g., barn and corrals). The existing ranch would be retained and cattle grazing would continue after implementation of the proposed project. Topography within the project area ranges from gentle slopes in the northern portions to steeper slopes in the western and southern portions of the area. Several perennial, intermittent and ephemeral streams occur in drainages throughout the project area. These streams flow in a south to north direction and eventually enter the City's storm drain system prior to discharging into Suisun Bay. Vegetation within the area is composed of primarily non-native grassland and small areas of oak savanna and riparian vegetation. The soils within the project area have been classified and described by the U.S. Soil Conservation Service (1977) and primarily consist of three series/groups, which are the Altamont Group, Lodo Series and Rincon Series.

3.2.2 EXISTING GENERAL PLAN AND ZONING DESIGNATIONS

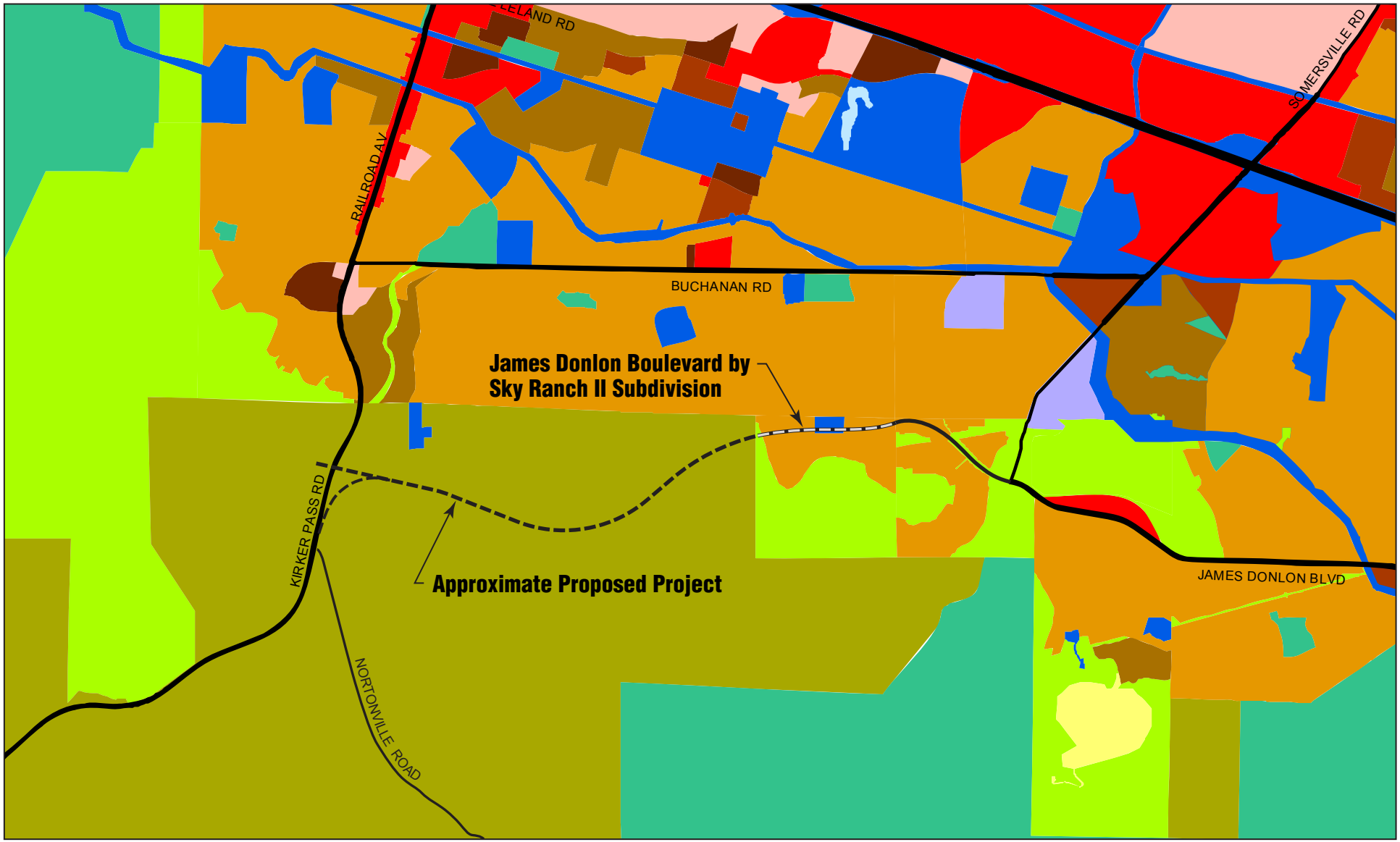
The subject properties are located in unincorporated Contra Costa County within the City's Planning Area, Sphere of Influence (SOI), and within the City's Urban Limit Line as established by voter approved Measure P.[2]

The County General Plan land use designations for the project vicinity are show in Figure 3-3, *Existing County Land Use Designations*, which include: AL (Agricultural Lands); OS (Open Space); SH (Single Family Residential – High); ML (Multiple Family Residential – Low); and PS (Public/Semi-Public). The City General Plan land use designations are depicted in Figure 3-4, *Existing City Land Use Designations*, and include: Utility/Right-of-Way; Hillside Low Density Residential; and Open Space. The properties are zoned A-4 (Agricultural Preserve) by the County. Measure P pre-zoned the subject parcels within the project area Open Space (OS) District, Hillside Planned Development (HPD) District, and Government and Quasigovernment District (GQ) District, as depicted in Figure 3-5, *Existing City Pre-Zoning*.

3.2.3 SURROUNDING LAND USES

There are a variety of land uses surrounding the project area. Bordering the properties to the north are single-family residential homes. The approved Sky Ranch II Subdivision is located east of the project area. Property west of the project area, across Kirker Pass Road, is currently undeveloped; however, the City is currently processing an application to subdivide the approximately 148-acre site into 380 single-family residential lots. The project is known as the proposed Montreux Subdivision and includes requests for re-zoning/pre-zoning, a Tentative Subdivision Map and Annexation. Property south of the project area is undeveloped agricultural land and open space. Refer to Figure 3-6, *Surrounding Land Uses*, for a graphical representation of the surrounding land uses.

[2] Measure P was approved on November 5, 2005, to amend the City's General Plan and Zoning Map by: (1) establishing a voter-approved urban limit line, which can only be changed by a vote of the people; (2) pre-zoning certain lands outside the City limits; (3) adding a new General Plan goal; and (4) modifying other General Plan text and diagrams.



LEGEND

- SL (Single Family Residential - Low)
- SH (Single Family Residential - High)
- ML (Multiple Family Residential - Low)
- MM (Multiple Family Residential - Medium)
- MH (Multiple Family Residential - High)
- SBP (Business Park)
- LI (Light Industry)
- PS (Public/Semi-Public)
- WA (Water)
- PR (Parks and Recreation)
- OS (Open Space)
- AL (Agricultural Lands)

Source: Contra Costa County, General Plan Land Use Element, June 22, 2010.

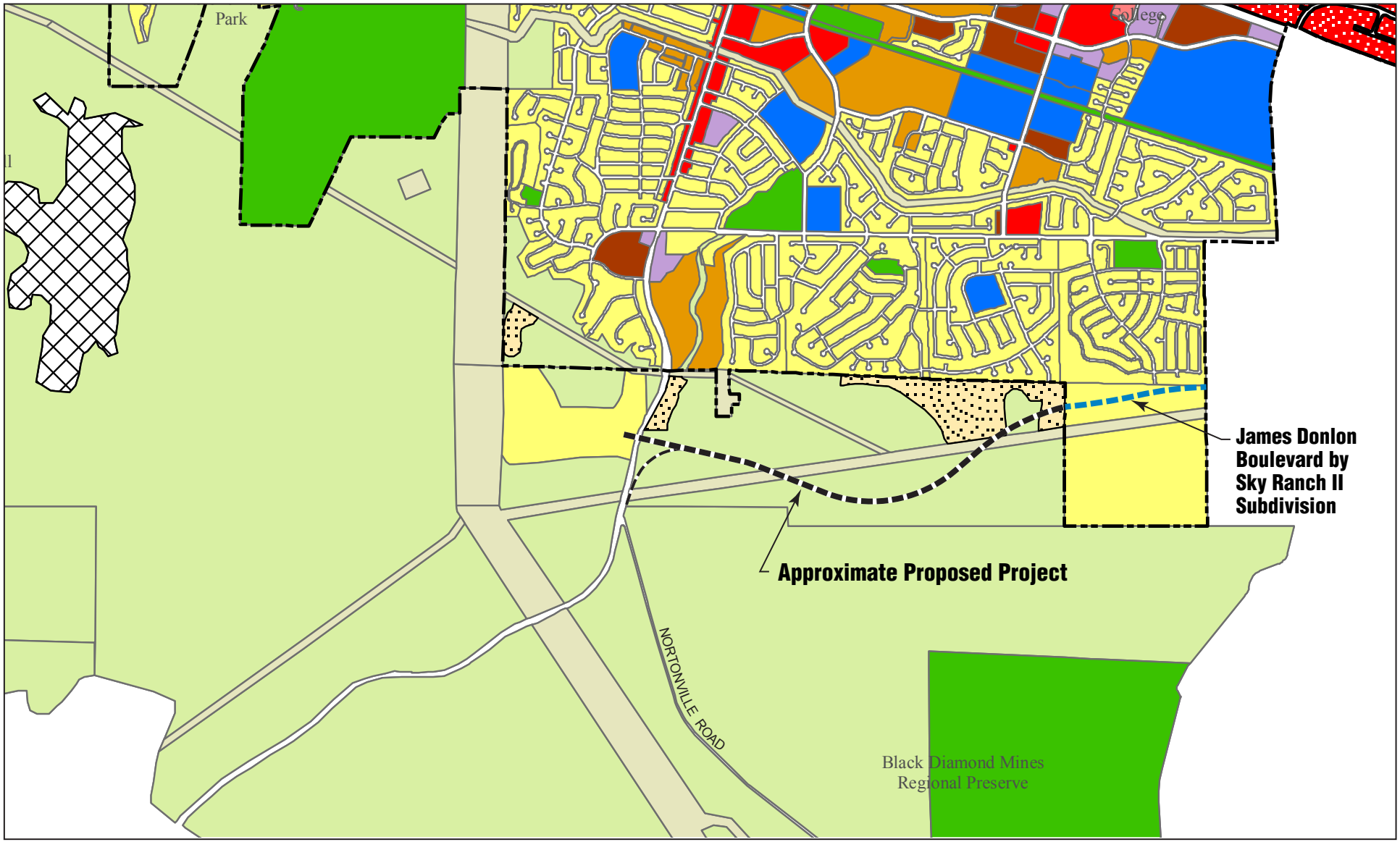
0 1/2 mile
APPROXIMATE

11/28/12 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Existing County Land Use Designations

Figure 3-3



LEGEND

- City Limits
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Hillside Low Density Residential
- Community Commercial
- Service Commercial
- Regional Commercial
- Business Commercial
- Public / Institutional
- Park
- Open Space
- Utility / ROW
- Landfill

Source: City of Pittsburg, General Plan, December 2011.

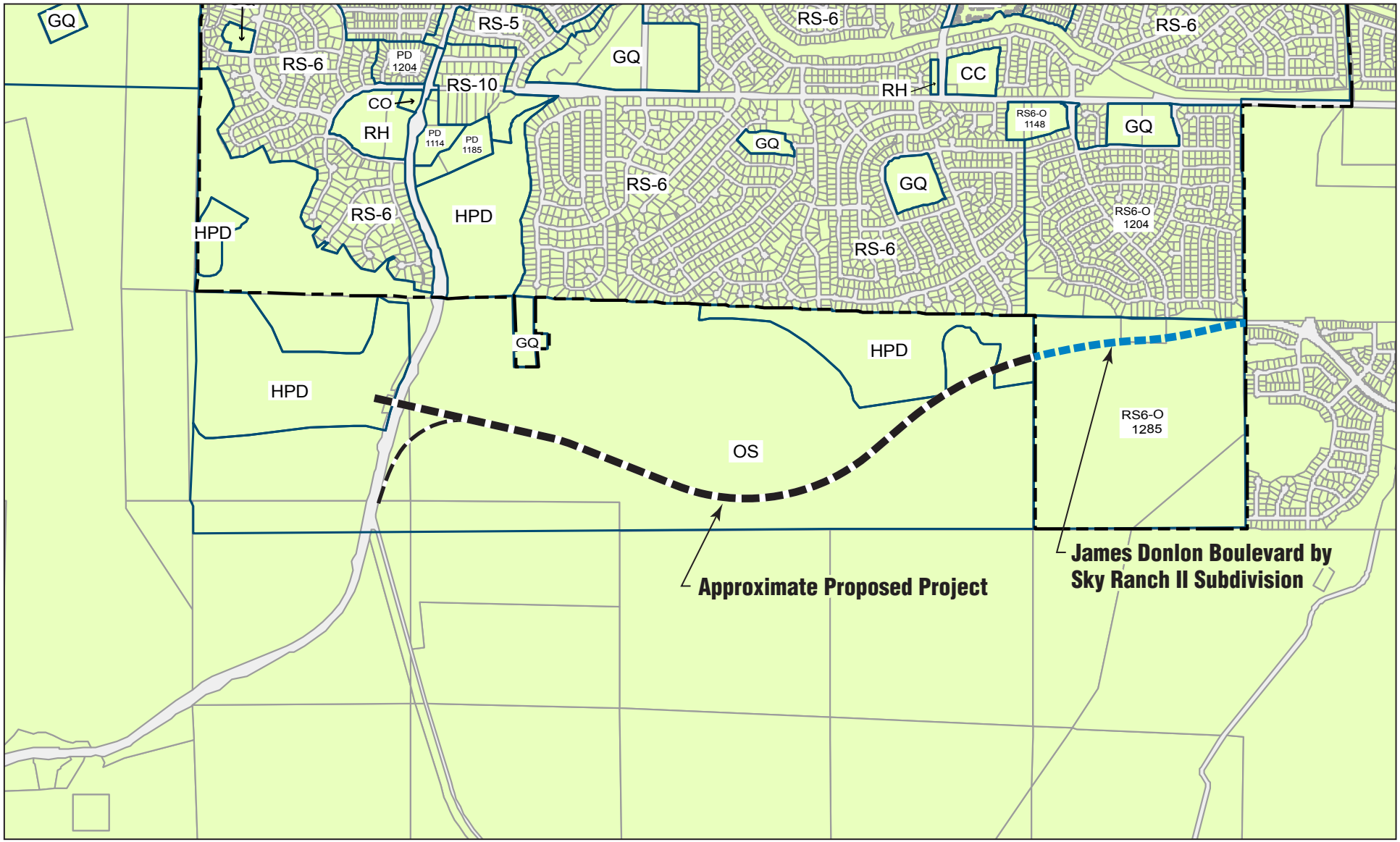
0 1/2 mile
APPROXIMATE

11/28/12 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Existing City Land Use Designations

Figure 3-4



LEGEND

CO	Commercial Office
OS	Open Space District
HPD	Hillside Planned Development
RS-6	Residential (6,000 square foot minimum lot size)
RS6-O	Residential (6,000 square foot minimum lot size, Limited Overlay)
RS-10	Residential (10,000 square foot minimum lot size)
RH	High Density Residential District
GQ	Government and Quasigovernment District
PD	Planned Development

Source: City of Pittsburg, Zoning Map, June 2011.

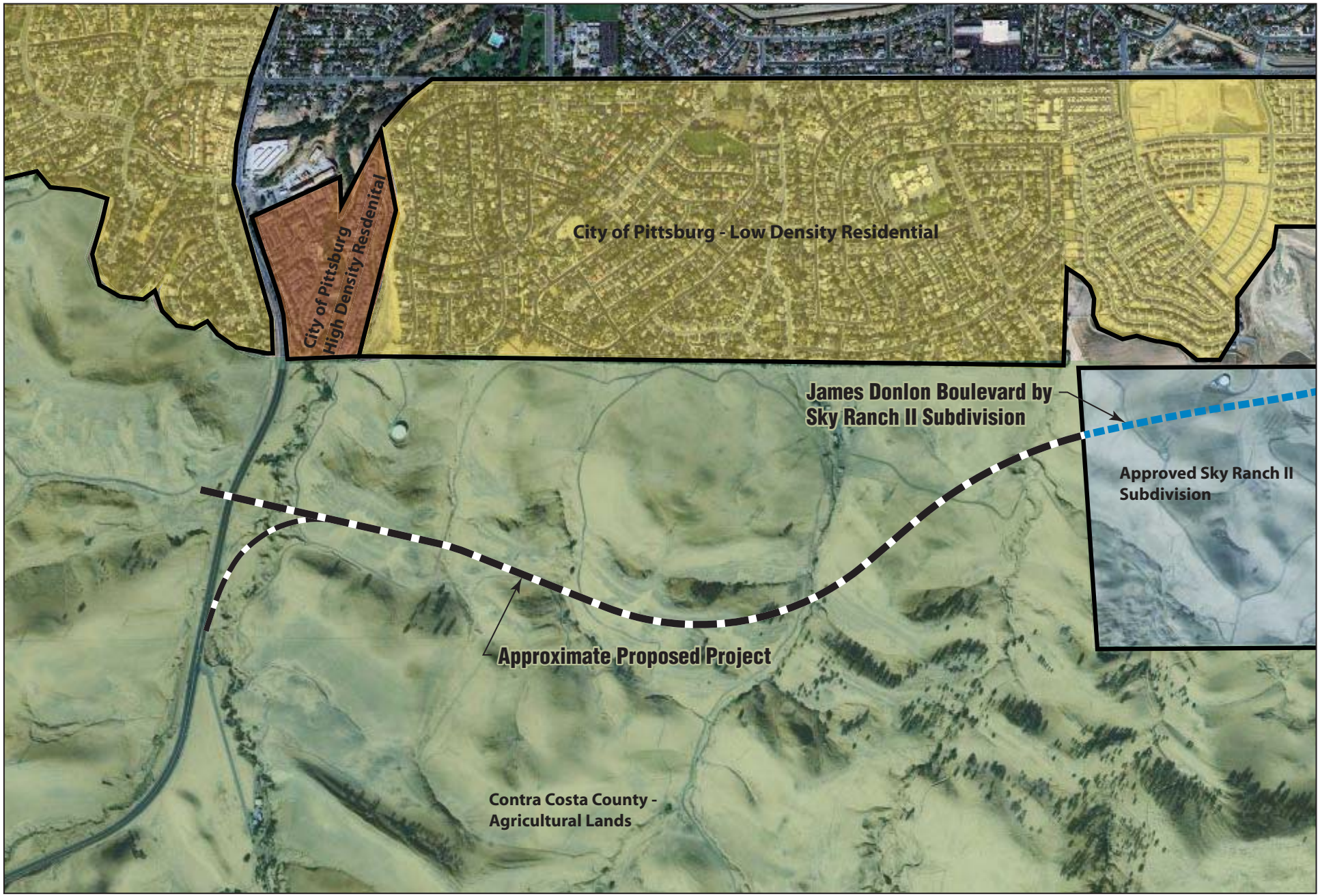
not to scale

11/28/12 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Existing City Pre-Zoning

Figure 3-5



Source: USGS Aerial, 2006.

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JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Surrounding Land Uses

Figure 3-6

3.3 PROJECT CHARACTERISTICS

The proposed extension of James Donlon Boulevard would be constructed from the western boundary of the approved Sky Ranch II Subdivision to Kirker Pass Road. From Sky Ranch II, the proposed roadway would merge from a four-lane road to a two-lane road and would meet City and California Department of Transportation (Caltrans) standards and regulations for highway design for vehicles traveling up to 55 miles per hour (mph).

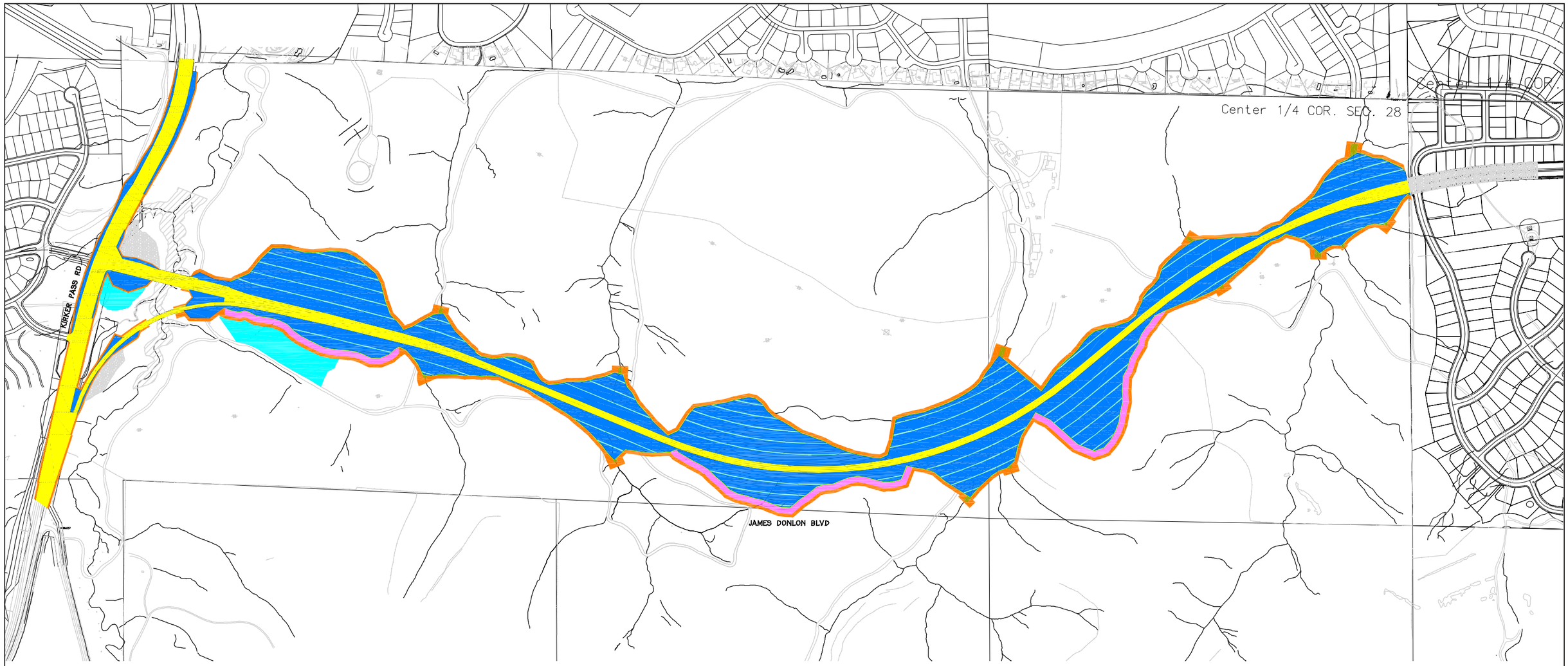
The intersection configuration at Kirker Pass Road would generally maintain the existing alignment of Kirker Pass Road and create a four-way, signalized, tee intersection with proposed Montreux Drive as the eastbound approach, proposed James Donlon Boulevard as the westbound approach and Kirker Pass Road as the northbound/southbound approaches (refer to Figure 3-7, *Site Plan*). The intersection would include the following design features:

- Northbound Kirker Pass Road – One left-turn lane, two through lanes and one free right-turn lane not controlled by the signal with a design speed of 50 mph.
- Westbound James Donlon Boulevard – Two left-turn lanes, one through lane and one right-turn lane.
- Southbound Kirker Pass Road – One left-turn lane, two through lanes, and one right-turn lane.
- Eastbound Montreux Drive approach – One left-turn lane and one through lane, and one right-turn lane.

Kirker Pass Road from Nortonville Road to the City limits would be upgraded from rural road standards to urban road standards. The profile of Kirker Pass Road would be raised to provide acceptable grades at the intersection with James Donlon Boulevard.

The four-lane portion of the James Donlon Boulevard at the Kirker Pass Road intersection would be designed to urban road standards with medians, curbs, gutters, sidewalks and streetlights. The two-lane portion of James Donlon Boulevard would be designed to rural road standards. Additional proposed project features on James Donlon Boulevard include:

- Four-foot-wide concrete interceptor ditches at the top and toe of each slope;
- Six-foot-wide concrete terrace drains on all earthwork benches;
- 30-foot-wide earthworks buttress excavation limits on all north facing cut slopes;
- 20-foot clearing limits beyond the earthwork daylight line to provide access and movement at the top and toe of slopes;
- 100 feet wide by 50 feet long grading limits at the beginning and end of each culvert to complete all anticipated remedial grading;
- The placement of rip-rap at the beginning and end of all culverts to control erosion;
- The identification of potential earthwork borrow sites; and
- The identification of staging areas for construction equipment.



LEGEND:

4' CONCRETE DITCH	74,212.05 SF (1.704 ACRES)	CONSTRUCTION EASEMENT	490,939.55 SF (11.270 ACRES)
6' CONCRETE DITCH	137,670.80 SF (3.160 ACRES)	GRADING	2,099,688.32 SF (48.202 ACRES)
RIP RAP	11,709.91 SF (0.269 ACRES)	BUTTRASSES	155,432.68 SF (3.568 ACRES)
ROADWAY IMPROVEMENT	771,912.20 SF (17.721 ACRES)	BORROW/STAGING AREA	132,382.79 SF (3.039 ACRES)
		STAGING AREA	141,273.89 SF (3.243 ACRES)
		NO CONSTRUCTION	

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JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Site Plan

Figure 3-7

3.3.1 BRIDGES AND CULVERTS

The proposed project would include culverts and bridges, as necessary, in order to cross three ephemeral and three intermittent stream and drainage features, including Kirker Creek. Culverts would be sized to facilitate 100-year storm events. The proposed culverts and bridges would require construction within these drainage features and would be sized to facilitate a 100-year storm event. Additional culverts of various sizes would also be provided to accommodate wildlife movement and cattle ranch operations crossing James Donlon Boulevard. Culverts are anticipated to range in size from 24-inch to 132-inch.

The proposed culverts and bridges would require construction within the drainage features and, therefore, would require permits from the U.S. Army Corps of Engineers (USACE), San Francisco Bay Regional Water Quality Control Board (RWQCB) and the California Department of Fish and Wildlife (CDFW). Impacts to federal and/or state special-status species would require consultation with CDFW and U.S. Fish and Wildlife Service (USFWS).

3.3.2 WILDLIFE MOVEMENT CORRIDORS

The proposed project would include wildlife movement corridors that would provide safe access routes for wildlife to cross from one side of the proposed roadway to the other. Additional culverts of various sizes would also be provided to accommodate wildlife movement and cattle ranch operations crossing James Donlon Boulevard. Culverts are anticipated to range in size from 24-inch to 132-inch. Wildlife movement corridors would be located in accordance with HCP/NCCP requirements and designed for the type of species that would utilize the corridor. Directional fencing would be installed to direct wildlife toward the undercrossings.

3.3.3 LANDSCAPING

Landscaping would be provided for the proposed medians, using native drought-tolerant species and ornamental vegetation, consistent with City-approved landscaping themes. In addition, areas outside the roadway that would be impacted and/or graded would be revegetated using a native seed mixture. No permanent irrigation is proposed for these revegetated areas.

3.3.4 GRADING

Project grading would require a substantial amount of cut and fill due to the steep terrain within the project area. Grading activities may require the export of native soils and the import of engineered fill material. Approximately 2,165,000 cubic yards of grading would be required for the roadway. Additionally, landslides have been identified within the project area and would require remediation prior to the start of construction activities. Where landslide deposits are found to underlie fill, these areas would be overexcavated and replaced as engineered fill. In addition, the project would utilize a buttressing technique to support slopes at a 2:1 gradient. This technique would minimize the grading required in several cut slopes within the project area.

3.3.5 RIGHT-OF-WAY REQUIREMENTS

As previously noted, approximately 70 acres of right-of-way and slope easements would be required for project implementation. The proposed project would be a public right-of-way constructed through portions of two privately-owned properties (APNs 089-050-056 and 089-020-011). The right-of-way would be purchased from the property owners or acquired through the use of eminent domain.

3.3.6 STORMWATER DRAINAGE CHARACTERISTICS

The proposed project's stormwater drainage system would follow Caltrans Design Manual procedures and be configured to contain stormwater flow spread width to the roadway shoulder during a 25-year design storm based on a minimum time of concentration of ten minutes. Stormwater inlet spacing would generally be a function of roadway width, longitudinal slope and access to culverts. Storm drainage networks would be configured to discharge toward logical stream crossings to maintain existing drainage patterns and minimize erosion potential. In accordance with the Contra Costa Clean Water Program, bio-retention facilities would be designed and implemented to address stormwater quality from the additional impervious surface area that would result from the proposed project.

3.3.7 UTILITIES

There are several Pacific Gas and Electric (PG&E) transmission lines that traverse the project area. It would be necessary to relocate or raise three transmission towers in order to implement the proposed project. The proposed project would not require a permanent source of water or wastewater facilities and would not include the extension of water or wastewater pipelines within the roadway. However, the project would require a source of electricity for the proposed streetlights. Electricity would be provided by extending PG&E service to the proposed project. In addition, Kinder Morgan has a ten-inch, high–pressure, natural gas pipeline within the project area that may be lowered in certain locations.

3.4 PROJECT OBJECTIVES

The proposed project has the following objectives:

- Construct a limited access arterial roadway between Kirker Pass Road and Somersville Road south of the existing City limits, to serve regional circulation needs
- Provide a secondary access route for existing, planned and future residential developments in southeastern Pittsburg and southwest Antioch
- Relieve traffic congestion on Buchanan Road, which receives a high volume of east-west commute traffic between Antioch and Concord
- Reduce traffic volumes adjacent to Buchanan Park, Highlands Elementary School, and residences that access Buchanan Road directly.
- Construct a roadway that would meet City, County and Caltrans design and safety standards
- Avoid sensitive wildlife and plant habitat
- Avoid severe landslide areas

3.5 INTENDED USE OF EIR

The analysis in this EIR has been prepared at a project-level for the proposed project and is intended to cover the project applications and construction/implementation of the proposed project. The City is the lead agency for the proposed project and has the principal discretionary authority over the review of the project applications and consideration of project approval. As described below, these include:

- Annex two properties comprising approximately 475 acres to the City (APNs 089-050-056 and 089-020-011)
- Annex Kirker Pass Road to the City from Nortonville Road north to the City limit line (parcels affected by Kirker Pass Road improvements include APNs 089-050-055, 075-060-007, 089-020-009, 089-020-014, and 089-020-015)

- Amend City General Plan land use designations to designate all subject properties Open Space (change the Hillside Low Density Residential portions of APNs 089-050-056 and 089-020-011 to Open Space)
- Pre-zone the SOI to designate all subject properties Open Space (OS) District with an option to add an Agricultural Preserve Overlay (change the Hillside Planned Development (HPD) District pre-zone portion of APN 089-050-056 to pre-zone Open Space (OS) District with an option to provide an Agricultural Preserve Overlay District)
- Project construction and related improvements

3.5.1 RESPONSIBLE AND TRUSTEE AGENCIES

Projects or actions undertaken by the lead agency may require subsequent oversight, approvals, or permits from other public agencies in order to be implemented. Other such agencies are referred to as responsible agencies and trustee agencies. Pursuant to Sections 15381 and 15386 of the State CEQA Guidelines, as amended, responsible agencies and trustee agencies are defined as follows:

A *responsible agency* is a public agency that proposes to carry out or approve a project, for which a lead agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, the term *responsible agency* includes all public agencies other than that lead agency that have discretionary approval power over the project (Section 15381).

A *trustee agency* is a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California (Section 15386).

The various public, private, and political agencies and jurisdictions with a particular interest in the proposed project include, but are not limited to, the following:

- U.S. Army Corps of Engineers (USACE)
- U.S. Fish and Wildlife Service (USFWS)
- California Department of Fish and Wildlife (CDFW)
- California Department of Transportation (Caltrans)
- California Air Resources Board
- San Francisco Bay Regional Water Quality Control Board (RWQCB)
- Contra Costa County Local Agency Formation Commission (LAFCO)
- Contra Costa Flood Control and Water Conservation District
- East Contra Costa County Habitat Conservancy
- Pacific Gas and Electric (PG&E)
- Kinder Morgan Energy Partners

3.5.2 ENTITLEMENTS REQUIRED

- Annexation approval of APNs 089-050-056 and 089-020-011 to the City of Pittsburg by the Contra Costa County LAFCO
- Amendment to the City of Pittsburg General Plan land use designations to designate all subject properties Open Space
- Pre-zone the SOI to designate all subject properties Open Space (OS) District, with an option to provide an Agricultural Preserve Overlay

- California Fish and Game Code Section 1600 et seq. permits (Streambed Alteration Agreements)
- Agreements/Permits/Authorizations pursuant to the California and Federal Endangered Species acts, if necessary
- Section 404 of the Federal Clean Water Act permits by USACE
- Section 401 of the CWA and the Porter-Cologne Water Quality Control Act by the San Francisco Bay RWQCB
- San Francisco Bay RWQCB National Pollutant Discharge Elimination System (NPDES) Storm Water Permit
- San Francisco Bay RWQCB Storm Water Pollution Prevention Plan (SWPPP)
- Grading Permits from the City of Pittsburg

4.0 EXISTING CONDITIONS, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 INTRODUCTION

This chapter discusses the potential environmental impacts of the proposed project and presents the findings of the environmental analysis conducted for this Draft Environmental Impact Report (EIR). The following environmental issues are evaluated in Section 4.2 through 4.14: Land Use and Planning; Aesthetics; Agriculture and Forestry Resources; Air Quality; Biological Resources; Cultural Resources; Geology and Soils; Hazards and Hazardous Materials; Hydrology and Water Quality; Noise; Population and Housing; Transportation/Traffic; and Utilities and Service Systems.

4.1.1 ORGANIZATION OF CHAPTER 4

Each of the sections in this chapter is organized as follows:

- **Environmental Setting** specifies on-site and surrounding environmental conditions in existence at the time of publication of the Notice of Preparation (NOP), as well as relevant regulatory standards and requirements.
- **Regulatory Setting** identifies the Federal, State and local laws, plans, and policies applicable to the proposed project.
- **Environmental Analysis** first specifies the applicable significance thresholds (i.e., criteria by which the level of significance of each potential impact is evaluated), and then describes changes that would result in the existing physical environment should the proposed project be implemented. The analysis focuses on the changes that might be significant impacts if the project is implemented and provides mitigation measures to reduce these impacts.

4.1.2 MITIGATION MEASURES

Potentially feasible mitigation measures must be identified for significant impacts. Adopted mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments. Each mitigation measure is numbered sequentially so that it directly correlates to the impact it addresses.

4.2 LAND USE AND PLANNING

This section evaluates consistency of the proposed project with the City of Pittsburg General Plan (City General Plan). In addition, this section also evaluates the project's consistency with the Contra Costa County General Plan (County General Plan).

4.2.1 ENVIRONMENTAL SETTING

The proposed project would traverse property that is located in unincorporated Contra Costa County south of the City limit boundaries. The proposed project is located within the Urban Limit Line as identified in the County General Plan, which also identifies the project area as Urban Uses (unincorporated/City). The project area is within the City's Planning Area and Sphere of Influence (SOI) as established by the City. The proposed project would be located within the City's Urban Limit Line, as established by Measure P.

The environmental setting of the project area consists of the physical conditions or existing land uses along the proposed roadway alignment and in the immediately surrounding area. The proposed project would extend through properties that are primarily undeveloped and used for cattle grazing. Land uses surrounding and adjacent to the project area include single-family residential homes to the north, Sky Ranch II Subdivision to the east, and undeveloped land to the south and west. The City is currently processing an application to subdivide approximately 148 acres of undeveloped land west of Kirker Pass Road; this project is known as the proposed Montreux Subdivision. See Figure 4.2-1, *Surrounding Land Uses*, for a graphical representation of the area.

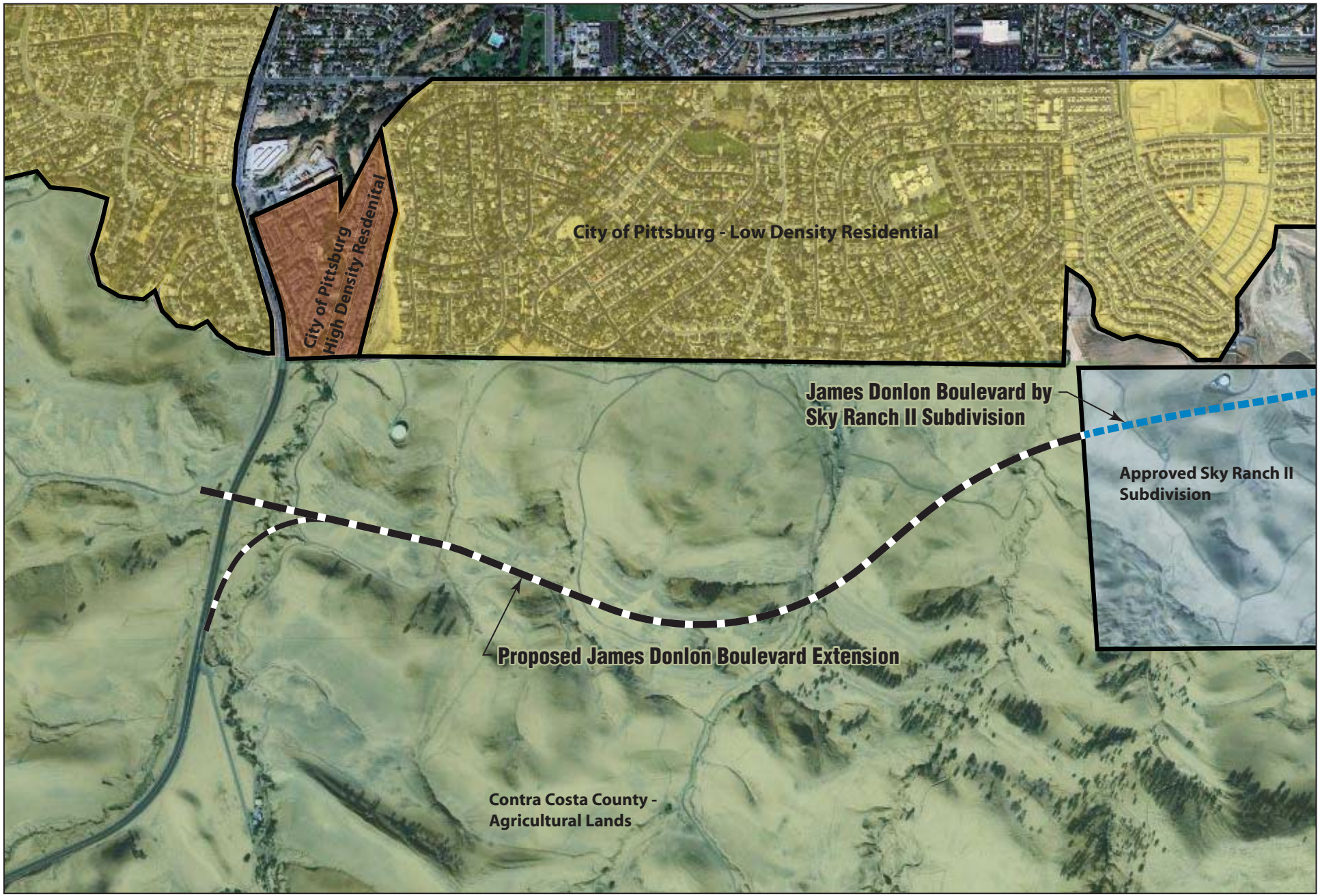
The County General Plan land use designations for the project vicinity are show in Figure 4.2-2, *Existing County Land Use Designations*, which include: AL (Agricultural Lands); OS (Open Space); SH (Single Family Residential – High); ML (Multiple Family Residential – Low); and PS (Public/Semi-Public). The City's General Plan land use designations are depicted in Figure 4.2-3, *Existing City Land Use Designations*, and include: Utility/Right-of-Way; Hillside Low Density Residential; and Open Space. The properties are zoned A-4 (Agricultural Preserve) by the County. Measure P pre-zoned the subject parcels within the project area Open Space (OS) District, Hillside Planned Development (HPD) District, and Government and Quasigovernment District (GQ) District, as depicted in Figure 4.2-4, *Existing Measure City Pre-Zoning*).

4.2.2 REGULATORY SETTING

STATE

California Environmental Quality Act (CEQA)

Section 15125(d) of the State CEQA Guidelines requires that an EIR discuss "any inconsistencies between the proposed project and applicable general plans and regional plans." Direct and indirect physical impacts resulting from project implementation need not be addressed in the analysis of plan consistency, but in the appropriate technical sections of the EIR.



Source: USGS Aerial, 2006.

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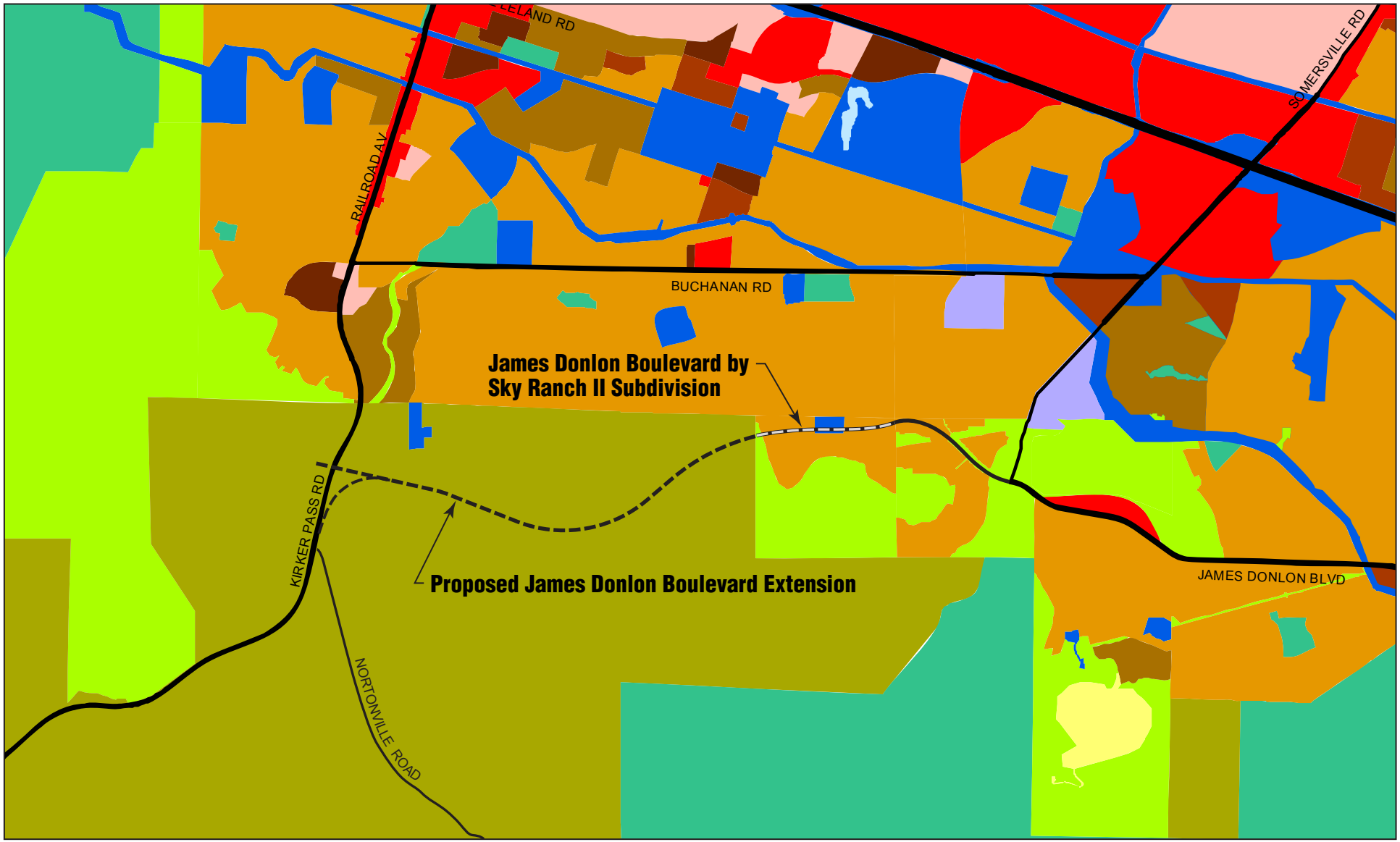
2/26/13 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Surrounding Land Uses

Figure 4.2-1



LEGEND

- SL (Single Family Residential - Low)
- SH (Single Family Residential - High)
- ML (Multiple Family Residential - Low)
- MM (Multiple Family Residential - Medium)
- MH (Multiple Family Residential - High)
- SBP (Business Park)
- LI (Light Industry)
- PS (Public/Semi-Public)
- WA (Water)
- PR (Parks and Recreation)
- OS (Open Space)
- AL (Agricultural Lands)

Source: Contra Costa County, General Plan Land Use Element, June 22, 2010.

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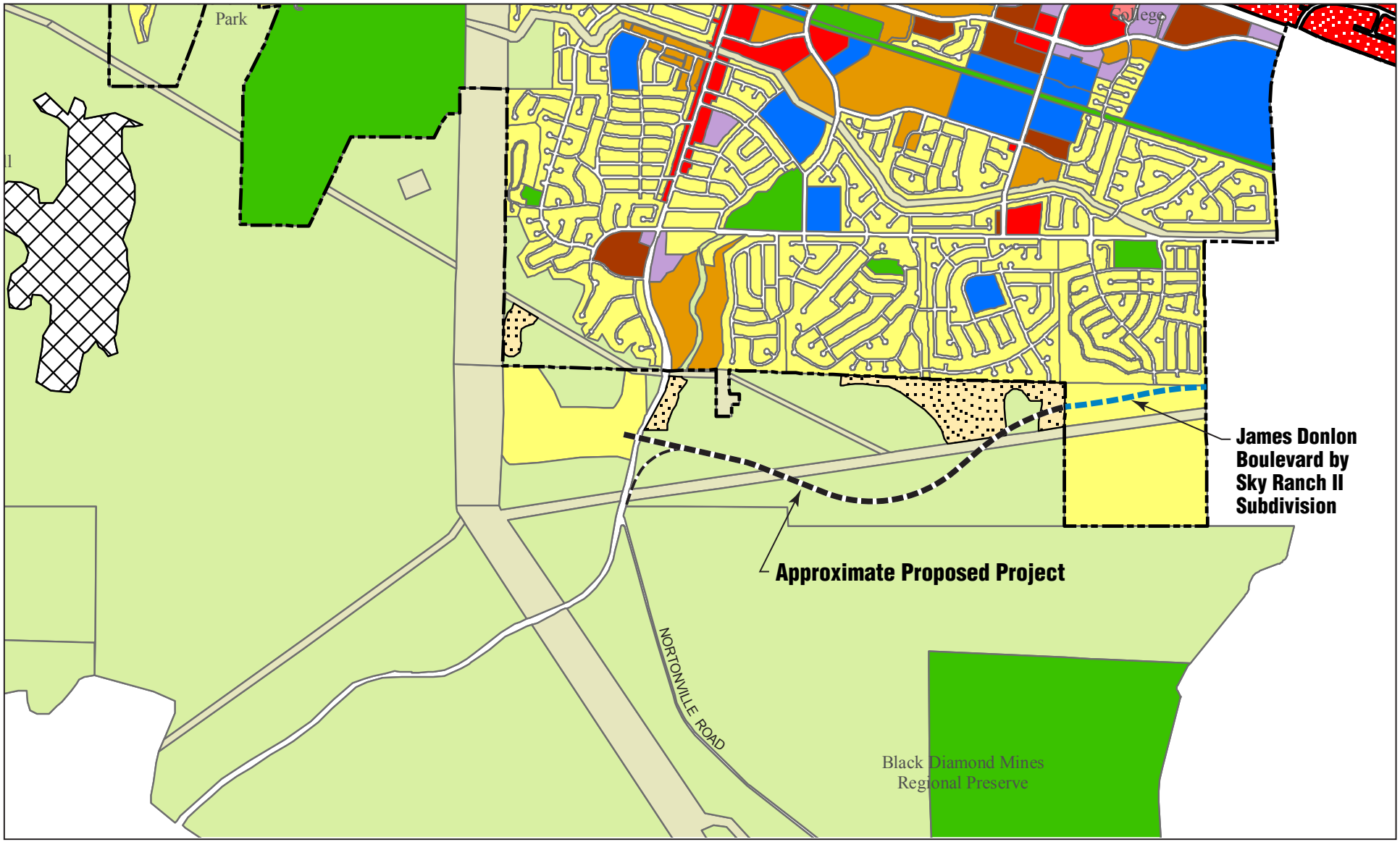
JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Existing County Land Use Designations

Figure 4.2-2



LEGEND

- City Limits
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Hillside Low Density Residential
- Community Commercial
- Service Commercial
- Regional Commercial
- Business Commercial
- Public / Institutional
- Park
- Open Space
- Utility / ROW
- Landfill

Source: City of Pittsburg, General Plan, December 2011.

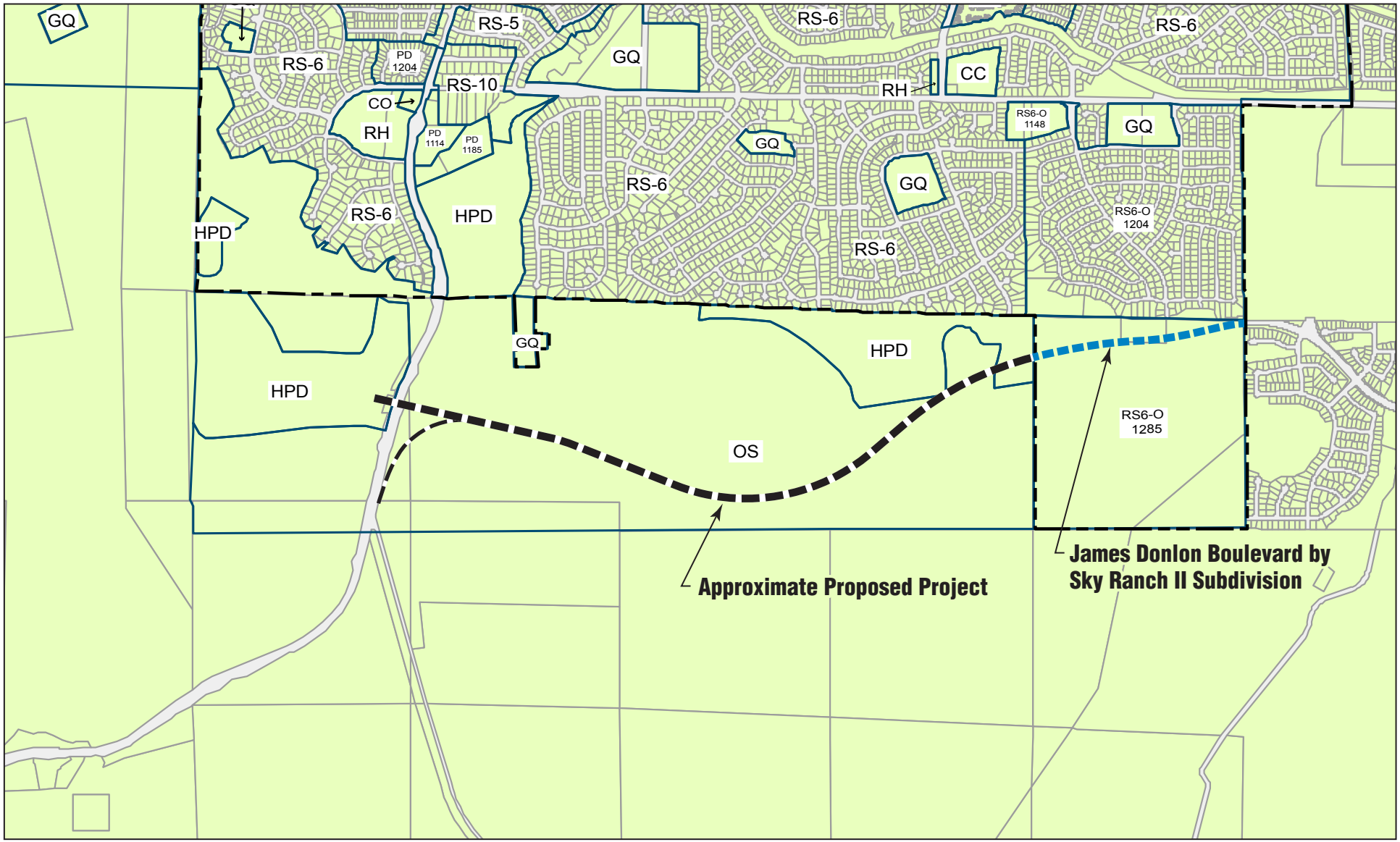
0 1/2 mile
APPROXIMATE

11/29/12 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Existing City Land Use Designations

Figure 4.2-3



LEGEND

CO	Commercial Office
OS	Open Space District
HPD	Hillside Planned Development
RS-6	Residential (6,000 square foot minimum lot size)
RS6-O	Residential (6,000 square foot minimum lot size, Limited Overlay)
RS-10	Residential (10,000 square foot minimum lot size)
RH	High Density Residential District
GQ	Government and Quasigovernment District
PD	Planned Development

not to scale

Source: City of Pittsburg, Zoning Map, June 2011.

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Existing City Pre-Zoning

11/29/12 JN 130944-18838 MAS

Figure 4.2-4

Cortese-Knox-Hertzberg Act

In California, the Cortese-Knox Local Government Reorganization Act of 1985 (which became operative on January 1, 1986) consolidated three major laws into a single, unified law. The three laws, which previously governed changes in the boundaries and organization of cities and special districts include:

- The Knox-Nisbet Act of 1963, which established local agency formation commissions (LAFCOs) with regulatory authority over local agency boundary changes.
- The District Reorganization Act of 1965 (DRA), which combined separate laws governing special district boundaries into a single law.
- The Municipal Organization Act of 1977 (MORGA), which consolidated various laws on city incorporation and annexation into one law.

Since 1963, when State law created LAFCO, commissions in each California County have encouraged the orderly formation of local government agencies, to preserve agricultural and open space land, and discourage urban sprawl.

In 2000, Speaker Robert Hertzberg introduced Assembly Bill (AB) 2838 to comprehensively revise the Cortese-Knox Act of 1985. AB 2838 incorporated many of the recommendations made by the Commission on Local Governance for the 21st Century. AB 2838 revisions resulted in the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000.

The Cortese-Knox-Hertzberg Act establishes procedures for organizational changes in local governments such as city incorporations, annexations to a city or special district, and city and special district consolidations. LAFCOs have numerous powers under this Act; however, the primary focus is on the local agency boundary changes. LAFCOs can approve or deny the following local agency boundary changes:

- Annexations: the addition of territory to a government entity;
- Incorporation: the creation of a city;
- Formation: the creation of a special district; and
- Transfer: the exchange of territory between two or more government entities.

LOCAL

City of Pittsburg General Plan

The City General Plan was prepared to comply with the requirements of California Government Codes Section 6300 *et seq*. The Government Code mandates that each California city and county have a comprehensive, long range, internally consistent plan for its future development. The plan must address seven topics (i.e., elements), including land use, circulation, housing, open space, conservation, safety, and noise. In addition to these required elements, the City General Plan addresses six additional topics: growth management, urban design, downtown, economic development, youth and, recreation and public facilities. The City General Plan defines a hierarchy of goals, policies, and implementation programs. Relevant City General Plan policies are referenced throughout this EIR in appropriate sections as they relate to specific environmental issue areas.

The City General Plan identifies the proposed roadway alignment as a proposed "Route of Regional Significance" and is mentioned in various City General Plan elements as goals and/or policies. The proposed James Donlon Boulevard Extension is referenced to as the Buchanan Bypass.

Policy 7-P-12 Continue to collect fees, plan and design for the future construction of Buchanan Bypass. Ensure preparation of a feasibility and environmental impact study to determine the precise alignment, costs, mitigation measures, and impacts on adjacent uses.

Goal 2-G-26 Encourage development as a means of funding the construction of Buchanan Bypass as an alternate route for regional through-traffic.

Policy 2-P-72 Pursue construction of the Buchanan Bypass, as designated in the General Plan Diagram, providing an alternative route for commuters traveling from Kirker Pass Road to destinations east of Pittsburg.

Policy 2-P-73: Allow Los Density Residential development in selected areas along Kirker Pass Road and other valley floors as appropriate, under the following criteria:

- Permanent greenbelt buffers be established to encompass: 1) the southerly 1/5 (approximately) of the Montreux property; and 2) the area south of the existing PG&E transmission corridor and south of the final alignment of the Buchanan Road Bypass, just east of Kirker Pass Road.

  The City will consider, in conjunction with subdivision applications on these properties and related environmental analysis, general plan and/or the transfer of lost development rights as a result of these greenbelts to other portions of these properties, while not increasing the overall number of units permitted on these properties.
- Natural topography be retained to the maximum extent feasible, and large-scale grading discouraged;
- No development on minor and major ridgelines (as identified in Figure 4-2), with residential construction on flatter natural slopes encouraged;
- Development designed and clustered so as to be minimally visible from Kirker Pass Road;
- Creeks and adjacent riparian habitat protected;
- An assessment of biological resources completed; and
- Be limited to a maximum density of 3.0 du/a.c.

Policy 2-P-107: Support permanent open space preservation of the Black Diamond Mines Regional Preserve. Retain remaining vacant acreage within the subarea as open space.

Policy 2-P-109: Ensure the rural character of the existing agricultural grazing lands is retained.

General Plan Land Use Designations

The proposed roadway would be constructed through an area that is under the County's jurisdiction, but within the City's Planning Area and Urban Limit Line (ULL) (refer to Measure P below). The subject properties have a City General Plan land use designation of Open Space, Low Density Residential and Hillside Low Density Residential.

Measure J and Measure P – Mutually Agreed Upon Urban Limit Line

On November 2, 2004, 71 percent of Contra Costa County voters approved Measure J, which provides for the renewal of the County's half-cent transportation sales tax for 25 more years beyond the original 2009 expiration date. Measure J approval assures funding for the 4th bore for the Caldecott Tunnel and the

widening of the State Route 4 (SR 4). Measure J also provides for a Growth Management Program with a voter-approved urban growth boundary. In each city jurisdiction, an Urban Limit Line (ULL) must be in place for the city to receive funding from the measure.

In response to Measure J, in November 2005, Pittsburg voters approved Measure P, which modified the previous ULL. As modified, certain land south of the previous ULL (established by the City in 2000) was added. The subject properties through which the proposed roadway would extend are within the new ULL.

Contra Costa County General Plan

The purpose of the Contra Costa County General Plan, dated January 2005, is to express broad goals and policies, and specific implementation measures that guide decisions regarding future growth, development, and conservation of resources through the year 2020. The goals, policies and implementation programs contained in this plan are aimed at defining and preserving the County's "quality of life." The elements and chapters contained in the County General Plan are intended to provide objective, principals and standards to decision-making bodies in the County, as well as numerous other public agencies, that make decisions regarding development of private and public lands and the locations and extent of infrastructure improvements (e.g., sewer, roadways, etc.).

General Plan Land Use Designation

The subject properties have a County General Plan land use designation of Agricultural Lands.

East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP)

The HCP/NCCP is intended to provide an effective framework to protect natural resources in eastern Contra Costa County, while improving and streamlining the environmental permitting process for impacts on endangered species. The HCP/NCCP allows Contra Costa County permittees, which includes the City of Pittsburg, to control endangered species permitting for activities and projects in the region that they perform or approve. The HCP/NCCP also provides for comprehensive species, wetlands, and ecosystem conservation and contributes to the recovery of endangered species in northern California.

The HCP/NCCP identifies the proposed project as a "covered activity" as a rural road infrastructure project (HCP/NCCP Section 2.3.2, page 2-18). As a covered activity, the proposed project must comply with HCP/NCCP requirements. In addition, the HCP/NCCP has special requirements applicable to the project as a rural infrastructure project and as a planned activity outside of the HCP/NCCP defined Urban Development Area.

Contra Costa Countywide Comprehensive Transportation Plan (CTP)

The CTP is a 20-year plan prepared by the Contra Costa Transportation Authority (CCTA), which serves as the long-range transportation planning document for the County. The CCTA adopted its first CTP in 1995. This first CTP established a countywide vision and set of goals, strategies and projects. In 1997, the CCTA reaffirmed the policies set forth in the 1995 CTP. The 2000 Update was the first major update to the CTP since the initial 1995 adoption.

The CTP 2004 Update identifies the CCTA's vision for Contra Costa County, goals and strategies for achieving that vision, and future transportation priorities. It reflects comments received from Regional Transportation Planning Committees (RTPCs) — representing the eastern, western, central and southwestern parts of Contra Costa County—and other stakeholders. The CTP 2004 Update also incorporates the recommendations of the Action Plans for Routes of Regional Significance prepared in

2000, which were not updated as part of the CTP. The CTP 2004 Update is intended to help carry out the CCTA's four goals:

- Reduce future congestion on highways and arterial roads
- Manage the impacts of growth to sustain Contra Costa County's economy and preserve its environment
- Expand travel choices beyond the single-occupant vehicle
- Maintain the transportation system

Measure C, which was passed by voters in 1988, established a half-cent sales tax to fund transportation improvements and a process for growth management and transportation planning. The Measure C Extension (approved as Measure J in November 2004) continued the half-cent sales tax through 2034, a 25 year extension beyond the original 2009 expiration date, responding to increased congestion and loss of mobility within the County.

Contra Costa Transportation Authority Congestion Management Plan

As the Congestion Management Agency (CMA) for Contra Costa County, the CCTA has the responsibility under State law, to prepare and update a Congestion Management Program. As required by State law (California Government Code Section 65088 et seq.), the program contains five elements:

- Traffic Level of Service (LOS) standards applied to a designated system of State highways and principal arterial streets
- A performance element that includes performance measures to evaluate current and future multi-modal system performance for the movement of people and goods
- A seven-year capital improvement program (CIP) whose projects will maintain or improve the performance of the multimodal system for the movement of people and goods
- A program to analyze the impacts of land use decisions made by local jurisdictions on regional transportation systems
- A travel demand element that promotes transportation alternatives to the single-occupant vehicle, including provision for infill opportunity zones

On November 16, 2005, the CMA adopted the 2005 CMP Update. The 2005 Update focused on updating the required seven-year capital improvement program, but it also responded to the passage of Measure J by Contra Costa voters in 2004, the adoption of Metropolitan Transportation Commission's Transportation 2030 Plan, and updates to the Authority's travel demand model.

4.2.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact on land use and planning if it:

- Physically divides an established community
- Conflicts 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

- Conflicts with any applicable habitat conservation plan or natural community plan

AREAS OF NO PROJECT IMPACT

The following impacts are either not applicable to the project or are not reasonably foreseeable:

- Physically divides an established community

The project site is located outside of the southern edge of the City, and is within an unincorporated area of Contra Costa County. The proposed project would extend James Donlon Boulevard from the approved Sky Ranch II Subdivision to Kirker Pass Road. The proposed project would redistribute existing traffic patterns, thus alleviating congestion on Buchanan Road, which currently receives the majority of east-west traffic between the City of Concord and the City of Antioch.

The project area is currently designated Agriculture by the County and Utility/Right-of-Way, Hillside Low Density Residential, and Open Space by the City. The Existing land use is agriculture, in the form of an existing cattle ranch. As outlined in Section 3.3.1, *Bridges and Culverts*, and Section 3.3.2, *Wildlife Movement Corridors*, the proposed project would provide culverts of various sizes that would accommodate cattle ranch operations to safely access areas south of the proposed James Donlon Boulevard extension. There are no other established communities or neighborhoods within the project area. Therefore, the proposed project would not divide an established community and thus no impact would occur as a result of this proposed project.

- Conflict with any applicable habitat conservation plan or natural community plan

The East Contra Costa County HCP/NCCP was developed to minimize and mitigate impacts to plant and wildlife resulting from the loss of open space projected to occur in eastern Contra Costa County. The City adopted the HCP/NCCP in 2007. Although the proposed project (formerly known as Buchanan Bypass) is outside the HCP/NCCP's Urban Development Area, it is a covered activity (approved rural infrastructure project). The proposed project would be in compliance with the HCP/NCCP, per the proposed project design as well as implementation of Mitigation Measures BIO1 through BIO9. Payment of HCP/NCCP fees and implementation of the HCP/NCCP's Conservation and Species-Level Measures would ensure the project's consistency with the plan. No impact would result.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Consistency with Relevant Planning Policies

♦ ***THE PROPOSED PROJECT WOULD CONFLICT WITH AN 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.***

Level of Significance: Less Than Significant Impact.

Impact Analysis:

City of Pittsburg General Plan. The City General Plan is the primary policy-planning document that guides development in the City. The proposed roadway alignment is included in the City General Plan and shown in four General Plan Land Use Element figures (General Plan Figure 2-3, *Planning*

Boundaries, Figure 2-4, *Planning Subareas*, Figure 2-4h, *Woodlands*, and Figure 2-4o, *Black Diamond*). Table 4.2-1, *Consistency with City of Pittsburg General Plan*, provides a detailed analysis of the proposed project's consistency with the goals and policies within the Land Use and Growth Management Elements of the General Plan. To simplify the consistency analysis, City goals and policies that are addressed in other sections of this EIR (Sections 4.3, *Aesthetics*, through Section 4.14, *Utilities and Service Systems*) are not included.

Table 4.2-1
Consistency with City of Pittsburg General Plan

Objectives and Policies	Consistency of Proposed Project
Land Use Element	
Goal 2-G-26: Encourage development as a means of funding the construction of Buchanan Bypass as an alternative route for regional through-traffic.	Consistent. James Donlon Boulevard, within the approved Sky Ranch II subdivision (not part of this proposed project), would be financed by that approved subdivision.
Policy 2-P-72: Pursue construction of the Buchanan Bypass, as designated in the General Plan Diagram, providing an alternative route for commuters traveling from Kirker Pass Road to destinations east of Pittsburg.	Consistent. The City is actively pursuing the development of the proposed roadway alignment, which would provide an alternative route for commuters traveling from Kirker Pass Road to destinations east of the City. The City is currently acting as the lead agency under CEQA for the proposed project's environmental review process. In addition, the City is facilitating the roadway's design and eventual construction.
Policy 2-P-73: Allow Los Density Residential development in selected areas along Kirker Pass Road and other valley floors as appropriate, under the following criteria: • Permanent greenbelt buffers be established to encompass: 1) the southerly 1/5 (approximately) of the Montreux property; and 2) the area south of the existing PG&E transmission corridor and south of the final alignment of the Buchanan Road Bypass, just east of Kirker Pass Road. The City will consider, in conjunction with subdivision applications on these properties and related environmental analysis, general plan and/or the transfer of lost development rights as a result of these greenbelts to other portions of these properties, while not increasing the overall number of units permitted on these properties. • Natural topography be retained to the maximum extent feasible, and large-scale grading discourages; • No development on minor and major ridgelines (as identified in Figure 4-2), with residential construction on flatter natural slopes encouraged; • Development designed and clustered so as to be minimally visible from Kirker Pass Road; • Creeks and adjacent riparian habitat protected; • As assessment of biological resources completed; and • Be limited to a maximum density of 3.0 du/a.c.	Consistent. The proposed project does not include the construction of residential structures. The proposed project includes a General Plan Amendment to change the land use designations for the proposed project properties from Utility/Right-of-Way, Hillside Low Density Residential, and Open Space to Open Space only. The proposed project also includes pre-zoning of the proposed project properties from Hillside Planned Development (HSD) District and Open Space (OS) District to Open Space (OS) District, with the option to provide an Agricultural Preserve Overlay District. The proposed project would not be located along a minor or major ridgeline (refer to Section 4.3, *Aesthetics*). The proposed project would be designed to protect biological resources to the greatest extent feasible (refer to Section 4.6, *Biological Resources*). The proposed project alignment has been designed to reduce the total roadway length, and includes buttresses that allow for steeper slopes and, thus, less grading (refer to Section 4.8, *Geology and Soils*).
Policy 2-P-107: Support permanent open space preservation of the Black Diamond Mines Regional Preserve. Retain remaining vacant acreage within the subarea as open space.	Consistent. The proposed project includes a general plan amendment to change the land use designations for the proposed project properties from Utility/Right-of-Way, Hillside Low Density Residential, and Open Space to Open Space

Objectives and Policies	Consistency of Proposed Project
	only. The proposed project also includes pre-zoning of the proposed project properties from Hillside Planned Development (HSD) District and Open Space (OS) District to Open Space (OS) District, with the option to provide an Agricultural Preserve Overlay District.
Policy 2-P-109: Ensure the rural character of the existing agricultural grazing lands is retained.	Consistent. The proposed project includes a general plan amendment to change the land use designations for the proposed project properties from Utility/Right-of-Way, Hillside Low Density Residential, and Open Space to Open Space only. The proposed project also includes pre-zoning of the proposed project properties from Hillside Planned Development (HSD) District and Open Space (OS) District to Open Space (OS) District, with the option to provide an Agricultural Preserve Overlay District. In addition, refer to Section 4.4, *Agriculture and Forestry Resources*, for a discussion on agricultural impacts as well and Section 4.3, *Aesthetics*, regarding any changes in the visual character of the area.
Growth Management Element	
Goal 3-G-I: Manage the City's growth to balance development of housing options and job opportunities, protection of open space and habitat areas, construction of transportation improvements, and preservation of high quality public facilities.	Consistent. The proposed roadway is one of the City's main transportation improvement goals.
Policy 3-P-3: Work with Contra Costa Transportation Authority and TRANSPLAN (the transportation planning committee for East County) to develop and implement Actions for Routes of Regional Significance, as designated in [General Plan] Figure 3-1.	Consistent. The proposed roadway is mapped on General Plan Figure 3-1 as a route of regional significance. The City is currently working with CCTA to implement the proposed project.

Contra Costa County General Plan. The Contra Costa County General Plan is the primary policy-planning document that guides development within the County. The proposed roadway alignment is shown in one County General Plan figure (Figure 4-3, *Routes of Regional Significance*). The proposed project is not identified in any of the goal or policies in the County General Plan. Table 4.2-2, *Consistency with Contra Costa General County General Plan*, provides a detailed analysis of the proposed project's consistency with the goals and policies of the County General Plan. To simplify the consistency analysis, County goals and policies that are addressed in other sections of this EIR (Sections 4.3, *Aesthetics*, through Section 4.14, *Utilities and Service Systems*) are not included.

Table 4.2-2
Consistency with Contra Costa County General Plan

Objectives and Policies	Consistency of Proposed Project
Land Use Element	
Goal 3-A: To coordinate land use with circulation, development of other infrastructure facilities, and protection of agriculture and open space, and allow growth and maintenance of the County's quality of life. In such environment all residential, commercial, industrial, recreational and agricultural activities may take place in safety, harmony, and mutual advantage.	Consistent. The proposed project includes a general plan amendment to change the City land use designations for the proposed project properties from Utility/Right-of-Way, Hillside Low Density Residential, and Open Space to Open Space only. The proposed project also includes pre-zoning the proposed project properties from Hillside Planned Development (HSD) District and Open Space (OS) District to Open Space (OS) District, with the option to provide an Agricultural Preserve Overlay District. These changes are compatible with maintaining the County Agricultural Lands land use designation and the A-4 (Agricultural Preserve) zoning. In addition, refer to Section 4.4, *Agriculture and Forestry Resources*, for a discussion on agricultural impacts as well and Section 4.3, *Aesthetics*, regarding any changes in the visual character of the area.
Goal 3-G: To discourage development on vacant rural lands outside of planned areas which is not related to agriculture, mineral extraction, wind energy or other appropriate rural uses; discourage subdivision down to minimum parcel size of rural lands that are within, or accessible only through, geologically unstable areas; and to protect open hillsides and significant ridgelines.	Consistent. The proposed project does not include the construction of residential structures. The proposed project includes a general plan amendment to change the land use designations for the proposed project properties from Utility/Right-of-Way, Hillside Low Density Residential, and Open Space to Open Space only. The proposed project also includes pre-zoning of the proposed project propertied from Hillside Planned Development (HSD) District and Open Space (OS) District to Open Space (OS) District, with the option to provide an Agricultural Preserve Overlay District. The proposed project would not be located along a County designated scenic ridge; however, it is located 0.3 mile north of a scenic ridge (refer to Section 4.3, *Aesthetics*). The proposed project would be designed to project biological resources to the greatest extent feasible (refer to Section 4.6, *Biological Resources*). The proposed project alignment has been designed to reduce the total roadway length, and includes buttresses that allow for steeper slopes and, thus, less grading (refer to Section 4.8, *Geology and Soils*).

As indicated in Table 4.2-1, the proposed project would not conflict with any applicable goals and policies of the City's General Plan. As shown in Table 4.2-2, the proposed project would be consistent with the County General Plan.

Contra Costa Local Agency Formation Commission (LAFCO). The Contra Costa LAFCO is required to consider a variety of factors when evaluating a proposed boundary change including, but not limited to, the project's potential impacts on agricultural land and open space, the provision of municipal services and infrastructure to the project site, and the timely and available supply of water. The factors relating to boundary changes are contained in Section 56668 of the Cortese-Knox-Hertzberg Act. These factors include, but are not limited to, how proposals for boundary changes conform to applicable City and County general plans, maintaining the physical and economic integrity of agricultural lands, the need for organized community services, and timely availability of water supplies.

The Cortese-Knox-Hertzberg Act also provides guidance of proposed LAFCO actions (i.e., annexation) when the project site is considered "prime agricultural land" pursuant to the definition in Section 56064, while Section 56856.5, provides guidance of when the project site is located on lands subject to Williamson Act contracts.

Cortese-Knox-Hertzberg Act Section 56064

The definition of "prime agricultural land" as defined by the Cortese-Knox-Hertzberg Act is as follows:

> *56064. "Prime agricultural land" means an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets any of the following qualifications:*
> *(a) Land that qualifies, if irrigated, for rating as class I or class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.*
> *(b) Land that qualifies for rating 80 through 100 Storie Index Rating.*
> *(c) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.*
> *(d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars ($400) per acre.*
> *(e) Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars ($400) per acre for three of the previous five calendar years.*

The Rincon Clay Loam, 2 to 9 Percent Slopes, has a Storie Index Rating of grade one – excellent, which is a Storie Index Rating between 80 and 100. Construction activities on this soil type would include the improvements to the existing Kirker Pass Road (refer to Figure 4.8-2, *Soils Map*). All other soils within the project area have Storie Index Ratings of 79 or less. Two soils types, Rincon Clay Loam, 2 to 9 Percent Slopes, and Capay Clay, 2 to 9 percent slopes, are classified as having an Irrigated Capability Class 2 (NRCS 2013). No construction activities would occur on the Capay Clay, while construction activities on the Rincon Clay Loam would occur only to facilitate the improvements along Kirker Pass Road (refer to Figure 4.8-2, *Soils Map*).

The proposed project site is used as an existing cattle ranch. Therefore, the properties to be annexed into the City are considered "prime agricultural land" under the Cortese-Knox-Hertzberg Act for the proposed LAFCO action (i.e., annexation). The existing ranch operations would continue after the proposed annexation and roadway construction. A minimum of one culvert would be provided to allow safe passage of the cattle from the north side of the proposed James Donlon Boulevard to the south side.

Cortese-Knox-Hertzberg Act Section 56856.5

The Cortese-Knox-Hertzberg Act provides the following guidance in association with the annexation of land covered under Williamson Act (refer to Section 4.4, *Agriculture and Forestry Resources*, for a detailed discussion of agricultural resources and impacts):

56856.5.(a) The commission shall not approve or conditionally approve a change of organization or reorganization that would result in the annexation to a city or special district of territory that is subject to a contract entered into pursuant to the California Land Conservation Act of 1965 (Chapter 7 (commencing with Section 51200) of Part 1 of Division 1), other than a contract entered into pursuant to Article 7 (commencing with Section 51296) of Chapter 7 of Part 1 of Division 1, if that city or special district provides or would provide facilities or services related to sewers, nonagricultural water, or streets and roads to the territory, unless these facilities or services benefit land uses that are allowed under the contract.

(b) This section shall not be construed to preclude the annexation of territory for the purpose of using other facilities or services provided by the agency that benefit land uses allowable under the contract.

(c) Notwithstanding subdivision (a), the commission may nevertheless approve a change of organization or reorganization if it finds any of the following:

(1) The city or county that would administer the contract after annexation has adopted policies and feasible implementation measures applicable to the subject territory ensuring the continuation of agricultural use and other uses allowable under the contract on a long-term basis.

(2) The change of organization or reorganization encourages and provides planned, well-ordered, and efficient urban development patterns that include appropriate consideration of the preservation of open-space lands within those urban development patterns.

(3) The change of organization or reorganization is necessary to provide services to planned, well-ordered, and efficient urban development patterns that include appropriate consideration of the preservation of open-space lands within those urban development patterns.

(d) This section shall not apply to territory subject to a contract for which either of the following applies:

(1) A notice of nonrenewal has been served pursuant to Section 51245, if the annexing agency agrees that no services will actually be provided by it for use during the remaining life of the contract for land uses or activities not allowed under the contract.

(2) A tentative cancellation has been approved pursuant to Section 51282.

Two of the parcels within the project area, APNs 089-050-056 and 089-020-011, are currently under Williamson Act contracts. APN 089-020-011 is approximately 7.04 acres and is currently under a Williamson Act Non-Renewal contract, thus the existing contract will expire at the end of the contract terms. APN 089-050-056 totals approximately 466.8 acres, east of Kirker Pass Road, and 3.7 acres, west of Kirker Pass Road, and is under Williamson Act Non-Prime Agriculture Land contract (California Department of Conservation, 2012). Thus, the area east of Kirker Pass Road, for these two parcels, totals 475 acres and is currently used for cattle ranch operations. Approximately 70 acres of the overall 475-acre area would be developed with the proposed roadway alignment. The area within the proposed James Donlon Boulevard extension would be acquired by the City, which would trigger the cancellation of the

Williamson Act contract on the approximately 70 acres utilized by the proposed project. Pursuant to Government Code Section 51243.5(a), the City would administer the Williamson Act contract upon annexation for areas outside the proposed James Donlon Boulevard right-of-way.

The proposed project would amend the City General Plan land use designation on APNs 089-050-056 and 089-020-011 from Open Space and Hillside Low Density Residential to Open Space. In addition, the proposed project would pre-zone the two privately-owned parcels from Hillside Planned Development (HSD) District and Open Space (OS) District to Open Space (OS) District, with the option to establish an Agricultural Preserve Overlay District to support the land under Williamson Act contract. The existing ranch operations would continue and a minimum of one culvert would be provided to allow safe passage of the cattle from the north side of the proposed James Donlon Boulevard to the south side.

Access to the proposed James Donlon Boulevard extension would be provided at Kirker Pass Road on the west and the Sky Ranch II development, including Metcalf Street, Ventura Drive, and Sommersville Road on the east. No access points would be provided to the existing cattle ranch property from the proposed project; therefore, the project would provide facilities *through* the agricultural land but not *to* the land.

Electrical utilities would be extended along the proposed James Donlon Boulevard extension to facilitate the required roadway lighting and the signal at the Kirker Pass Road/James Donlon Boulevard intersection. No electrical services would be extended to the existing cattle ranch property beyond what is needed for roadway lighting. Water needs during construction would be accommodated by trucking water to the project site. No irrigation would be required for the revegetation plan, therefore no water supply is needed during the operation of the proposed James Donlon Boulevard, and no water services would be extended as a result of this proposed project. No other services or utilities would be extended as a result of the proposed project (refer to Section 4.14, *Utilities and Service Systems*, for further discussion).

Therefore, the City would not provide facilities or services related to sewers, nonagricultural water, or streets and roads to the territory (APNs 089-050-056 and 089-020-011). The City would implement general plan designations and pre-zoning districts to ensure that the agricultural land would remain in perpetuity. Thus, the proposed project would be consistent with relevant Contra Costa County LAFCO goals and policies and the guidance provided in the Cortese-Knox-Hertzberg Act.

LAFCO Commissioner Handbook Policies and Standards (Excerpts)

Section 2.1 of the Contra Costa County LAFCO Commissioner Handbook outlines policies and standards that LAFCO follows when making decisions on a proposed LAFCO action (i.e., annexation).

> *The statutory goals of the LAFCO include the promotion of orderly growth and development by determining logical local boundaries [§56001], preservation of open space by encouraging development of vacant land within cities before annexation of vacant land adjacent to cities [§56377(b)], and preservation of prime agricultural land by guiding development away from presently undeveloped prime agricultural lands [§56377(a)].*

The proposed project would involve annexing agricultural lands considered prime as defined by Cortese-Knox-Hertzberg Act Section 56064; however, as stated above, the City would amend the City General Plan land use designation on APNs 089-050-056 and 089-020-011 from Open Space and Hillside Low Density Residential to Open Space and would pre-zone the two privately-owned parcels from Hillside Planned Development (HSD) District and Open Space (OS) District to Open Space (OS) District, with the option to establish an Agricultural Preserve Overlay District to support the land under Williamson Act

contract. No access to the proposed James Donlon Boulevard extension would occur from the existing cattle ranch properties. Refer to the discussion above regarding the Cortese-Knox-Hertzberg Act Sections 56064 and 56856.5 for further details regarding agricultural land.

> *The goals of the Contra Costa Local Agency Formation Commission include promotion of orderly growth and development by determining logical local agency boundaries [§56001], preservation of open space by encouraging development of vacant land within cities before annexation of vacant land adjacent to cities [§56377(b)], and the preservation of prime agricultural land by guiding development away from presently-undeveloped prime agricultural lands [§56377(a)].*

The proposed project would ensure the preservation of open space and agricultural lands with the general plan amendment and the pre-zone, along with the continued operation of the existing cattle ranch, as discussed above. The proposed James Donlon Boulevard extension is identified within the County and the City General Plans. As stated in Section 3.4, *Project Objectives*, the proposed project would provide a secondary access route for existing, planned and future residential developments in southeastern Pittsburg and southwest Antioch; would relieve traffic congestion on Buchanan Road; and would reduce traffic volumes adjacent to Buchanan Park, Highlands Elementary School, and residences directly accessing Buchanan Road. In addition, no access to the proposed James Donlon Boulevard extension would occur from the existing cattle ranch property. Refer to the discussion above regarding the Cortese-Knox-Hertzberg Act Sections 56064 and 56856.5 for further details.

> *Territory to be annexed by a city shall be pre-zoned by the city. A map submitted by the proponents should show all zoning designations for the territory to be annexed.*

As stated above, the City would pre-zone the two privately-owned parcels from Hillside Planned Development (HSD) District and Open Space (OS) District to Open Space (OS) District, with the option to establish an Agricultural Preserve Overlay District to support the land under Williamson Act contract. Thus, the proposed project would be consistent with relevant Contra Costa County LAFCO policies and standards goals and policies provided in the Commissioner Handbook.

Mitigation Measures: No mitigation required.

Level of Significance: Less Than Significant Impact.

4.3 AESTHETICS

4.3.1 ENVIRONMENTAL SETTING

EXISTING VISUAL CHARACTER/QUALITY

The project area is situated within hilly terrain (with steeper slopes in the southern portions of the project area) associated with the Diablo Mountains. The project site generally consists of undeveloped ranching (i.e., cattle grazing) uses. Natural features include grass-covered hillsides and narrow ravines and creeks with associated riparian vegetation. The hills provide a visual backdrop and contrast to urbanized portions of the suburban communities to the north. Scenic visual resources within the County (in the project area) include scenic ridges, hillsides, and rock outcroppings. The County also has many smaller, localized scenic resources in the project area (such as isolated hilltops, rock outcroppings, mature stands of trees, and other natural features). One designated scenic ridgeway is located approximately 0.3 mile south of the project site and trends in an east/west direction. The County also has scenic route designations, which include Kirker Pass Road and Nortonville Road within and adjacent to the proposed project.

Topography within the project area ranges from gentle slopes in the northern portions to steeper grades in the western and southern portions of the area. Elevations range from approximately 200 to 620 feet above mean sea level. A total of six ephemeral and intermittent streams traverse the project area (generally flowing north toward the New York Slough and the San Joaquin River, which flow into Suisun Bay). Kirker Creek, in the western portion of the project site, is the largest of these creeks. Vegetation within the project area is composed of primarily non-native grassland, oak savanna, and riparian vegetation in streambeds. Rock outcroppings occur on hilltops in the vicinity of the project area. On-site structures include an existing ranch and accessory buildings (e.g., barn and corrals) as well as PG&E transmission towers that cross the proposed project roadway alignment.

Land uses immediately surrounding the proposed project generally include undeveloped lands associated with agriculture (cattle grazing uses). The Black Diamond Mines Regional Preserve is located to the south of the project site. North and east of the project site, developed land uses consist of residential land uses (single-family) situated within the foothills in the City of Pittsburg.

KEY VIEWS

For the purposes of this analysis, a Key View is an area (in this case, the project site) that can be seen from a particular public location. Characteristics for each Key View are defined within foreground, middleground, and/or background views. Characteristics located within foreground views are located at close range and tend to dominate the view. Characteristics located within middleground views are distinguishable, yet not as sharp as those characteristics located in the foreground views. Features located within the background views have few details and distinctions in landform and surface features. The emphasis of background views is an outline or edge. Silhouettes and ridges of one landmass against another are the conspicuous visual aspects of the background, with the skyline serving as the strongest line. Objects in the background eventually fade to obscurity with increasing distance.

RBF staff visited the project site in June 2012 to take photographs and make observations from Key Views that were selected in consultation with City staff; refer to Figure 4.3-1, *Key View Locations*, which illustrates the locations of the Key Views selected. The camera locations were recorded utilizing Global Positioning System (GPS) equipment. A Fuji G-617 Panoramic camera with a 1:8/105 millimeter lens was selected as the primary photographic source, as it yields an accurate representation of human visual perception. Backup photographs were also taken using a Nikon D1X digital camera with a fixed 50 millimeter lens.

Source: RBF Consulting (February 2012)

not to scale

11/29/12 JN 130944-18652 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View Locations

Figure 4.3-1

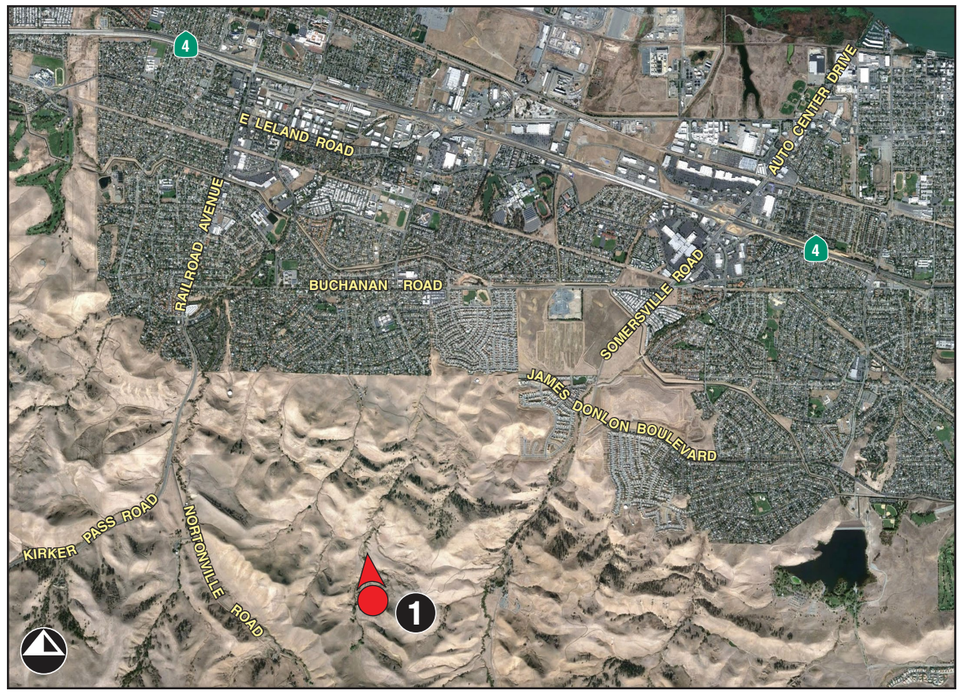
Seven Key Views were selected for this analysis. Key Views 1, 2, and 3 were selected to depict both potential impacts to scenic views and vistas and character/quality; Key Views 4 and 5 were chosen to depict potential impacts to County designated scenic corridors (Kirker Pass Road and Nortonville Road) and character/quality of the project area; and Key Views 6 and 7 were selected to depict potential impacts to character/quality. The following describes the existing character of the site and its surroundings from Key Views 1 through 7.

Key View 1. As described above, views from this Key View are afforded to the project site from Black Diamond Mines Regional Preserve; refer to Figure 4.3-2, *Key View 1 Existing Condition*. Foreground and middleground views consist of undeveloped land and grazing uses. Unimproved roads, creeks, and sparse trees and grasses are visible. Background views to the developed uses (associated with the City of Pittsburg) are visible. Designated visual resources afforded from this Key View include hillsides and mature strands of trees. Overall, the varying topography and lighter colored vegetation in the foreground and middleground contrast with the darker hued and relatively flat background views of developed uses, creating a high quality scenic view.

Key View 2. This Key View encompasses views from the Black Diamond Mines Regional Preserve; refer to Figure 4.3-3, *Key View 2 Existing Condition*. Foreground and middleground views consist of undeveloped land and grazing uses. Unimproved roads, sparse trees and grasses, rock outcroppings, and overhead transmission lines are visible. Background views to the developed uses (associated with the City of Pittsburg) are visible. Designated visual resources afforded from this Key View include hillsides, rock outcroppings, and mature strands of trees. Overall, the varying topography and lighter colored vegetation in the foreground and middleground contrast with the darker hued and relatively flat background views of developed uses, creating a high quality scenic view.

Key View 3. Views from this Key View are afforded to the project site from Highlands Ranch Park; refer to Figure 4.3-4, *Key View 3 Existing Condition*. This Key View represents typical long-range views of the project site in the City, as seen from public areas. Foreground views include relatively flat topography, ornamental landscaping/turf, recreational uses and single family residential dwelling units. Middleground and background views encompass undeveloped land, grasses and sparse trees, varying topography, and overhead transmission lines. Designated visual resources afforded from this Key View include one designated scenic ridgeway, hillsides, rock outcroppings, and mature strands of trees. The visible contrast of the topography and landscaping between foreground and middleground views allow for moderately high visual quality.

Key View 4. This Key View is located along Kirker Pass Road, to the north of the project site, and represents views from motorists traveling along this County designated scenic route; refer to Figure 4.3-5, *Key View 4 Existing Condition*. Foreground and middleground views include the four-lane Kirker Pass Road, grasses and sparse trees, rolling hills, fencing, and overhead power lines. Background views are limited as a result of topographic conditions. Designated visual resources afforded from this Key View include hillsides, mature strands of trees, and riparian vegetation associated with Kirker Creek. The overall visual quality from this Key View is moderately high.



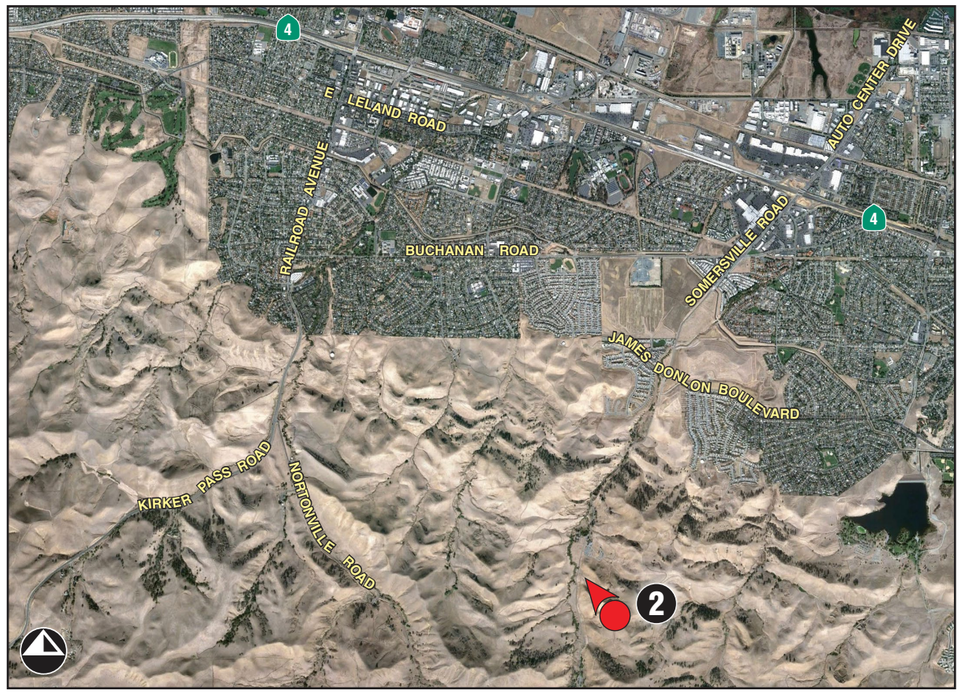
Direction of Photo
Key View Location
1 Key View Number

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 1 Existing Condition

Figure 4.3-2

11/29/12 JN 130944-18652 MAS



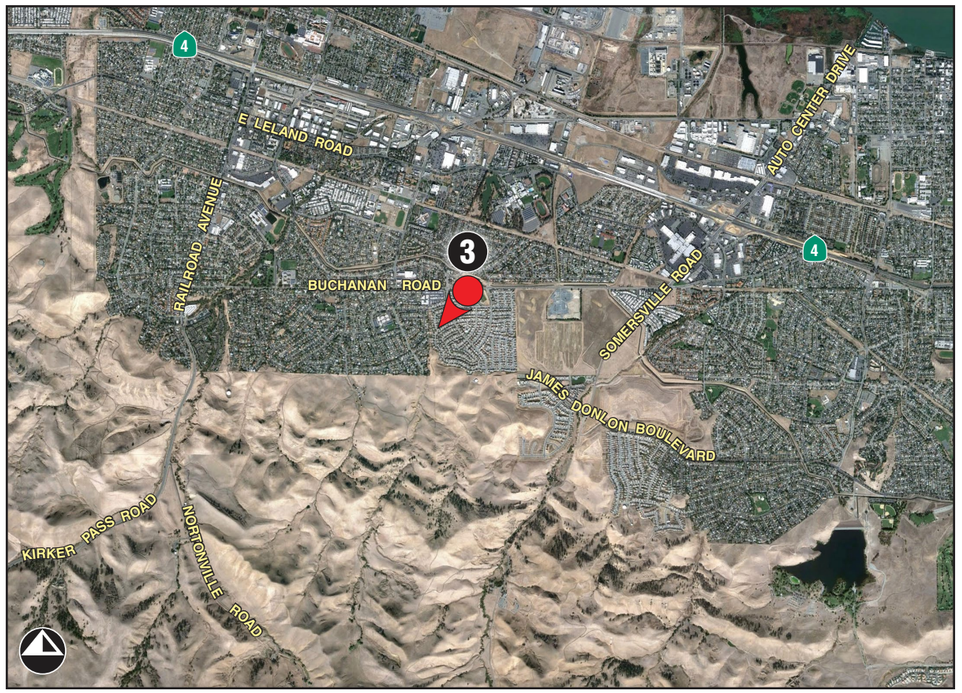
Direction of Photo
Key View Location
2 Key View Number

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 2 Existing Condition

Exhibit 4.3-3

11/29/12 JN 130944-18652 MAS



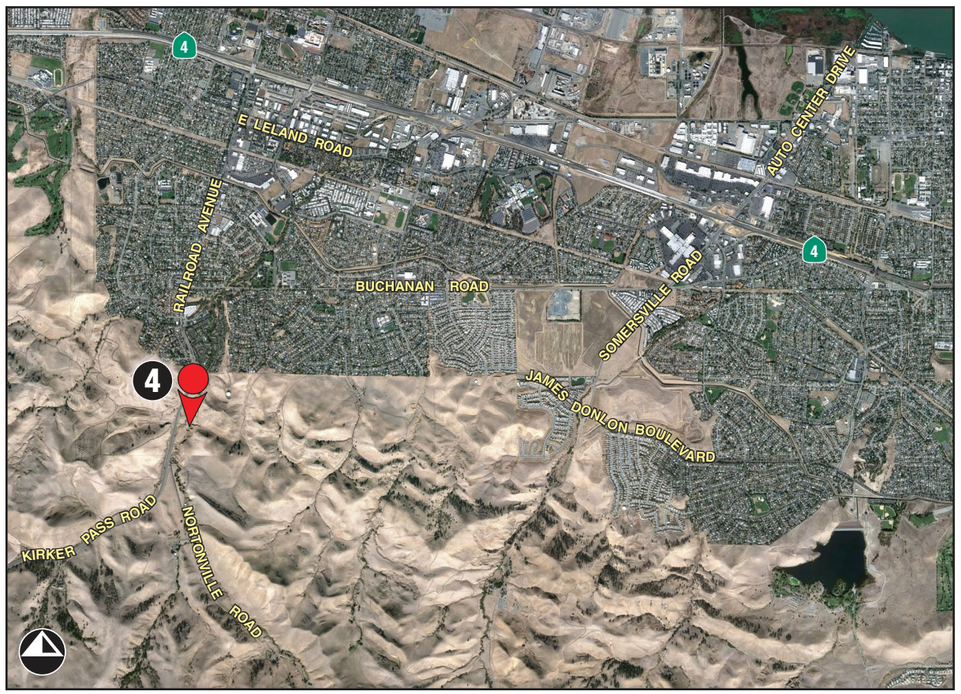
Direction of Photo
Key View Location
3 Key View Number

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 3 Existing Condition

Figure 4.3-4

11/29/12 JN 130944-18652 MAS



Direction of Photo
Key View Location

4 Key View Number

11/29/12 JN 130944-18652 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 4 Existing Condition

Figure 4.3-5

Key View 5. This Key View is located along Kirker Pass Road, to the south of the project site, and represents views from motorists traveling along this County designated scenic route; refer to Figure 4.3-6, *Key View 5 Existing Condition*. Foreground and middleground views include the four-lane Kirker Pass Road, the two-lane Nortonville Road, grasses, rolling hills, and overhead power lines. Some riparian vegetation along Kirker Creek is also visible in middleground views. Background views are limited as a result of topographic conditions. Designated visual resources afforded from this Key View include hillsides, mature strands of trees, and riparian vegetation associated with Kirker Creek. The overall visual quality from this Key View is moderate.

Key View 6. This Key View is located along Suzanne Drive, looking south toward the proposed project, and represents the overall character/quality of the project area, as may be seen by the surrounding community to the north; refer to Figure 4.3-7, *Key View 6 Existing Condition*. Foreground views encompass ranching uses, an unimproved roadway, and grasses. Middleground views include rolling hills and overhead transmission lines. Background views are limited as a result of the existing topographic conditions. Views of grasses and sparse trees are afforded throughout this view.

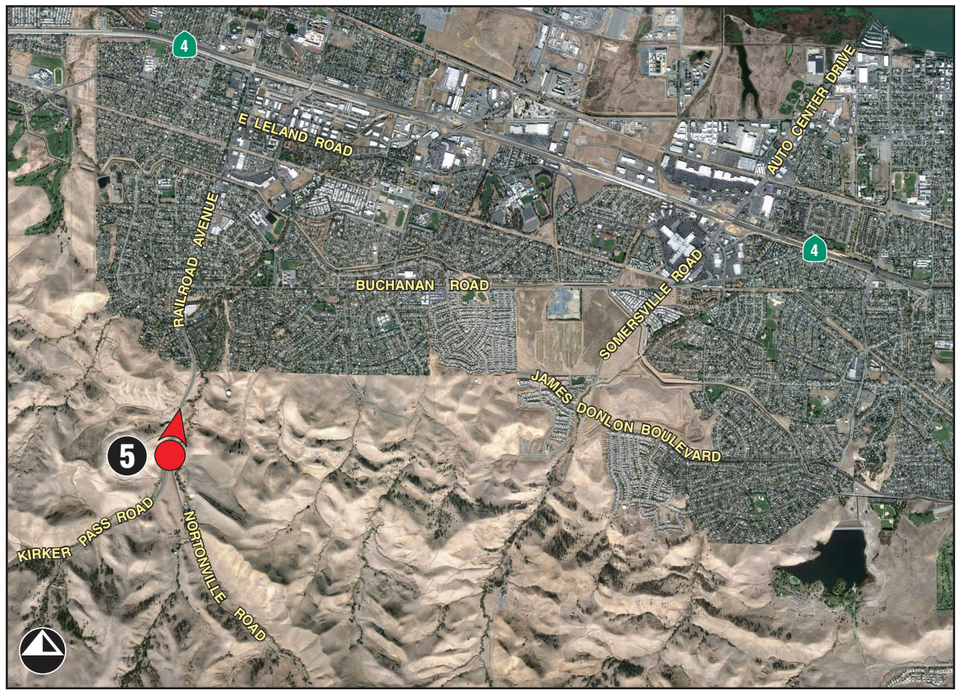
Key View 7. This Key View represents motorists views traveling eastbound on SR-4, looking southeast toward the project site; refer to Figure 4.3-8, *Key View 7 Existing Condition*. Foreground views include relatively flat topography, with grasses, shrubs, and trees. Middleground views include trees, grasses, and overhead power lines. Views to other development in the middleground views are limited as a result of existing vegetation. Background views to rolling hills and ridgelines associated with the Mount Diablo Range are afforded.

SCENIC VISTAS

A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. The project site is located in the foothills of the Mount Diablo Range (to the south of the City of Pittsburg) and afford views of designated scenic resources (scenic ridges, hillsides, rock outcroppings, mature strands of trees, and other natural resources). Views of the foothills (including a County-designated scenic ridgeway located south of the project site) are available from most areas in the City and provide a scenic backdrop.

Publicly accessible areas that would have expansive views to the foothills and designated Ridgeway (and that are located within the viewshed[1] of the project site) would include views within Black Diamond Mines Regional Preserve (located approximately 0.50 mile southeast of the project site), and Highlands Ranch Park (located approximately 0.46 mile northeast of the project site). As previously noted, of the seven selected Key Views, Key Views 1, 2, and 3 were selected to depict potential impacts to scenic views and vistas.

[1] For the purpose of this analysis, a "viewshed" is defined as all of the surface areas visible from the project site. Typical obstructions that limit the proposed project's viewshed include topography, structures, and vegetation (particularly trees).



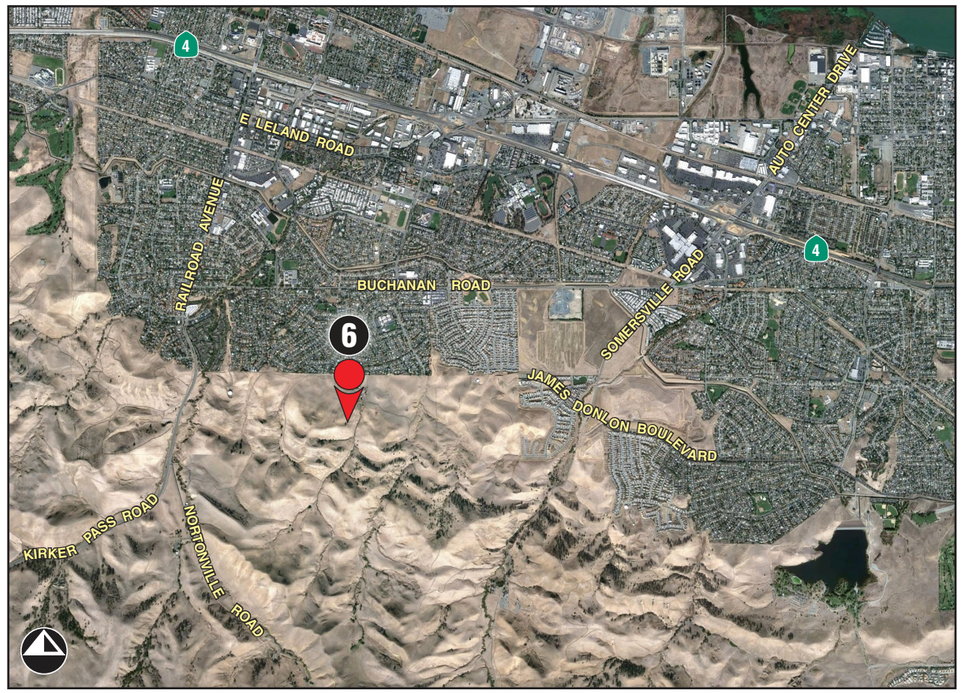
Direction of Photo
Key View Location
5 Key View Number

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 5 Existing Condition

Figure 4.3-6

11/29/12 JN 130944-18652 MAS



▲ Direction of Photo
● Key View Location
6 Key View Number

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 6 Existing Condition

Figure 4.3-7

11/29/12 JN 130944-18652 MAS

Direction of Photo
Key View Location
7 Key View Number

11/29/12 JN 130944-18653 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 7 Existing Condition

Figure 4.3-8

SCENIC VIEWS ALONG TRANSPORTATION CORRIDORS

No designated state scenic highways are present within the viewshed of the proposed project.[2] State Route (SR) 24 and Interstate (I) 680 are Officially Designated States Scenic Routes located approximately 11 miles southwest of the project site. SR-24 and I-680 designations extend from SR-24/I-680 interchange to the County line. These designated scenic highways do not include views of the project site. SR-4 is an Eligible State Scenic Highway (not officially designated) extending from SR-160 south and east to approximately Brentwood, which is approximately six miles northeast and east of the proposed project. SR-160 is also an Eligible State Scenic Highway extending from SR-4 north to the County line, which is also approximately six miles northeast of the project site. These eligible scenic highways do not include views to the project site.

The foothills associated with the project area are visible from roadways that lead into the City, as well as from SR-4. However, the majority of the project site is not readily visible from these areas as a result of existing topography, structures, and vegetation. Views of the southern hills from SR-4 are afforded to east-bound traffic approaching from Concord at the western edge of the Planning Area. Cresting the ridgeline, drivers take in a view of the cityscape, Suisun Bay, and rolling hills. Once travelers have descended the hill into the City's flatlands, the highway corridor features aging wooden fences and littered shrubs. East of the Pittsburg/Bay Point BART Station overpass, new sound walls divide the highway from adjacent residential neighborhoods.

The County also designates scenic routes within the General Plan (Figure 5-4, *Scenic Routes Plan*, of the County General Plan). The only scenic routes with views toward the proposed project include Kirker Pass Road and Nortonville Road, both located within the western portion of the project site. Views along other designated scenic routes in the area (i.e., Somersville Road to the east of the proposed project) are not readily afforded due to existing topography and intervening trees and structures. As previously noted, of the seven selected Key Views, Key Views 4 and 5 were selected to depict potential impacts to scenic routes.

LIGHT AND GLARE IN THE PROJECT AREA

Lighting effects are associated with the use of artificial light during the evening and nighttime hours. There are two primary sources of light: light emanating from building interiors passing through windows and light from exterior sources (i.e., street lighting, building illumination, security lighting, parking lot lighting, and landscape lighting). Light introduction can be a nuisance to adjacent residential areas, diminish the view of the clear night sky, and if uncontrolled, can cause disturbances. Uses such as residences and hotels are considered light sensitive, since occupants have expectations of privacy during evening hours and may be subject to disturbance by bright light sources. Light spill is typically defined as the presence of unwanted light on properties adjacent to the area being illuminated. With respect to lighting, the degree of illumination may vary widely depending on the amount of light generated, height of the light source, presence of barriers or obstructions, type of light source, and weather conditions.

Glare is primarily a daytime occurrence caused by the reflection of sunlight or artificial light by highly polished surfaces such as window glass or reflective materials and, to a lesser degree, from broad expanses of light-colored surfaces. Perceived glare is the unwanted and potentially objectionable sensation as observed by a person as they look directly into the light source of a luminaire. Daytime glare generation is common in urban areas and is typically associated with buildings with exterior facades largely or entirely comprised of highly reflective glass. Glare can also be produced during evening and nighttime hours by the reflection of artificial light sources such as automobile headlights.

[2] State of California Department of Transportation (Caltrans), *California Scenic Highway Mapping System*, http://www.dot.ca.gov/hq/LandArch/scenic_ highways/, accessed on October 31, 2012.

Glare generation is typically related to either moving vehicles or sun angles, although glare resulting from reflected sunlight can occur regularly at certain times of the year. Glare-sensitive uses include residences, hotels, transportation corridors, and aircraft landing corridors.

The project area has moderate night sky clarity (i.e., starlight visibility unaffected by urban lights). This night sky clarity varies at different locations depending on topography, which affects the degree to which hills in the area shield the glare of light sources from other locations (e.g., residential development, street lighting, commercial establishments, and industrial facilities in Pittsburg and Antioch). Existing sources of light and glare in the project area include residential uses to the north of the project site, vehicles traveling on Kirker Pass Road, as well as security lighting on the existing cell towers.

4.3.2 REGULATORY SETTING

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance" (California Code of Regulations [CCR], Title 14, § 15382, 2010).

California Department of Transportation (Caltrans)

The California Scenic Highway Program preserves and protects scenic highway corridors from changes that would diminish their aesthetic value. The California Department of Transportation (Caltrans) designates scenic highway corridors and establishes those highways that are eligible for the program. The program was created in 1963 with the enactment of the State Scenic Highways Law. The street and highway code includes a list of those highways that are either eligible for designation or are designated.[3]

LOCAL

City of Pittsburg General Plan

Urban Design Element

The City of Pittsburg General Plan (City General Plan) includes the following goals and policies that address visual quality and pertain to the proposed project. The City General Plan encourages the preservation of ridgelines and ridgeline views. The City General Plan Figure 4-2, *Major and Minor Ridgelines*, identifies the proposed project (referenced as the Buchanan Bypass).

Goal 4-G-1 Retain views of major and minor ridgelines within the southern hills, as designated in Figure 4-2.

Goal 4-G-2 Preserve minor ridgelines south of State Route 4 as open space to provide screening for hillside development.

Goal 4-G-4 Encourage development that preserves unique natural features, such as topography, rock outcroppings, mature trees, creeks, and ridgelines, in the design of hillside neighborhoods.

[3] State of California Department of Transportation (Caltrans), *California Scenic Highway Mapping System*, http://www.dot.ca.gov/hq/LandArch/scenic_ highways/, accessed on October 31, 2012.

Goal 4-G-5 Encourage a sense of rural character in the design and construction of hillside development, including extensive landscaping, rooftop terraces, sloping rooflines, and use of natural materials.

Policy 4-P-11 Limit grading of hillside areas over 30 percent slope (see Figure 10-1) to elevations less than 900 feet, foothills, knolls, and ridges not classified as major or minor ridgelines (see Figure 4-2). During review of development plans, ensure that necessary grading respects significant natural features and visually blends with adjacent properties.

Policy 4-P-14 Preserve natural creeks and drainage courses as close as possible to their natural location and appearance.

Policy 4-P-61 Retain views of the southern hills from the State Route 4 corridor, through implementation of ridgeline preservation policies (as described in Section 4.1).

Open Space Element

The City contains a significant amount of open space, which is valuable as both a visual resource and as habitat for oak woodlands, wetlands and riparian wildlife. Intermittent streams and uninhabited areas also contribute to air and water quality in the hills and tidelands. The East Bay Regional Park District (EBRPD) manages a regional preserve within the area: the Black Diamond Mines Regional Preserve.

The topography of the southern portion of the City is such that relatively smaller ridgelines filter into and merge with larger ridgelines. These larger ridgelines, which are designated as major ridgelines in the City General Plan Figure 9-1, are the highest and most visually prominent ridgelines along the southern skyline.

Contra Costa County General Plan

Transportation and Circulation Element

The Contra Costa County General Plan (County General Plan) designates portions of Kirker Pass Road, Nortonville Road, and Somersville Road (located within the project area) as scenic routes (Figure 5-4 of the County General Plan). A scenic route is a road, street, or freeway that traverses a scenic corridor of relatively high visual or cultural value. A scenic route consists of both the scenic corridor and the public right-of-way. A scenic corridor consists of much of the adjacent area that can be seen from the road, while the public right-of-way includes the roadbed and adjacent lands in public control.

The following goals and policies are contained within the Transportation and Circulation Element of the County General Plan.

Goal 5-R To identify, preserve and enhance scenic routes in the County.

Policy 5-35 Scenic corridors shall be maintained with the intent of protecting attractive natural qualities adjacent to various roads throughout the County.

Policy 5-37 Scenic views observable from scenic routes shall be conserved, enhanced, and protected to the extent possible.

Policy 5-38 The existing system of scenic routes shall be enhanced to increase the enjoyment and opportunities for scenic pleasure driving to major recreational and cultural centers throughout this and adjacent counties.

Policy 5-41 Design flexibility shall be encouraged as one of the governing elements for aesthetic purposes in the construction of roads within the scenic corridor.

Policy 5-43 Provide special protection for natural topographic features, aesthetic view, vistas, hills and prominent ridgelines at "gateway" sections of scenic routes. Such "gateways" are located at unique transition points in topography or land use, and serve as entrances to regions of the County.

Open Space Element

The County General Plan also identifies major scenic resources in the County, including major ridges, which should be considered when evaluating nearby development proposals. The proposed route is located to the north of one of these ridgeways (Figure 9-6 of the County General Plan). The County General Plan also states that smaller, localized scenic resources not identified on the relevant figure should be reviewed on a case-by-case basis to determine their visual quality.

The following goals and policies are contained within the Open Space Element of the County General Plan.

Scenic Resource Goals

Goal 9-10 To preserve and protect areas of identified high scenic value, where practical, and in accordance with the Land Use element map.

Goal 9-11 To protect major scenic ridges, to the extent practical, from structures, roadways, or other activities which would harm their scenic qualities.

Scenic Resource Policies

Policy 9-14 High quality engineering of slopes shall be required to avoid soil erosion, downstream flooding, slope failure, loss of vegetative cover, high maintenance costs, property damages and damages to visual quality. Particularly vulnerable areas should be avoided for urban development. Slopes of 26 percent or more should generally be protected and are generally not desirable for conventional cut-and-fill pad development. Development on open hillsides and significant ridgelines shall be restricted.

Policy 9-15 In order to conserve the scenic beauty of the County, developers shall generally be required to restore the natural contours and vegetation of the land after grading and other land disturbances. Public and private projects shall be designed to minimize damages to significant trees and other visual landmarks.

Policy 9-17 Extreme topographic modification, such as filling in canyons or removing hilltops, shall be avoided. Clustering and planned unit development approaches to development shall be encouraged. All future development plans, whether large or small scale, shall be based on identifying safe and suitable sites for buildings, roads

and driveways. Exemptions to this policy are appropriate for mining, landfill, and public projects in open space areas.

Policy 9-23 Hilltops, ridges, rock outcroppings, mature stands of trees, and other natural features shall be considered for preservation, at the time that any development applications are reviewed.

Policy 9-24 Any new development shall be encouraged to generally conform with natural contours to avoid excessive grading.

Policy 9-25 All new land uses which are to be located below a major scenic ridge shall be reviewed with an emphasis on protecting the visual qualities of the ridge.

Policy 9-30 Physical and visual public access to established scenic routes shall be protected.

4.3.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant aesthetic impact if it would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

AREAS OF NO PROJECT IMPACT

The following impacts either are not applicable to the proposed project or are not reasonably foreseeable:

- Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.

No designated state scenic highways are present within the viewshed of the proposed project. The nearest officially designated scenic highways are SR-24 and I-680, located 11 miles southwest of the proposed project. These scenic highways do not include vies of the proposed project. The nearest eligible state scenic highways are SR-4 and SR-160, six miles northeast of the proposed project. These eligible scenic highways do not include views to the project site. Therefore, the proposed project would not substantially degrade scenic resources along a state designated scenic highway, as no state scenic highway exists within the project area. No impact would result in this regard.

METHODOLOGY OF THE PREPARATION OF PHOTOSIMULATIONS

Photosimulations were prepared for selected Key View locations in order to demonstrate the degree of change resulting from project implementation and to assist in the following aesthetics analysis. The photosimulations have been utilized to depict, at a conceptual level of detail, the “after construction” and “after installation of landscaping” project conditions. The after construction condition represents views of the project site after construction, but before maturity of new landscaping. The proposed after installation

of landscaping condition represents views of the proposed project after construction and after maturity of new landscaping. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed grading and roadway. A three-dimensional wire frame model was created using Computer Aided Design and Drafting (CADD) files. Imaging software was used to align the computer model to the site photographs. The computer model was then superimposed over photographs from each of the Key Views and minor camera alignment changes were made to all known reference points within the view. Foreground masking of objects was performed with Adobe Photoshop to enhance realism.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Short-Term Construction Impacts

- ***DURING CONSTRUCTION, THE VISUAL QUALITIES OF THE PROJECT AREA WOULD BE TEMPORARILY DEGRADED***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: The proposed project is expected to be constructed over approximately two years. Surrounding sensitive receptors that would have views for a long duration of the project site during construction include residential uses to the east, along the existing James Donlon Boulevard and Ventura Drive. Sensitive receptors that could have moderate and short duration views would include recreational and institutional users and the remaining residential uses located to the north of the project site, south of Buchanan Road. Construction activities also would be seen by residents of the existing cattle ranch on the Thomas property. In addition, portions of the roadway may be visible from higher elevations within the Black Diamond Mines Regional Preserve.

Partial views of proposed areas of cut and fill would be visible to motorists on Kirker Pass, Nortonville, and Somersville Roads, and portions of SR-4, due to their higher elevations. Although partial views are afforded along SR-4, these views would only be readily available to vehicle passengers, who would have a larger cone of vision, compared to drivers, traveling at high speeds. Further, these views would be brief, as vehicles would be traveling at high speeds. Thus, although partial views are afforded along SR-4 and other major roadways within the City, the project site is not anticipated to be readily visible from a high number of viewers.

Construction-related activities would temporarily influence the character of the project site, as viewed from surrounding sensitive viewers. During construction of the proposed roadway alignment, the various construction activities would intermittently alter the character of the project site and its surroundings. Graded surfaces, construction debris, construction equipment, and truck traffic would be visible. Additionally, soil would be stockpiled and equipment for grading activities would be staged at various locations throughout the project site. The duration and intensity of project construction would vary with each stage. Most of the heavy grading equipment would be on-site for the period needed to complete the rough grading of the site. No nighttime construction would occur; thus, there would not be a new, construction-related source of nighttime light or glare.

With implementation of Mitigation Measure AES1, construction staging equipment areas would be required to use appropriate screening. This measure would lessen visually-related impacts of construction activities to a less than significant level.

Mitigation Measure:

AES1 Construction equipment staging areas shall use appropriate screening (e.g., temporary fencing with opaque material) to buffer views of construction equipment and material. Staging locations shall be indicated on final plans, and grading plans shall be subject to review and approval of the City of Pittsburg Development Services Department. Compliance with this measure is subject to periodic field inspection by City staff.

Level of Significance After Mitigation: Less Than Significant Impact.

Scenic Vistas

- ***THE PROPOSED PROJECT COULD HAVE A SUBSTANTIAL ADVERSE EFFECT ON A SCENIC VISTA***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. The project site is considered a highly valued landscape, as the project site is located in the foothills of the Mount Diablo Mountains and includes designated scenic resources on-site (i.e., scenic ridges, hillsides, rock outcroppings, mature strands of trees, and other natural resources). Publicly accessible areas that would have expansive views to the foothills and the County-designated ridgeway would include Black Diamond Mines Regional Preserve and surrounding trails, and Highlands Ranch Park. Implementation of the proposed project would alter these existing views. In order to illustrate the potential impacts from these public areas, photosimulations were prepared to represent potential views from trails within the Black Diamond Mines Regional Preserve and within Highlands Ranch Park for the proposed condition at the project site.

Black Diamond Mines Regional Preserve

The following analyzes the project's effects on scenic views as experienced from Black Diamond Mines Regional Preserve (Key Views 1 and 2).

Key View 1. Views from Key View 1 are afforded from a recreational trail at Black Diamond Mines Regional Preserve; refer to Figure 4.3-9, *Key View 1 Proposed Condition*. Foreground views remain unchanged as compared to existing conditions. Middleground views remain similar to existing conditions and include undeveloped land, grazing uses, unimproved roads, creeks, and vegetation; however, the cut into the hillside to accommodate the roadway would be visible. Following the installation of landscaping required by Mitigation Measure AES2 after project construction, the cut into the hillside would no longer be visible. Proposed landscaping would appear similar in color to the existing landscaping in the middleground views. Background views to the developed uses (associated with the City of Pittsburg) remain visible. The varying topography and contrasting lighter colored vegetation in the foreground and middleground views versus the darker hued views of developed uses in background views result in a high quality scenic view.

"For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area.

11/29/12 JN 130944-18652 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 1 Proposed Condition

Figure 4.3-9

Key View 2. Views from Key View 2 are afforded from a recreational trail at Black Diamond Mines Regional Preserve; refer to Figure 4.3-10, *Key View 2 Proposed Condition*. Foreground views remain unchanged as compared to existing conditions. Middleground views remain similar to existing conditions and include undeveloped land, grazing uses, unimproved roads, creeks, rock outcroppings, vegetation, and overhead transmission lines; however, the cut into the hillside to accommodate the roadway would also be visible. Following the installation of landscaping required by Mitigation Measure AES2 after project construction, the cut into the hillside would no longer be apparent as it blends in with the hillside. Proposed landscaping would appear similar in color to the existing landscaping in the middleground views. Background views to the developed uses (associated with the City of Pittsburg) remain visible. The varying topography and contrasting lighter colored vegetation in the foreground and middleground views versus the darker hued views of developed uses in background views result in a high quality scenic view.

The proposed project would require a substantial amount of cut and fill which would be balanced on-site. Following construction activities, the cut hillsides would be re-vegetated and would appear similar to the surrounding hillsides. As Key Views 1 and 2 are located approximately 0.75 mile and one mile from the proposed project, respectively, the proposed conditions would appear similar to the existing conditions from these locations with implementation of Mitigation Measure AES2. Thus, the cut and fill activities would not permanently or significantly impact views from Key Views 1 and 2 along recreational trails associated with the Black Diamond Mines Regional Preserve. Implementation of the proposed project would result in less than significant impacts with regards to views from the Black Diamond Mines Regional Preserve.

Highlands Ranch Park

Highlands Ranch Park is located along Rangewood Drive just south of Buchanan Road, approximately 0.60 miles north of the proposed roadway alignment. Recreational users of Highlands Ranch Park could have views of the proposed roadway. The following analyzes the project's effects on scenic views as experienced from Highlands Ranch Park (Key View 3).

Key View 3. Views from Key View 3 are afforded from recreational uses at Highlands Ranch Park; refer to Figure 4.3-11, *Key View 3 Proposed Condition*. Foreground views remain similar to existing conditions and include ornamental landscaping/turf, recreational uses and single-family residential units. Middleground views remain similar to existing conditions and include undeveloped land, grasses and sparse trees, varying topography, and overhead transmission lines; however, the cut hillside would be visible. Following the installation of landscaping required by Mitigation Measure AES2 after project construction, the cut hillside would no longer be apparent as it blends in with the hillside.

Proposed landscaping would appear similar in color to the existing landscaping in the middleground views. Background views to the undeveloped hillsides and vegetation remain visible. The visible contrast of the topography and landscaping between foreground and middleground views allow for moderately high visual quality.

Upon completion of the proposed project, recreational users from Highlands Ranch Park would still have views to the surrounding landscape and undeveloped hillsides. As Key View 3 is located approximately 0.60 mile from the proposed project alignment, the proposed conditions would appear similar to the existing conditions from this location, although the cut and fill activities would be visible prior to re-vegetation. The large amounts of cut and fill activities would not impact views from Key View 3 with implementation of Mitigation Measure AES2. Therefore, implementation of the proposed project would result in less than significant impacts with regards to views from Highlands Ranch Park.

"For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area.

11/29/12 JN 130944-18652 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 2 Proposed Condition

Figure 4.3-10

"For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area.

11/29/12 JN 130944-18652 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 3 Proposed Condition

Figure 4.3-11

Mitigation Measure:

AES2 A comprehensive landscape plan shall be prepared and approved concurrent with the final roadway implementation plans. Landscaping design shall be subject to approval by the City of Pittsburg Development Services Department prior to the issuance of grading or building permits. Design elements of the landscape plan shall include, but not be limited to the following (where feasible):

- Erosion control shall be applied to all disturbed slopes.
- Slopes shall be restored with hydroseeding using native, non-invasive vegetation.
- Where possible, topsoil shall be saved, stockpiled and reapplied on disturbed slopes to reduce the newly-constructed look and to promote natural revegetation.
- In order to reduce the artificial appearance of engineered slopes, cut-and-fill slopes shall be blended within existing contours, with horizontal variation, and shall be finished with a rough appearance where possible to create an aged look.
- Existing rock outcroppings shall be retained where possible.
- All mature removed trees shall be replaced using a planting ratio and maintenance program which shall ensure plant establishment and long-term success.
- Trees shall be planted or relocated in irregular locations to achieve a natural appearance along the roadway, at a density similar to the trees that would be removed.
- Natural creeks and drainage courses shall be preserved as close as possible to their natural location and appearance. Soft surface alternatives to concrete ditches and rock slope protection shall be utilized wherever possible.

Installed landscaping shall be subject to review and approval by the City of Pittsburg Development Services Department prior to final sign-off of construction of the roadway and associated improvements. The City shall be responsible for maintenance of the landscaping until it is established (anticipated to be approximately five years).

Level of Significance After Mitigation: Less Than Significant Impact.

Scenic Views Along Transportation Corridors

◆ ***THE PROPOSED PROJECT COULD HAVE AN ADVERSE AFFECT ON A SCENIC TRANSPORTATION CORRIDOR.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: No designated state scenic highways are present within the viewshed of the proposed project. However, the County designates scenic routes within the County General Plan. The only scenic routes with views toward the proposed project include Kirker Pass Road and Nortonville Road, which are located within the western portion of the project site. Views along other designated scenic routes in the

area (i.e., Somersville Road to the east of the project site) are not readily afforded due to existing topography and intervening trees and structures.

As previously noted, Key Views 4 and 5 were selected to depict potential impacts to scenic routes. The following analyzes the project's effects on scenic routes as experienced from Key Views 4 and 5, as these views pertain to designated scenic routes.

Key View 4. Views from Key View 4 are afforded from motorists traveling southbound along Kirker Pass Road; refer to Figure 4.3-12, *Key View 4 Proposed Condition*. Foreground and middleground views are afforded to the four-lane Kirker Pass Road, a new raised median, grasses, rolling hills, fencing, and overhead power lines. Middleground views also include the extended James Donlon Bouelvard, the new bridge over Kirker Creek, and the intersection of Kirker Pass Road and James Donlon Boulevard. Following construction, the cut hillside and bridge over Kirker Creek would be visible. Following the installation of landscaping required by Mitigation Measure AES2 after project construction, the cut hillside would no longer be visible from Key View 4. Proposed landscaping would appear similar in color to the existing landscaping in the middleground views. Background views would not be altered and are similar to the existing conditions. Although the visible hardscape in this Key View has increased, the proposed project would not substantially degrade the views from southbound motorists along Kirker Pass Road.

Key View 5. Views from Key View 5 are afforded from motorists traveling northbound along Kirker Pass Road; refer to Figure 4.3-13, *Key View 5 Proposed Condition*. Foreground and middleground views include the existing four-lane Kirker Pass Road, the two-lane Nortonville Road, grasses, rolling hills, and overhead power lines.

Foreground and middleground views also include a new raised median, a small new barrier wall along the western side of Kirker Pass Road, and the proposed northbound to eastbound free right-turn from Kirker Pass Road to the extension of James Donlon Boulevard. Following construction, the large cut hillside would be visible. However, the installation of landscaping required by Mitigation Measure AES2 after the completion of construction would return the cut area to conditions similar to the existing conditions. Some riparian vegetation associated with Kirker Creek remains visible in middleground views. Background views would not be altered and are similar to the existing conditions. Although the visible hardscape in this Key View has increased, the proposed project would not substantially degrade the views from northbound motorists along Kirker Pass Road.

Implementation of the proposed project would result in the slight modification of the visible landforms, as seen from motorists along Kirker Pass Road. However, upon the re-landscaping of the cut areas resulting from project grading required by Mitigation Measure AES2, the hillsides which dominate the views from motorists along Kirker Pass Road would remain similar to existing conditions. Thus, implementation of the proposed project would result in less than significant impacts with regards to views from Kirker Pass Road.

Mitigation Measures: Implement Mitigation Measure AES2.

Level of Significance After Mitigation: Less Than Significant Impact.

"For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area.

11/29/12 JN 130944-18652 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 4 Proposed Condition

Figure 4.3-12

"For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area.

11/29/12 JN 130944-18652 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 5 Proposed Condition

Figure 4.3-13

Long-Term Visual Character/Quality

- ***THE PROPOSED PROJECT COULD SUBSTANTIALLY DEGRADE THE EXISTING VISUAL CHARACTER OR QUALITY OF THE PROJECT SITE AND ITS SURROUNDINGS***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Development of the proposed roadway alignment could result in an alteration to the existing visual character and quality of the project surroundings. Existing undeveloped land would be replaced with a new roadway. The setting of the proposed roadway generally is pastoral and natural, although the PG&E transmission towers and existing Thomas Ranch buildings are visual disruptions. The design of the roadway would not include noise barriers or excessively high retaining walls, which would avoid several potential visual impacts normally associated with new roadway projects.

Portions of the proposed project alignment would cross two minor ridgelines and one major ridgeline designated in the City General Plan, and lie within City-designated viewsheds. The roadway would cross a ridgeline that is designated as a scenic ridgeway in the County General Plan. The County General Plan emphasizes the value of views from scenic routes and major scenic ridgelines. While a variety of goals and policies in the City General Plan emphasize the preservation of ridge views, it explicitly contemplates and acknowledges construction of the proposed project (referenced as the Buchanan Bypass within the City General Plan). However, potentially significant adverse effects could still be experienced by residents in close proximity to the project area. As described earlier, while the great majority of the proposed roadway would not be visible from the homes south of Buchanan Road, portions of the proposed project would be visible from these homes, which presently have views of hills to the south. In addition, portions of the proposed project would be visible, at varying degrees, from residents of the ranch on the Thomas property, from the higher elevations of the Black Diamond Mines Regional Preserve, and by motorists on Kirker Pass Road, Nortonville Road, and Somersville Road, portions of which have been designated as scenic routes by the County General Plan.

Change in Site Visual Character/Quality

Proposed project implementation could alter the visual character of the project site and its surroundings, as a new roadway is proposed within existing undeveloped hillsides; refer to Figures 4.3-9 through Figure 4.3-15, *Proposed Condition*. Key Views depicting the changes in visual character and quality, not previously discussed above, include the following:

Key View 6. Views from Key View 6 are afforded from residential uses near the southern terminus of Suzanne Drive to the north of the project site; refer to Figure 4.3-14, *Key View 6 Proposed Condition*.

Foreground and middleground views to fencing, an unimproved roadway, grasses, and ranching uses remain. The middleground views also include views to areas of the cut hillsides. However, the installation of landscaping, as required by Mitigation Measure AES2, after the completion of construction would return the cut area to conditions similar to the existing conditions. Background views remain limited as a result of the topographic conditions. As proposed landscaping would appear similar in color to existing conditions, impacts to views from residential uses to the north of the project site would be less than significant.

"For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area.

11/29/12 JN 130944-18652 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 6 Proposed Condition

Figure 4.3-14

Key View 7. Views from Key View 7 are afforded from motorists traveling eastbound along SR-4; refer to Figure 4.3-15, *Key View 7 Proposed Condition*. Foreground views remain similar to existing conditions and include grasses, shrubs, and trees. Middleground views also remain similar to existing conditions and include trees, grasses, and overhead power lines. Background views to rolling hills and ridgelines associated with the Mount Diablo Range remain. Although the proposed project is located in the rolling hills within background views, the project would not be visible from Key View 7. Therefore, the proposed project area appears to be unchanged from the existing condition, and the proposed project would not impact the area's character or quality as viewed from this location.

Based on the importance ascribed to ridgelines in the City General Plan, and the designation of portions of nearby roads as scenic or connecting routes by the County General Plan, views of portions of the project area are of moderate to high visual quality. Viewer sensitivity to the proposed project would likely be considered high. Viewer exposure would be high for some of the residences north of the project site, and moderate to high for motorists traveling on Kirker Pass Road, Nortonville Road, and Somersville Road.

Implementation of the proposed project would require grading that would leave visible hillside cuts immediately following construction. Upon revegetation of the disturbed areas, as required by Mitigation Measure AES2, the hillsides would appear similar to existing conditions. The impacts to the selected Key Views and surrounding areas would be minimal, as the character and quality of the views from these locations would be similar to the existing conditions following implementation of proposed landscaping. The proposed roadway itself would be nestled between the hillsides and would not be readily visible to the majority of surrounding viewers. Implementation of Mitigation Measure AES2 would ensure visual character and quality impacts are reduced to less than significant levels.

Visual Resources

As previously discussed, scenic visual resources within the County (in the project area) include scenic ridges, hillsides, and rock outcroppings. The County also has many smaller, localized scenic resources in the project area, such as isolated hilltops, rock outcroppings, mature stands of trees, and other natural features.

Although the proposed project would introduce a new roadway within the hillsides valued as visual resources, the proposed project would return the disturbed hillsides to conditions similar to existing conditions with the implementation of Mitigation Measure AES2. Therefore, the hillsides as viewed from the Key View locations as well as the remainder of the surrounding uses would be similar to the existing conditions following implementation of proposed landscaping. Project-related construction activities could potentially damage several existing trees from trimming or cutting roots, and/or constructing too close to a protected tree. In addition to the proposed project's impact on trees, implementation of the proposed project would result in the loss of several areas of rock outcroppings. However, Mitigation Measure AES2 requires the replacement of trees and rock outcroppings disturbed or removed during construction which would ensure impacts to these visual resources are reduced to less than significant levels.

Mitigation Measure: Implement Mitigation Measure AES2.

Level of Significance After Mitigation: Less Than Significant Impact.

"For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area.

11/29/12 JN 130944-18652 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Key View 7 Proposed Condition

Figure 4.3-15

Light and Glare

- ***THE PROPOSED PROJECT COULD CREATE A NEW SOURCE OF LIGHT AND GLARE THAT WOULD AFFECT DAY AND NIGHTTIME VIEWS IN THE AREA***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Implementation of the proposed project would increase light and glare emanating from the project site as a result of vehicle headlights and sunlight reflecting off vehicles. A traffic signal would be installed at the roadway's intersection with Kirker Pass Road, and streetlights would be installed at the eastern and western ends of the proposed James Donlon Boulevard extension. However, as the western end terminates at the heavily-traveled Kirker Pass Road, the proposed traffic signal would not affect any sensitive uses. Additionally, the eastern end of the proposed project is located near existing residential sources of light. Therefore, the proposed project would not result in additional sources of light and glare not already experienced in the project vicinity.

With implementation of Mitigation Measure AES3, streetlights would be configured such that they would not cause any significant light or glare impacts and impacts would be less than significant.

Mitigation Measure:

AES3 All street lighting shall utilize directional lighting techniques and low wattage bulbs that direct light downwards and minimize light spillover, without compromising safety or security. Lighting fixtures shall use shielding, if necessary to prevent spill lighting on adjacent off-site uses.

Level of Significance After Mitigation: Less Than Significant Impact.

4.4 AGRICULTURE AND FORESTRY RESOURCES

4.4.1 ENVIRONMENTAL SETTING

REGIONAL

Agriculture has played and continues to play a significant role in Contra Costa County. Rangeland grazing and dry farming are the most traditional and historic uses for agricultural land within the County. In 1940, about 66 percent of all agricultural lands in the County were categorized as rangeland; by 2000 rangeland accounted for 84 percent of all agricultural acreage. This change is largely due to the conversion of intensive agricultural uses to less intensive practices. Less intensive practices include such uses as grazing (Contra Costa County General Plan, 2005). According to the Contra Costa County Department of Agriculture Annual Crops and Livestock reports, rangeland has stayed at 169,000 acres Countywide since 2004 (Contra Costa County Department of Agriculture, 2012).

In 2002, Contra Costa County contained a total of 592 operating farms totaling 126,338 acres with the median farm size of 20 acres; however, by 2007 the total number of operating farms had grown to 634 farms totaling 146,993 acres with a median farm size of 13 acres (USDA, 2002 and 2007). The total land in production in 2011 was 193,330 acres, down 20 acres from 2010; however the total value of production was up $13.2 million from 2010. The increase in total gross value of agricultural crops was due to an increase in prices and a strong demand (County Agricultural Commission Report, 2011).

LOCAL

The proposed project would construct a public right-of-way through two privately-owned properties and one City-owned property, located within unincorporated Contra Costa County, near the western limits of the City of Antioch and the southern limits of the City of Pittsburg. Together the two privately-owned parcels total approximately 475 acres and have historically been used for cattle grazing purposes. The vast majority of this land is known as the Thomas Ranch. The two parcels are currently under Williamson Act contracts. Upon project completion, approximately 70 acres would be permanently converted from agricultural land use to non-agricultural land (public use).

The project area is identified as Grazing Land (G) on the 2010 map prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP). There is a small portion of land to the north of the project site that is designated Farmland of Local Importance (L). The project area does not include any land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Department of Conservation, 2011).

4.4.2 REGULATORY SETTING

FEDERAL

Farmland Protection Policy Act (7 U.S.C. Section 4201)

The purpose of the Farmland Protection Policy Act (FPPA) is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. It additionally directs federal programs to be compatible with State and local policies for the protection of farmlands. Congress passed the Agriculture and Food Act of 1981 (Public Law 97-98) containing the FPPA—Subtitle I of Title XV, Section 1539-1549. The final rules and regulations were published in the Federal Register on June 17, 1994.

The FPPA is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with state and local units of government, and private programs and

policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years. The FPPA does not authorize the Federal Government to regulate the use of private or non-federal land or, in any way, affect the property rights of owners.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to non-agricultural use and are completed by a federal agency or with assistance from a federal agency (NRCS, 2011).

STATE

California Department of Conservation (DOC), Division of Land Resource Protection

The DOC applies the Natural Resources Conservation Service (NRCS) soil classifications to identify agricultural lands, and these agricultural designations are used in planning for the present and future of California's agricultural land resources. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

The list below provides a comprehensive description of all the categories mapped by the DOC.[1]

- **Prime Farmland.** Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Unique Farmland.** Farmland 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. Land must have been cropped at some time during the four years prior to the mapping date.
- **Farmland of Local Importance.** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.
- **Urban and Built-up Land.** Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

[1] Department of Conservation. *Important Farmland Map Categories*. 2012. Available online: http://www.conservation.ca.gov/dlrp/fmmp/mccu/Pages/map_categories.aspx. Accessed September 11, 2012.

- **Other Land.** Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is promulgated in California Government Code Section 51200-51297.4, and, therefore, is applicable only to specific land parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under Williamson Act contracts. The Williamson Act program is administered by the DOC, in conjunction with local governments, which administer the individual contract arrangements with landowners. The landowner commits the parcel to a 10-year period wherein no conversion out of agricultural use is permitted.

Each year the contract automatically renews unless a notice of non-renewal or cancellation is filed. In return, the land is taxed at a rate based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. An application for immediate cancellation can also be requested by the landowner, provided that the proposed immediate cancellation application is consistent with the cancellation criteria stated in the California Land Conservation Act and those adopted by the affected county or city. Non-renewal or immediate cancellation does not change the zoning of the property. Participation in the Williamson Act program is dependent on county adoption and implementation of the program and is voluntary for landowners.

The Williamson Act prohibits a public agency from acquiring prime farmland covered under the Act for the location of a public improvement if there is other land within or outside the preserve on which it is reasonably feasible to locate the public improvement. Government Code section 51295 states that when a project would condemn or acquire only a portion of a parcel of land subject to Williamson Act contract, the contract is deemed null and void only as to that portion of the contracted farmland taken. The remaining land continues to be subject to the contract.

There are five methods to terminate a contract under the Williamson Act: (1) non-renewal; (2) public acquisition; (3) cancellation; (4) annexation; and (5) easement exchange. Each method is described below.

- **Non- Renewal –** The first and most widely used method is a nine-year process called "non-renewal," which begins with the recordation of a notice of non-renewal 90 days before the renewal date of the contract. Normally, the renewal date is the anniversary date of the contract.
- **Public Acquisition** – The second most widely used tool is through public acquisition, which would be used for the proposed project. A Williamson Act contract is deemed null and void if an entire parcel of land subject to a contract is condemned or acquired in lieu of eminent domain. When the action is commenced to condemn or acquire an interest in less than the fee title of an entire parcel, the contract is deemed null and void only for the portion that is the subject of the action.

- **Cancellation** – Cancellation of a contract accounts for only a small portion of cancelled contracts. To approve a contract cancellation, a county or city must make one or two primary findings: (1) that the cancellation is consistent with the Williamson Act; or (2) that cancellation is in the public interest.
- **Annexation** – A city may exercise its option to cancel a contract when it is annexing a property subject to a Williamson Act contract made with a county prior to January 1, 1991, and the city filed a protest of the contract with the Local Agency Formation Commission (LAFCO) at the time the contract was made, and provided other conditions are met.
- **Easement Exchange** – The parties of a Williamson Act contract may agree to rescind the contract in order to enter into a new contract provided that the new contract restricts the same property for an initial term that is at least as long as the unexpired term but not less than ten years.

Farmland Security Zone Act

The Farmland Security Zone Act is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." Under the provisions of this act, a landowner already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a contract with the county. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35 percent reduction in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into non-agricultural uses. Contra Costa County does not currently have Farmland Security Zone Act contracts.[2]

Cortese-Knox-Hertzberg Act

In California, the Cortese-Knox Local Government Reorganization Act of 1985 (which became operative on January 1, 1986) consolidated three major laws into a single, unified law. In 2000, Speaker Robert Hertzberg introduced Assembly Bill (AB) 2838 to comprehensively revise the Cortese-Knox Act of 1985. AB 2838 incorporated many of the recommendations made by the Commission on Local Governance for the 21st Century. AB 2838 revisions resulted in the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000.

The Cortese-Knox-Hertzberg Act establishes procedures for organizational changes in local governments such as city incorporations, annexations to a city or special district, and city and special district consolidations. LAFCOs have numerous powers under this Act; however, the primary focus is on the local agency boundary changes. LAFCOs can approve or deny the following local agency boundary changes:

- Annexations: the addition of territory to a government entity;
- Incorporation: the creation of a city;
- Formation: the creation of a special district; and
- Transfer: the exchange of territory between two or more government entities.

[2] California Department of Conservation. *The California Land Conservation (Williamson) Act 2010 Status Report*. November 2010. Available online at: http://www.conservation.ca.gov/dlrp/lca/stats_reports/Documents/2010 Williamson Act Status Report.pdf. Accessed on September 11, 2012.

Public Resources Code (PRC) Section 21060.1

The PRC Section 21060.1 uses the FMMP to define agricultural land for the purposes of assessing environmental impacts. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and analyze the conversion of such lands. The FMMP provides analysis pertaining to agricultural land use and land use changes throughout California.

LOCAL

City of Pittsburg General Plan

The project area is within the City's Planning Area, the Sphere of Influence (SOI), and the City's Urban Limit Line, as established by Measure P. The City of Pittsburg General Plan (City General Plan) does not include goals and policies for agriculture; however, the City General Plan identifies agriculture and resource management as criteria for the Open Space land use designation.

Contra Costa County General Plan

The project area is located in an unincorporated area Contra Costa County within the City Urban Limit Line. The Conservation Element of the County General Plan contains the following relevant goals and policies:

Goal 8-G:	To encourage and enhance agriculture, and to maintain and promote a healthy and competitive agricultural economy.
Goal 8-I	To minimize conflicts between agriculture and urban use.
Goal 8-J	To encourage cooperation between counties and cities in preservation of agricultural lands.
Policy 8-29	Large contiguous areas of the County should be encouraged to remain in agricultural production, as long as economically viable.
Policy 8-32	Agriculture shall be protected to assure a balance in land use. The policies of Measure C – 1990 shall be enforced.
Policy 8-33	The County shall encourage agriculture to continue operating adjacent to developing urban areas.
Policy 8-38	Agricultural operations shall be protected and enhanced through encouragement of Williamson Act contracts to retain designated areas in agricultural use.
Policy 8-42	The importance of the agricultural production, processing, and services industry within the County shall be recognized, and agriculture shall be integrated into the County's overall economic programs
Policy 8-ae	Provide a circulation system appropriate to rural development to support land uses and economic activity.
Policy 8-af	Discourage the construction of growth-inducing highways or roads serving areas outside LAFCO designated Spheres of Influence unless the growth-inducing impacts of the project have been mitigated. Highways built in non-urban areas should limit access to what is necessary to serve planned land uses and emergency needs.

4.4.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to agricultural resources 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
- Conflict with existing zoning for agricultural use, or a Williamson Act contract
- Conflict with existing zoning, for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))
- Result in the loss of forest land or conversion of forest land to non-forest use
- Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use

AREAS OF NO PROJECT IMPACT

The following impacts are either not applicable to the proposed project or are not reasonably foreseeable:

- 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

The proposed project is located within land designated as Grazing Land (G) and is located south of land designated as Farmland of Local Importance (L). The proposed project is not located on land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, there would be no impact in this regard.

- Conflict with existing zoning, for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))

The proposed project does not include, nor is it adjacent to, any land designated as forest land, timberland, or timberland production. The proposed project would not convert such land to non-forest or non-timber land. Therefore, there would be no impact.

- Result in the loss of forest land or conversion of forest land to non-forest use

The proposed project does not include, nor is it adjacent to, land designated as forest land. The proposed project would not convert such land to non-forest land; therefore, there would be no impact.

POTENTIAL IMPACTS AND MITIGATION MEASURES

♦ *THE PROPOSED PROJECT WOULD NOT CONFLICT WITH EXISTING ZONING FOR AGRICULTURAL USE, OR WILLIAMSON ACT CONTRACT*

Level of Significance: Less Than Significant Impact.

Impact Analysis: Two of the parcels within the project area, APNs 089-050-056 and 089-020-011, are currently under Williamson Act contracts. APN 089-02-011 is approximately 7.04 acres and is currently under a Williamson Act Non-Renewal contract, thus the existing contract will expire at the end of the contract terms. APN 089-050-056 is totals approximately 466.8 acres, east of Kirker Pass Road, and 3.7 acres, west of Kirker Pass Road, and is under Williamson Act Non-Prime Agriculture Land contract (California Department of Conservation, 2012). Thus, the area east of Kirker Pass Road, for these two parcels, totals 475 acres and is currently used for cattle ranch operations.

As noted above, a Williamson Act contract may be cancelled through condemnation or public acquisition of the land subject to the contract. When the action is to condemn or acquire less than the entire parcel, the contract is deemed null and void only for that portion of land that is subject to the action (Government Code Section 51295). The Cortese-Knox-Hertzberg Act Section 56856.5 prohibits LAFCO from approving annexation to a city if the city would provide facilities or services related to sewers, non-agricultural water, or streets and roads to the area being annexed, unless the city has policies and feasible implementation measures applicable to the area ensuring the continuation of agricultural use and other uses allowable under the contract on a long-term basis. For a detailed discussion of the proposed project's consistency with LAFCO policies and standards and the Cortese-Knox-Hertzberg Act, refer to Section 4.2, *Land Use and Planning*, subheading *Consistency with Relevant Planning Policies*.

Approximately 70 acres of the overall 475-acre area (the two privately-owned properties, east of Kirker Pass Road) would be developed with the proposed roadway alignment. The area within the proposed James Donlon Boulevard extension would be acquired by the City, which would trigger the cancellation of the Williamson Act contract. Pursuant to Government Code Section 51243.5(a), the City would administer the Williamson Act contract upon annexation for areas outside the proposed James Donlon Boulevard right-of-way.

The proposed project also includes a general plan amendment to designate the properties Open Space and would pre-zone the SOI to designate the properties Open Space (OS) District, with the option to provide an Agricultural Preserve Overlay District. No other access points would be provided for the proposed James Donlon Boulevard extension beyond the intersections at Kirker Pass Road on the west and Sky Ranch II, including Metcalf Street, Ventura Drive, and Sommersville Road, on the east.

The proposed right-of-way acquisition would not be expected to substantially reduce the agricultural viability of the properties. The existing cattle ranch would be retained and cattle grazing would continue after implementation of the proposed project. The proposed project would accommodate a minimum of one culvert large enough for cattle to allow the cattle to safely access the northern and southern portions of the property. Therefore, the proposed project would not conflict with existing zoning and the Williamson Act contracts would remain for the portions of the property outside of the right-of-way. Impacts from the proposed project would be less than significant.

***Mitigation Measures*:** No mitigation is required.

Level of Significance: Less Than Significant Impact.

- ***THE PROPOSED PROJECT WOULD NOT INVOLVE OTHER CHANGES IN THE EXISTING ENVIRONMENT, WHICH, DUE TO THEIR LOCATION OR NATURE, COULD RESULT IN CONVERSION OF FARMLAND, TO NON-AGRICULTURAL USE OR CONVERSION OF FOREST LAND TO NON-FOREST USE***

Level of Significance: Potentially Significant Impact.

Impact Analysis: The proposed project site is located on land designated as Grazing Land (G) and is south of land designated as Farmland of Local Importance (L) under the FMMP (California Department of Conservation, 2011). As discussed in Section 4.2, *Land Use and Planning*, the proposed project is located on land that is considered "prime agricultural land" pursuant to the Cortese-Knox-Hertzberg Act. The proposed project is not located on or adjacent to designated forest land.

The proposed project would convert approximately 70 acres to non-agricultural lands. The proposed project would amend the City General Plan land use designation on APNs 089-050-056 and 089-020-011 from Open Space and Hillside Low Density Residential to Open Space. In addition, the proposed project would pre-zone the two privately-owned parcels to Open Space (OS) District with an option to provide an Agricultural Preserve Overlay District. The existing ranch operations would continue and a minimum of one culvert would be provided to allow safe passage of the cattle from the north side of the proposed James Donlon Boulevard to the south side. Although the proposed project would convert 70 acres of agriculture land to non-agriculture land; it would ultimately protect approximately 400 acres of agricultural land by designating the land Open Space and the existing Williamson Act Non-prime Agricultural contract would remain on APN 089-050-056 for areas not within the proposed James Donlon Boulevard right-of-way. The Williamson Act Non-Renewal contract for APN 089-020-011 would not be renewed; however, this would occur even without the proposed project. Thus, impacts are considered less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

4.5 AIR QUALITY/GREENHOUSE GAS EMISSIONS

Information in this section is based primarily on the Bay Area Air Quality Management District (BAAQMD) *California Environmental Quality Act* (CEQA) *Guidelines* (May 2011), *Revised Draft Options and Justifications Report*, the BAAQMD *California Environmental Quality Act Thresholds of Significance* (October 2009), the *Bay Area 2010 Clean Air Plan* (September 2010), Air Quality Data (California Air Resources Board 2009 through 2011), and the traffic impact analysis provided in Section 4.13, *Transportation/Traffic*, of this Environmental Impact Report (EIR). In addition, air quality modeling data was assessed based on the Roadway Construction Emissions Model (RCEM) developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD) and Greenhouse Gas (GHG) modeling data is based on EMFAC2011 developed by the California Air Resources Board (CARB) (refer to Appendix B, *Air Quality/GHG Modeling Data*).

4.5.1 ENVIRONMENTAL SETTING

SAN FRANCISCO AIR BASIN

CARB divides the state into 15 air basins that share similar meteorological and topographical features. The proposed project is located within the San Francisco Bay Area Air Basin (Basin). This Basin includes San Mateo, Santa Clara, Alameda, Contra Costa, Napa and Marin counties.

Climate and Topography

The City of Pittsburg (City) is located in the Carquinez Strait Region subregion. The Carquinez Strait runs from Rodeo to Martinez. It is the only sea-level gap between the San Francisco Bay and the Central Valley. The subregion includes the lowlands bordering the strait to the north and south, and includes the area adjoining Suisun Bay and the western part of the Sacramento-San Joaquin Delta as far east as Bethel Island. The subregion extends from Rodeo in the southwest and Brentwood on the southeast to Vallejo in the northwest and Fairfield on the northeast.

Prevailing winds are from the west in the Carquinez Strait. During the summer and fall months, high pressure offshore coupled with low pressure in the Central Valley causes marine air to flow eastward through the Carquinez Strait. The wind is strongest in the afternoon. Afternoon wind speeds of 15 to 20 miles per hour (mph) are common throughout the strait region. Annual average wind speeds are 8 mph in Martinez, and 9 to 10 mph further east. Sometimes atmospheric conditions cause air to flow from the east. East winds usually contain more pollutants than the cleaner marine air from the west. In the summer and fall months, this can cause elevated pollutant levels to move into the central Basin through the strait. These high pressure periods are usually accompanied by low wind speeds, shallow mixing depths, higher temperatures and little or no rainfall.

Summer mean maximum temperatures reach about 90 degrees Fahrenheit (ºF) in the subregion. Mean minimum temperatures in the winter are in the high 30s ºF. Temperature extremes are especially pronounced in sheltered areas farther from the moderating effects of the strait itself, e.g. at Fairfield.

Wind Patterns

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

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3 PM to 4 PM.), compared with only seven knots at San Jose and less than six knots at the Farallon Islands. The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result.

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

Temperature

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

Precipitation

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

Air Pollution Potential

Although air pollution potential is strongly influenced by climate and topography, the air pollution that occurs in a location also depends upon the amount of air pollutant emissions in the surrounding area or transported from more distant places. Air pollutant emissions generally are highest in areas that have high population densities, high motor vehicle use and/or industrialization. These contaminants created by photochemical processes in the atmosphere, such as ozone, may result in high concentrations many miles downwind from the sources of their precursor chemicals.

Wind Circulation

Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some

sources are at their peak, namely, commute traffic (early morning) and wood burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants upvalley during the day, and cold air drainage flows move the air mass downvalley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.

Inversions

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

There are two types of inversions that occur regularly in the Basin. One is more common in the summer and fall, while the other is most common during the winter. The frequent occurrence of elevated temperature inversions in summer and fall months acts to cap the mixing depth, limiting the depth of air available for dilution. Elevated inversions are caused by subsiding air from the subtropical high pressure zone, and from the cool marine air layer that is drawn into the Basin by the heated low pressure region in the Central Valley.

The inversions typical of winter, called radiation inversions, are formed as heat quickly radiates from the earth's surface after sunset, causing the air in contact with it to rapidly cool. Radiation inversions are strongest on clear, low-wind, cold winter nights, allowing the build-up of such pollutants as carbon monoxide and particulate matter. When wind speeds are low, there is little mechanical turbulence to mix the air, resulting in a layer of warm air over a layer of cooler air next to the ground. Mixing depths under these conditions can be as shallow as 50 to 100 meters, particularly in rural areas. Urban areas usually have deeper minimum mixing layers because of heat island effects and increased surface roughness. During radiation inversions downwind transport is slow, the mixing depths are shallow, and turbulence is minimal, all factors which contribute to ozone formation.

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

Solar Radiation

The frequency of hot, sunny days during the summer months in the Basin is another important factor that affects air pollution potential. It is at the higher temperatures that ozone is formed. In the presence of ultraviolet sunlight and warm temperatures, reactive organic gases and oxides of nitrogen react to form secondary photochemical pollutants, including ozone. Because temperatures in many of the inland valleys are so much higher than near the coast, the inland areas are especially prone to photochemical air pollution. In late fall and winter, solar angles are low, resulting in insufficient ultraviolet light and warming of the atmosphere to drive the photochemical reactions. Ozone concentrations do not reach significant levels in the Basin during these seasons.

Sheltered Terrain

The hills and mountains in the Basin contribute to the high pollution potential of some areas. During the day, or at night during windy conditions, areas in the lee sides of mountains are sheltered from the prevailing winds, thereby reducing turbulence and downwind transport. At night, when wind speeds are low, the upper atmospheric layers are often decoupled from the surface layers during radiation conditions.

If elevated terrain is present, it will tend to block pollutant transport in that direction. Elevated terrain also can create a recirculation pattern by inducing upvalley air flows during the day and reverse downvalley flows during the night, allowing little inflow of fresh air.

The areas having the highest air pollution potential tend to be those that experience the highest temperatures in the summer and the lowest temperatures in the winter. The coastal areas are exposed to the prevailing marine air, creating cooler temperatures in the summer, warmer temperatures in winter, and stratus clouds all year. The inland valleys are sheltered from the marine air and experience hotter summers and colder winters. Thus, the topography of the inland valleys creates conditions conducive to high air pollution potential.

LOCAL AMBIENT AIR QUALITY

CARB monitors ambient air quality at approximately 250 air monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations ten feet aboveground level; therefore, air quality is often referred to in terms of ground-level concentrations. The closest air monitoring station is the Bethel Island Road Monitoring Station, which is located approximately twelve miles east of the project area and monitors ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_X), sulfur oxides (SO_X), and particulate matter 10 microns or less in diameter (PM_{10}). The nearest monitoring station measuring particulate matter 2.5 microns or less in diameter ($PM_{2.5}$) is the Concord Monitoring Station. Local air quality data from 2009 to 2011 for the Bethel Island Road and Concord Monitoring Stations is provided in Table 4.5-1, *Local Air Quality Levels*. This table lists the monitored maximum concentrations and number of exceedances of federal/state air quality standards each year as available.

Table 4.5-1
Local Air Quality Levels

Pollutant	Primary Standard		Year	Maximum[1,2] Concentration	Days (Samples) State/Federal Std. Exceeded
	California	Federal			
Ozone (O_3) [2] (1-hour)	0.09 ppm for 1 hour	NA[6]	2009 2010 2011	0.109 ppm 0.106 0.091	2/0 3/0 0/0
Ozone (O_3) [2] (8-hour)	0.070 ppm for 8 hours	0.075 ppm for 8 hours	2009 2010 2011	0.094 ppm 0.087 0.078	6/3 7/4 4/2
Carbon Monoxide (CO) [2] (1-hour)	20 ppm for 1 hour	35 ppm for 1 hour	2009 2010 2011	1.30 ppm 1.39 1.37	0/0 0/0 0/0
Carbon Monoxide (CO) [2] (8-hour)	9.0 ppm (8 hour)	9 ppm (8 hour)	2009 2010 2011	0.94 ppm 0.82 0.95	0/0 0/0 0/0
Nitrogen Dioxide (NO_2) [2]	0.18 ppm for 1 hour	0.100 ppm for 1 hour	2009 2010 2011	0.033 ppm 0.032 0.036	0/NM 0/NM 0/NM
Sulfur Dioxide (SO_2) [2]	0.25 ppm for 1 hour	0.075 ppm for 1 hour	2009 2010 2011	0.003 ppm 0.004 0.002	NM NM NM
Particulate Matter (PM_{10}) [2, 4, 5]	50 :g/m^3 for 24 hours	150 :g/m^3 for 24 hours	2009 2010 2011	39.1 :g/m^3 69.6 72.4	0/0 1/0 1/0
Fine Particulate Matter ($PM_{2.5}$) [3, 5]	No separate state standard	35 :g/m^3 for 24 hours	2009 2010 2011	39.0 :g/m^3 36.4 47.5	NM/1 NM/1 NM/2

Source: Aerometric Data Analysis and Measurement System (ADAM), summaries from 2009 to 2011, http://www.arb.ca.gov/adam.

ppm = parts per million; PM_{10} = particulate matter 10 microns in diameter or less; NM = not measured; $\mu g/m^3$ = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NA = not applicable.

1. Maximum concentration is measured over the same period as the California Standard.
2. Measurements were taken at Bethel Island Road Monitoring Station (located at 5551 Bethel Island Road, Bethel Island CA 94511).
3. Measurements were taken at Concord Monitoring Station (located at 2975 Treat Boulevard, Concord CA 94518).
4. PM_{10} exceedances are based on state thresholds established prior to amendments adopted on June 20, 2002.
5. PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.
6. The United States Environmental Protection Agency revoked the Federal 1-hour Standard in June of 2005.

Carbon Monoxide. Carbon monoxide (CO) is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. CO replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency, as seen in high altitudes) are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of CO. Exposure to high levels of CO can slow reflexes and cause drowsiness, as well as result in death in confined spaces at very high concentrations.

Nitrogen Dioxide. Nitrogen oxides (NO_X) are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone, and react in the atmosphere to form acid rain. NO_2 (often used interchangeably with NO_X) is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (i.e., motor vehicle engines, power plants, refineries, and other industrial operations). NO_2 can irritate and damage the lungs, and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO_2 concentrations that are typically much higher than those normally found in the ambient air, may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes as well as cause pulmonary dysfunction.

Ozone. Ozone (O_3) occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric (the "good" O_3 layer) extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

The "Bad" O_3 is a photochemical pollutant, and needs reactive organic compounds (ROGs), NO_X, and sunlight to form; therefore, ROGs and NO_X are O_3 precursors. To reduce O_3 concentrations, it is necessary to control the emissions of these O_3 precursors. Significant O_3 formation generally requires an adequate amount of precursors in the atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High O_3 concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While O_3 in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level O_3 (in the troposphere) can adversely affect the human respiratory system and other tissues. O_3 is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of O_3. Short-term exposure (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache and nausea.

Coarse Particulate Matter (PM_{10}). PM_{10} refers to suspended particulate matter, which is smaller than 10 microns or ten one-millionths of a meter. PM_{10} arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM_{10} scatters light and significantly reduces visibility. In addition, these particulates penetrate into lungs and can potentially damage the respiratory tract. On June 19, 2003 CARB adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25).

Fine Particulate Matter ($PM_{2.5}$). Due to recent increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less), both State and Federal $PM_{2.5}$ standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease. In 1997, the U.S. Environmental Protection Agency (EPA) announced new $PM_{2.5}$ standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the United States Supreme Court reversed this decision and upheld the EPA's new standards.

On January 5, 2005, the EPA published a Final Rule in the Federal Register that designates the Basin as a nonattainment area for Federal $PM_{2.5}$ standards. On June 20, 2002, CARB adopted amendments for

statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.

Sulfur Dioxide. Sulfur dioxide (SO_2) is a colorless, irritating gas with a rotten egg smell; it is formed primarily by the combustion of sulfur-containing fossil fuels. Sulfur dioxide is often used interchangeably with sulfur oxides (SO_X) and lead (Pb). Exposure of a few minutes to low levels of SO_2 can result in airway constriction and reduction in breathing capacity in some asthmatics.

Reactive Organic Gases and Volatile Organic Compounds. Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including reactive organic gases (ROGs) and volatile organic compounds (VOCs). Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation).

Toxic Air Contaminants. Toxic Air Contaminants (TACs) (also referred to as Hazardous Air Pollutants [HAPs]), are pollutants that result in an increase in mortality, a serious illness, or pose a present or potential hazard to human health. Health effects of TACs may include cancer, birth defects, and immune system and neurological damage.

TACs can be separated into carcinogens and noncarcinogens based on the nature of the physiological degradation associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which heath impacts would not occur. Noncarcinogenic TACs differ in that there is a safe level in which it is generally assumed that no negative health impacts would occur. These levels are determined on a pollutant-by-pollutant basis.

TACs are not considered criteria air pollutants and, thus, are not specifically addressed through the setting of ambient air quality standards. Instead, the EPA and CARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology (MACT and BACT) to limit emissions. These in conjunction with additional rules set forth by the BAAQMD establish the regulatory framework for TACs.

Global Climate Change Gases

The natural process through which heat is retained in the troposphere is called the "greenhouse effect."[1] The greenhouse effect traps heat in the troposphere through a three-fold process, summarized as follows: short wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long wave radiation; and GHGs in the upper atmosphere absorb this long wave radiation and emit this long wave radiation into space and toward the Earth. This "trapping" of the long wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

The most abundant GHGs are water vapor and carbon dioxide. Many other trace gases have greater ability to absorb and re-radiate long wave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-radiate long wave radiation.

[1] The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers.

Greenhouse gases include, but are not limited to, the following:[2]

- *Water vapor (H_2O)*. Although water vapor has not received the scrutiny of other GHGs, it is the primary contributor to the greenhouse effect. Natural processes, such as evaporation from oceans and rivers, and transpiration from plants, contribute 90 percent and 10 percent of the water vapor in our atmosphere, respectively. The primary human related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount (less than one percent) to atmospheric concentrations of water vapor. The Intergovernmental Panel on Climate Change (IPCC) has not determined a GWP for water vapor.
- *Carbon dioxide (CO_2)*. Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, the concentration of carbon dioxide in the atmosphere has increased 39 percent.[3] Carbon dioxide is the most widely emitted greenhouse gas and is the reference gas (GWP of 1) for determining Global Warming Potentials for other GHGs.
- *Methane (CH_4)*. Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane come from landfills, natural gas systems, and enteric fermentation. Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 21.
- *Nitrous oxide (N_2O)*. Nitrous oxide is produced by both natural and human related sources. Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 310.
- *Hydrofluorocarbons (HFCs)*. HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing as the continued phase out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs range from 140 for HFC-152a to 6,300 for HFC-236fa.
- *Perfluorocarbons (PFCs)*. Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semi conductor manufacturing. Perfluorocarbons are potent greenhouse gases with a Global Warming Potential several thousand times that of carbon dioxide, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years).[4] The GWP of PFCs range from 5,700 to 11,900.
- *Sulfur hexafluoride (SF_6)*. Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent greenhouse gas that has been evaluated by the Intergovernmental Panel on Climate Change with a GWP of 23,900. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing

[2] All Global Warming Potentials are given as 100 year GWP. Unless noted otherwise, all Global Warming Potentials were obtained from the Intergovernmental Panel on Climate Change. Climate Change (Intergovernmental Panel on Climate Change, *Climate Change, The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the IPCC*, 1996).

[3] United States Environmental Protection Agency, *Inventory of United States Greenhouse Gas Emissions and Sinks 1990 to 2010, April 2012*, http://www.epa.gov/climatechange/ emissions/ usinventoryreport.html.

[4] U.S. Environmental Protection Agency, *High GWP Gases and Climate Change*, February 9, 2011. http://www.epa.gov/highgwp/scientific.html.

ratio compared to carbon dioxide (four parts per trillion [ppt] in 1990 versus 365 parts per million [ppm]). [5]

In addition to the six major GHGs discussed above (excluding water vapor), many other compounds have the potential to contribute to greenhouse effect. Some of these substances were previously identified as stratospheric ozone depletors, therefore, their gradual phase out is currently in effect. The following is a listing of these compounds:

- *Hydrochlorofluorocarbons (HCFCs).* HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, all developed countries that adhere to the Montreal Protocol are subject to a consumption cap and gradual phase out of HCFCs. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The GWPs of HCFCs range from 93 for HCFC-123 to 2,000 for HCFC-142b.[6]
- *1,1,1 trichloroethane.* 1,1,1 trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers. The GWP of methyl chloroform is 110 times that of CO_2.[7]
- *Chlorofluorocarbons (CFCs).* CFCs are used as refrigerants, cleaning solvents, and aerosols spray propellants. CFCs were also part of the EPA's Final Rule (57 FR 3374) for the phase out of O_3 depleting substances. Currently, CFCs have been replaced by HFCs in cooling systems and a variety of alternatives for cleaning solvents. Nevertheless, CFCs remain suspended in the atmosphere contributing to the greenhouse effect. CFCs are potent GHGs with GWPs ranging from 4,600 for CFC 11 to 14,000 for CFC 13.[8]

SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of air pollution than are the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of air toxics and CO are of particular concern. Land uses considered sensitive receptors are residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The majority of sensitive receptors located near the project area are residential land uses. Bordering the roadway alignment to the north, south and west is open space. North of the open space is a ranch structure with associated buildings and north of that is a single-family housing development. Located east of the project area is the approved Sky Ranch II Subdivision, a single-family residential development. Table 4.5-2, *Sensitive Receptors*, describes the location of the sensitive receptors closest to the project area.

[5] Ibid.
[6] United States Environmental Protection Agency, *Protection of Stratospheric Ozone: Listing of Global Warming Potential for Ozone Depleting Substances*, dated October 29, 2009. http://www.epa.gov/EPA-AIR/1996/January/Day-19/pr-372.html.
[7] Ibid.
[8] United States Environmental Protection Agency, *Class I Ozone Depleting Substances*, August 19, 2010. http://www.epa.gov/ozone/ods.html.

Table 4.5-2
Sensitive Receptors

Type	Name/Location	Distance from Project Site (feet)	Direction from Project Site
Schools	Foothill Elementary School 1200 Jensen Drive	3,250	north of eastern portion of roadway
	Highlands Elementary School/ Pittsburg Unified 4141 Harbor Street	4,650	north of center portion of roadway
Institutional	Come As You Are Ministry 4317 Thornhill Court	2,800	north of center portion of roadway
	New Life Christian Center 1166 Metten Avenue	3,430	north of center portion of roadway
	Church of the Nazarene 5305 Kirker Pass Road	1,850	north of western portion of roadway
Parks	Buchanan Park 4150 Harbor Street	4,380	north of center portion of roadway
	Highlands Park Between Goldenhill Drive and Saint Paul Circle	3,960	north of center portion of roadway
	Markley Creek Park	1,700	east
	Woodland Hills Park	4,000	northwest
	Marchetti Park	4,900	northeast
Residential	Single Family Residential	550 - 1,200	north
	Single Family Residential	2,900	east
	Thomas Ranch property	600	north
	Single Family Housing/Ranch	1,400	south

Source: Google, maps.google.com, October 2012.

4.5.2 REGULATORY SETTING

FEDERAL

United States Environmental Protection Agency

The EPA is responsible for implementing the Federal Clean Air Act (FCAA), which was first enacted in 1955 and amended numerous times after. The FCAA established federal air quality standards known as the National Ambient Air Quality Standards (NAAQS). These standards identify levels of air quality for "criteria" pollutants that are the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants are ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2, which is a form of nitrogen oxides [NO_X]), sulfur dioxide (SO_2, which is a form of sulfur oxides [SO_X]), particulate matter less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively) and lead (Pb). Refer to Table 4.5-3, *National and California Ambient Air Quality Standards*.

Table 4.5-3
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California[1]		Federal[2]	
		Standard[3]	Attainment Status	Standards[4]	Attainment Status
Ozone (O_3)	1 Hour	0.09 ppm (180 μg/m³)	Nonattainment	N/A[5]	N/A[5]
	8 Hours	0.07 ppm (137 μg/m³)	N/A	0.075 ppm (147 μg/m³)	Nonattainment
Particulate Matter (PM_{10})	24 Hours	50 μg/m³	Nonattainment	150 μg/m³	Unclassified
	Annual Arithmetic Mean	20 μg/m³	Nonattainment	N/A[6]	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	24 Hours	No Separate State Standard		35 μg/m³	Nonattainment
	Annual Arithmetic Mean	12 μg/m³	Nonattainment	15.0 μg/m³	Nonattainment
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 mg/m³)	Attainment	9 ppm (10 mg/m³)	Unclassified/ Attainment
	1 Hour	20 ppm (23 mg/m³)	Attainment	35 ppm (40 mg/m³)	Unclassified/ Attainment
Nitrogen Dioxide (NO_2)[7]	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	N/A	53 ppb (100 μg/m³)	Unclassified/ Attainment
	1 Hour	0.18 ppm (339 μg/m³)	Attainment	100 ppb (188 μg/m³)	N/A
Lead (Pb)	30 days average	1.5 μg/m³	Attainment	N/A	N/A
	Calendar Quarter	N/A	N/A	1.5 μg/m³	N/A
Sulfur Dioxide (SO_2)	24 Hours	0.04 ppm (105 μg/m³)	Attainment	0.14 ppm	Attainment
	3 Hours	N/A	N/A	N/A	Attainment
	1 Hour	0.25 ppm (655 μg/m³)	Attainment	75 ppb (196 μg/m³)	N/A
	Annual Arithmetic Mean	N/A	N/A	0.030 ppm	Attainment
Visibility-Reducing Particles	8 Hours (10 a.m. to 6 p.m., PST)	Extinction coefficient = 0.23 km@<70% RH	Unclassified	No Federal Standards	
Sulfates	24 Hour	25 μg/m³	Attainment		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m³)	Unclassified		
Vinyl Chloride	24 Hour	0.01 ppm (26 μg/m3)	N/A		

μg/m³ = micrograms per cubic meter; ppm = parts per million; ppb = parts per billion; km = kilometer(s); RH = relative humidity; PST = Pacific Standard Time; N/A = Not Applicable

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter-PM_{10} and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations. In 1990, the California Air Resources Board (CARB) identified vinyl chloride as a toxic air contaminant, but determined that there was not sufficient available scientific evidence to support the identification of a threshold exposure level. This action allows the implementation of health-protective control measures at levels below the 0.010 parts per million ambient concentration specified in the 1978 standard.
2. National standards (other than ozone, particulate matter and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. EPA also may designate an area as *attainment/unclassifiable*, if: (1) it has monitored air quality data that show that the area has not violated the ozone standard over a three-year period; or (2) there is not enough information to determine

the air quality in the area. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

3. Concentration is expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. The Federal 1-hour ozone standard was revoked on June 15, 2005 in all areas except the 14 8-hour ozone nonattainment Early Action Compact (EAC) areas.
6. The Environmental Protection Agency revoked the annual PM_{10} standard in 2006 (effective December 16, 2006).
7. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that EPA standards are in units of ppb and California standards are in units of ppm.

Source: California Air Resources Board and U.S. Environmental Protection Agency, June 7, 2012.

STATE

California Air Resources Board

CARB administers the air quality policy in California. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in Table 4.5-3, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates.

The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMP's also serve as the basis for the preparation of the State Implementation Plan (SIP) for the State of California. Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a State standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a State standard, and are not used as a basis for designating areas as nonattainment.

LOCAL

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the regional agency with jurisdiction over the nine-county region located in the Basin. The Association of Bay Area Governments (ABAG), the Metropolitan Transportation Commission (MTC), county transportation agencies, cities and counties, and various nongovernmental organizations also join in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs.

The BAAQMD is responsible for attaining and/or maintaining air quality in the Basin within Federal and State air quality standards. Specifically, the BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the Basin and to develop and implement strategies to attain the applicable Federal and State standards.

In October 2009, the BAAQMD updated the thresholds in their *1999 CEQA Guidelines* with the *Revised Draft Options and Justifications Report, California Environmental Quality Act Thresholds of Significance*. The October 2009 *Options and Justification Report* establishes thresholds based on substantial evidence.

In May 2011, the BAAQMD adopted its updated *California Environmental Quality Act (CEQA) Air Quality Guidelines*. On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the Thresholds. The court issued a writ of mandate ordering the BAAQMD to set aside the Thresholds and cease dissemination of them until the BAAQMD had complied with CEQA. The court did not determine whether the Thresholds were valid on the merits, but found that the adoption of the Thresholds was a project under CEQA. The BAAQMD has appealed the Alameda County Superior Court's decision. The appeal is currently pending in the Court of Appeal of the State of California, First Appellate District.

In March 2010, the BAAQMD, in cooperation with the MTC and ABAG, published the draft *2010 Bay Area Clean Air Plan*, which, supersedes the *Bay Area 2005 Ozone Strategy.* The *2010 Bay Area Clean Air Plan* updates the *2005 Ozone Strategy* in accordance with the requirements of the CCAA to achieve the following:

- Implement all feasible measures to reduce ozone; provide a control strategy to reduce ozone, particulate matter, toxic air contaminants, and GHGs in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2010 to 2012 time frame.

The control strategy includes stationary-source control measures to be implemented through BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the MTC, local governments, transit agencies, and others. The *2010 Bay Area Clean Air Plan* also represents the Bay Area's most recent triennial assessment of the region's strategy to attain the State one-hour ozone standard.

City of Pittsburg General Plan

The City of Pittsburg General Plan (City General Plan) contains several goals and policies regarding air quality that are applicable to the project site:

Goal-G-9	Work toward improving air quality and meeting all Federal and State ambient air quality standards by reducing the generation of air pollutants from stationary and mobile sources.
Goal-G-10	Reduce the potential for human discomfort or illness due to local concentrations of toxic contaminants, odors and dust.
Policy 9-P-29	Cooperate with the Bay Area Air Quality Management District (BAAQMD) to achieve emission reductions for ozone and its precursor, PM_{10}.
Policy 9-P-30	Cooperate with the BAAQMD to ensure compliance with dust abatement measures during construction.

Contra Costa County General Plan

The following goals and policies are found in the Contra Costa County General Plan and are applicable to the project site:

Goal 8-AA	To meet Federal Air Quality Standards for all air pollutants.
Goal 8-AB	To continue to support Federal, State and regional efforts to reduce air pollution in order to protect human and environmental health.
Goal 8-AC	To restore air quality in the area to a more healthful level.
Goal 8-AD	To reduce the percentage of Average Daily Traffic (ADT) trips occurring at peak hours.
Policy 8-98	Development and roadway improvements shall be phased to avoid congestion.
Policy 8-99	The free flow of vehicular traffic shall be facilitated on major arterials.
Policy 8-103	When there is a finding that a proposed project might significantly affect air quality, appropriate mitigation measures shall be imposed.
Policy 8-104	Proposed projects shall be reviewed for their potential to generate hazardous air pollutants.

GLOBAL CLIMATE CHANGE REGULATORY PROGRAMS

Federal

The FCAA requires the EPA to define national ambient air quality standards (national standards) to protect public health and welfare in the United States. The FCAA does not specifically regulate GHG emissions; however, on April 2, 2007 the U.S. Supreme Court in *Massachusetts v. U.S. Environmental Protection Agency*, determined that GHGs are pollutants that can be regulated under the FCAA. The EPA adopted an endangerment finding and cause or contribute finding for GHGs on December 7, 2009. Under the endangerment finding, the Administrator found that the current and projected atmospheric concentrations of the six, key, well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) threaten the public health and welfare of current and future generations. Under the cause of contribute finding, the Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Based on these findings, on April 1, 2010, the EPA finalized the light-duty vehicle rule controlling GHG emissions. This rule confirmed that January 2, 2011, is the earliest date that a 2012 model year vehicle meeting these rule requirements may be sold in the United States. On May 13, 2010, the EPA issued the final GHG Tailoring Rule. This rule set thresholds for GHG emissions that define when permits under the Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. Implementation of the federal rules is expected to reduce the level of emissions from new motor vehicles and large stationary sources.

State

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is occurring, and that there is a real potential for severe adverse environmental, social, and economic effects in the long term. Every nation emits GHGs and as a result makes an incremental cumulative contribution to global climate change; therefore, global cooperation will be required to reduce the rate of GHG emissions enough to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

Executive Order S-1-07. Executive Order S-1-07 proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

Executive Order S-3-05. Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of Cal/EPA created the California Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

Executive Order S-13-08. Executive Order S-13-08 seeks to enhance the State's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of State's first climate adaptation strategy. This will result in consistent guidance from experts on how to address climate change impacts in the State of California.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). California passed the California Global Warming Solutions Act of 2006 (AB 32; *California Health and Safety Code* Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. 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 CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

Assembly Bill 1493. AB 1493 (also known as the Pavley Bill) requires that CARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHG emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State."

To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) in 2004 by adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 and adoption of 13 CCR Section 1961.1 require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty weight classes for passenger vehicles (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily to transport people), beginning with the 2009 model year. Emissions limits are reduced further in each model year through 2016. When fully phased in, the near-term standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term standards will result in a reduction of about 30 percent.

Senate Bill 97. SB 97, signed in August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA.

OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions that would be generated by a proposed project. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible. OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance as described in State CEQA Guidelines Section 15064.7 that will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State.

The Natural Resources Agency adopted the State CEQA Guidelines Amendments prepared by OPR, as directed by SB 97. On February 16, 2010, the Office of Administration Law approved the State CEQA Guidelines Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The State CEQA Guidelines Amendments became effective on March 18, 2010.

Senate Bill 375. SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets.

CARB Scoping Plan

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's Scoping Plan contains the main strategies California will implement to reduce CO_2eq emissions by 174 million metric tons (MT), or approximately 30 percent, from the State's projected 2020 emissions level of 596 million MT CO_2eq[9] under a business as usual (BAU)[10] scenario. This is a reduction of 42 million MT CO_2eq, or almost ten percent, from 2002 to 2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.

CARB's Scoping Plan calculates 2020 BAU emissions as the emissions that would be expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, commercial and residential, industrial, etc.). CARB used three-year average emissions, by sector, for 2002 to 2004 to forecast emissions to 2020. At the time CARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32.

In *Association of Irritated Residents v. California Air Resources Board*, the Superior Court of California for the County of San Francisco (Superior Court) issued a "tentative statement of decision" (Tentative Decision) that prevents CARB from implementing a state-wide GHG regulatory program under AB 32 until the agency complies with the requirements of CEQA. The Tentative Decision partially grants a petition for a writ of mandate brought by a coalition of environmental justice organizations (Petitioners) that alleged that CARB's Scoping Plan violated both AB 32 and CEQA. Although the Superior Court denied all claims related to AB 32, the court found that CARB: 1) failed to adequately discuss and analyze the impacts of alternatives in its proposed Scoping Plan as required by its CEQA implementing regulations; and 2) improperly approved the Scoping Plan prior to completing the environmental review required by CEQA. In upholding the Petitioners' challenge on these two CEQA issues, the Superior Court issued a Peremptory Writ of Mandate and enjoined CARB from further implementation of the Scoping Plan until it complies with all CEQA requirements. Parties to the case had 15 days from the issuance of the Tentative Decision to file objections before the Superior Court issued a final decision in the case.

On March 18, 2011, the Superior Court issued its Final Statement of Decision, which is substantially similar to the Tentative Decision. The Superior Court ruled in favor of CARB concerning AB 32 mandates and how to best reach the GHG reduction goals set by AB 32. However, the Superior Court determined that CARB failed to conduct adequate CEQA review for the Scoping Plan. Specifically, the Superior Court concluded that CARB failed to consider adequate alternatives to the mix of measures adopted in the Scoping Plan, including especially alternatives to cap-and-trade measures, and that CARB improperly began implementing the Scoping Plan measures before its CEQA review process was complete. Therefore, the Superior Court has suspended any further implementation of the measures contained in the Scoping Plan until the State has complied with CEQA.

[9] Carbon Dioxide Equivalent (CO_2eq) - A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

[10] "Business as Usual" refers to emissions that would be expected to occur in the absence of GHG reductions. See http://www.arb.ca.gov/cc/inventory/data/forecast.htm. Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the "definition." It is broad enough to allow for design features to be counted as reductions.

On June 19, 2012, the California First District Court of Appeal ruled in favor of CARB and upheld the Scoping Plan. The decision also found the Scoping Plan to be in compliance with AB 32. The Court determined the entirety of the Scoping Plan "reflects an exercise of sound judgment" and was not arbitrary or capricious.

4.5.3 ENVIRONMENTAL ANALYSIS

METHODOLOGY

Roadway Construction Emissions Model

Emissions for the proposed project were estimated using the Roadway Construction Emissions Model (RCEM) (Version 7.1.2) developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD). RCEM is used to calculate construction emissions associated with linear construction projects and was developed under the guidance of SMAQMD, the California Department of Transportation, CARB, the EPA, and private industry involved in road construction. The model is available from the SMAQMD website.[11]

Where site or project specific data was available, Roadway Construction Emissions factors were modified to reflect the information. Where little or no information was available for the project, default values were selected.

THRESHOLDS OF SIGNIFICANCE

California Environmental Quality Act

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant air quality impact 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.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

Bay Area Air Quality Management District

Under CEQA, the BAAQMD is a commenting responsible agency on air quality within its jurisdiction or impacting its jurisdiction. The BAAQMD reviews projects to ensure that they would: (1) support the primary goals of the latest Air Quality Plan; (2) include applicable control measures from the Air Quality Plan; and (3) not disrupt or hinder implementation of any Air Quality Plan control measures.

The BAAQMD adopted their *CEQA Air Quality Guidelines* to assist lead agencies in evaluating air quality impacts of projects and plans proposed in the Basin. The *CEQA Air Quality Guidelines* provide BAAQMD-recommended procedures for evaluating potential air quality and GHG impacts during the environmental review process consistent with CEQA requirements. In addition to providing new thresholds for GHG emissions, the 2011 *CEQA Air Quality Guidelines* provide updated significance

[11] RCEM is available at: http://www.airquality.org/ceqa/index.shtml

thresholds for criteria pollutants and supersede the BAAQMD's previous CEQA guidance titled *BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans* (1999).

On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the Thresholds. The court issued a writ of mandate ordering the BAAQMD to set aside the Thresholds and cease dissemination of them until the BAAQMD had complied with CEQA. Per CEQA Guidelines Section 15064.7 (Thresholds of Significance) the City of Pittsburg will nonetheless exercise its own discretion to rely on the thresholds within the *Options and Justification Report* (dated October 2009) prepared by the BAAQMD. The BAAQMD *Options and Justification Report* establishes thresholds based on substantial evidence and are consistent with the thresholds outlined within the 2011 *CEQA Air Quality Guidelines.*

If the project proposes development in excess of the established thresholds, as illustrated in Table 4.5-4, *BAAQMD Emission Thresholds*, a significant air quality impact may occur and additional analysis is warranted to fully assess the significance of impacts.

Table 4.5-4
BAAQMD Emissions Thresholds

Pollutant/Precursor	Maximum Annual Emissions (tpy)	Average Daily Emissions (lbs/day) (Construction and Operational)
ROG	10	54
NO_X	10	54
PM_{10}	15	82
$PM_{2.5}$	10	54

tpy = tons per year; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 micrometers or less;
lb/day = pounds per day; PM_{10} = respirable particulate matter with a diameter of 10 micrometers or less;
NO_X = oxides of nitrogen; ROG = reactive organic gases.

Source: Bay Area Air Quality Management District, *Options and Justification Report*, October 2009 and Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2011.

Localized CO Thresholds

The BAAQMD screening criteria provides that the proposed project would result in a less-than-significant impact to localized CO concentrations if the following are met:

- Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

If none of the above criteria are met, then the project would require a quantitative analysis that would compare emissions to the CAAQS.

Health Risk Screening Thresholds

The BAAQMD has developed methods whereby local community risk and hazard impacts from projects for both new sources and new receptors can be determined based on comparison with applicable thresholds of significance and screening criteria and (2) to recommend mitigation measures for these impacts. The screening methods are provided in the BAAQMD guidance document entitled *Recommended Methods for Screening and Modeling Local Risks and Hazards* (May 2010). The BAAQMD guidance provides screening tables to determine whether emissions would create a significant health hazard impact based on project size and receptor distance. Additionally, the BAAQMD recommends that all toxic sources are identified within a 1,000 foot radius of the project site to determine any risk and health hazards.

Greenhouse Gas Emissions Thresholds

Under CEQA, the BAAQMD is a commenting responsible agency on air quality and GHG emissions within its jurisdiction or impacting its jurisdiction. The BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move us towards climate stabilization. If a project would generate GHG emissions above the threshold level, it would be considered to contribute considerably to a significant cumulative impact.

Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an Air District permit to operate. If annual emissions of operational-related GHGs exceed these levels, the proposed project would result in a cumulatively considerable contribution to a cumulatively significant impact to global climate change. Table 4.5-5, *BAAQMD GHG Thresholds*, presents the May 2011 adopted project-level thresholds for GHG emissions.

Table 4.5-5
BAAQMD GHG Thresholds

Project Type	Construction-Related	Operational-Related
Projects other than Stationary Sources[1]	None	Compliance with Qualified Climate Action Plan OR 1,100 $MTCO_2eq/yr$ OR 4.6 $MTCO_2eq/SP^2/yr$
Stationary Sources[1]	None	10,000 $MTCO_2eq/yr$

$MTCO_2eq/yr$ = metric tons of carbon dioxide equivalent per year

Notes:
1: According to the BAAQMD CEQA Guidelines, a stationary source project is one that includes land uses that would accommodate processes and equipment that emit GHG emissions and would require a BAAQMD permit to operate. Projects other than stationary sources are land use development projects including residential, commercial, industrial, and public uses that do not require a BAAQMD permit to operate.
2: SP = service population (residents + employees)

Source: Bay Area Air Quality Management District, *Options and Justification Report*, October 2009 and Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2011.

The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, the BAAQMD recommends quantification and disclosure of construction GHG emissions. The BAAQMD also recommends that the Lead Agency should make a determination on the significance of these construction generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals, as required by the Public Resources Code, Section 21082.2. The Lead Agency is

encouraged to incorporate best management practices to reduce GHG emissions during construction, as feasible and applicable.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Short-Term (Construction) Impacts

- ***CONSTRUCTION OF THE PROPOSED ROADWAY ALIGNMENT COULD RESULT IN THE VIOLATION OF AN AIR QUALITY STANDARD OR CONTRIBUTE SUBSTANTIALLY TO AN EXISTING OR PROJECTED AIR QUALITY VIOLATION.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Short-term air quality impacts are predicted to occur during the grading and construction operations of the proposed project. Temporary impacts from the project and construction activities would include:

- Particulate (fugitive dust) emissions from clearing and grading activities on-site; and
- Exhaust emissions from the construction equipment and the motor vehicles of the construction crew.

Emissions, such as those described above, are generated as a result of the increase in the use of power and vehicle emissions during construction activities. Potential odors generated from the use of diesel construction equipment and asphalt off-gassing during construction operations are temporary in nature and are not considered to be an impact. It should be noted that emissions produced during grading and construction activities are "short-term" in nature as they occur only for the duration of construction.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust (also known as PM_{10} and $PM_{2.5}$) emissions that may have a substantial, temporary impact on local air quality. Fugitive dust may be a nuisance to those living and working within the project vicinity. Fugitive dust emissions are associated with land clearing, ground evacuation, cut and fill operations, and truck travel on unpaved roadways, including demolition activities. Additionally, fugitive dust emissions also vary substantially from day to day, depending on the level of activity, the specific operations, and weather conditions.

PM_{10} and $PM_{2.5}$ are emitted both during construction activities and as a result of wind erosion over exposed soil surfaces. Clearing and grading activities comprise the major sources of construction dust emissions, but traffic and general disturbance of the soil also generates significant dust emissions. PM_{10} and $PM_{2.5}$ emissions can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors making quantification difficult. The highest potential for construction dust impacts would occur during the dry late spring, summer, and early fall months when soils are dry. Despite this variability in emissions, experience has shown that there are a number of feasible control measures that can be reasonably implemented to significantly reduce PM_{10} and $PM_{2.5}$ emissions from construction activities. The BAAQMD's approach to CEQA analysis of construction impacts is to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions. However, construction activities have been quantified using the RCEM and the results are presented below in Table 4.5-6, *Project Construction Emissions*. According to the table, construction emissions for the proposed project would not exceed BAAQMD thresholds for particulate matter during construction.

Table 4.5-6
Projected Construction Emissions

Project Phase	Pollutant (pounds/day)[1, 2]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Grubbing/Land Clearing	7.8	76.0	53.6	13.6
Grading/Excavation	7.2	67.3	53.3	13.4
Trenching	4.7	36.6	52.1	12.3
Paving	3.0	19.0	1.2	1.1
Maximum (pounds/day)	7.8	76.0	53.6	13.6
BAAQMD Threshold	*54*	*54*	*82*	*54*
Threshold Exceeded?	No	Yes	No	No

ROG = reactive organic gases ; NO_X = nitrogen oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

Notes:

1. Emissions calculated using the Roadway Construction Emissions Model, Version 7.1.2, from the Sacramento Metropolitan Air Quality Management District as recommended by the BAAQMD for roadway construction projects. Refer to Appendix B (Air Quality/GHG Modeling Data), for assumptions used in this analysis.
2. PM_{10} and $PM_{2.5}$ emissions assume 50 percent control of fugitive dust from watering and associated dust control measures.

Construction Equipment and Worker Vehicle Exhaust

The terrain within the project area would require grading for the roadway alignment. Construction equipment used for grading would include graders, off-highway trucks, off-highway tractors and scrapers. Paving equipment would include pavers, paving equipment, trenchers and rollers. Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project area, emissions produced on-site as the equipment is used and emissions from trucks transporting excavated materials from the project area. Emitted pollutants would include CO, ROG, SO_X, NO_X, PM_{10}, and $PM_{2.5}$. Exhaust emission factors for typical diesel-powered heavy equipment are based on the RCEM program defaults, which are based on EMFAC2011 and CARB OFFROAD factors. Variables factored into estimating the total roadway construction emissions include: level of activity, length of construction period, number of pieces/types of equipment in use, site characteristics, and the amount of materials to be transported on-site or off-site. A listing of mobile and stationary construction equipment is included in the Air Quality/GHG Modeling Data (refer to Appendix B). The results of the modeling are presented in Table 4.5-6.

As shown in Table 4.5-6, the daily construction emissions for the proposed project would exceed the BAAQMD NO_X thresholds during construction. To reduce this impact, the proposed project would be required to implement Mitigation Measures AQ1 and AQ2. These mitigation measures include, Basic and Enhanced Control Measures recommended by the BAAQMD, a Diesel Reduction Plan to reduce NO_X generated during construction, and controlling visible emissions from off-road diesel powered equipment. As stated previously, the BAAQMD encourages implementation of effective and comprehensive control measures rather than detailed quantification of emissions for CEQA analysis. Mitigation Measure AQ2 would reduce NO_X emissions by requiring a 20 percent reduction comparable to the most recent CARB fleet average and requiring BACT. Additionally, Mitigation Measure AQ3 would require off-road construction equipment to meet Tier 3 off-road emissions standards, which would reduce emissions by approximately 29 percent below typical fleet emissions. Therefore, with the implementation of Mitigation Measures AQ-1 through AQ-3, NO_X emissions would be reduced to a less than significant level.

***Mitigation Measures*:**

AQ1 Prior to issuance of any Grading Permit, the City of Pittsburg Development Services Department shall confirm that the Grading Plans and specifications stipulate that the following basic construction mitigation measures shall be implemented:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints shall be posted. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

AQ2 Prior to issuance of any grading permit, the City of Pittsburg Development Services Department shall confirm that the Grading Plan, Building Plans, and specifications stipulate that the following additional construction mitigation measures shall be implemented for all construction projects:

- All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.

- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Minimizing the idling time of diesel powered construction equipment to two minutes.
- The proposed project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO_X reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
- Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
- Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO_X and PM.
- Requiring all contractors use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines.

AQ3 Prior to issuance of any grading permit, the City of Pittsburg Development Services Department shall confirm that the Grading Plan, Building Plans, and specifications stipulate that off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emissions standards. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

Level of Significance After Mitigation: Less Than Significant.

◆ ***SIGNIFICANT SHORT-TERM CONSTRUCTION DIESEL PARTICULATE MATTER IMPACTS WOULD NOT OCCUR DURING SITE PREPARATION AND PROJECT CONSTRUCTION.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: The proposed project would disturb a total of approximately 92.18 acres. The BAAQMD recommends a health risk screening analysis to assess impacts to sensitive receptors that are within 1,000 feet of the construction area.[12]

[12] Bay Area Air Quality Management District, *BAAQMD Risk and Hazard Screening Analysis Process Flow Chart*, May 31, 2012. (http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Updated%20Screening%20Approach%20Flow%20Chart_May%202012.ashx?la=en)

CARB identified diesel engine particulate matter as a toxic air contaminant in 1998. Mobile sources (including trucks, buses, automobiles, trains, ships and farm equipment) are by far the largest source of diesel emissions. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Diesel exhaust is composed of two phases, either gas or particulate – both contribute to the risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particulate phase has many different types that can be classified by size or composition. The size of diesel particulates of greatest health concern are fine and ultrafine particles. These particles may be composed of elemental carbon with adsorbed[13] compounds such as organics, sulfates, nitrates, metals and other trace elements. Diesel exhaust is emitted from a broad range of on- and off-road diesel engines.

Health risk assessments for diesel engine particulate matter are typically conducted for areas that would expose sensitive receptors to high concentrations of diesel engine particulate over a long period of time. Per guidelines of the California Office of Environmental Health Hazard Assessment (OEHHA) and the California Air Pollution Control Officers Association (CAPCOA), estimating the cancer risk from diesel engine particulate is typically not required for construction activities, as they occur for a short period of time and, therefore, would not measurably increase cancer risk. However, to provide a conservative analysis of construction impacts, a screening analysis was performed using the EPA-approved AERSCREEN model.

Equipment used in construction operations only operate in one location for a short time relative to the length of time required for carcinogenic and chronic health impacts. It should be noted that no non-cancer acute (short-term) reference exposure level has been established for diesel particulates. Although, a cancer risk factor has been established for diesel particulate matter, the OEHHA cancer risk factors assume a continuous exposure over a 70-year time frame. Proposed construction activities would be temporary (24 months) and would not result in a 70-year exposure.

Construction vehicle pollutant emission generators would consist primarily of tractors, graders, pavers, trenchers, and contractor vehicles. Construction emissions utilized within the AERSCREEN model were derived from the RCEM (Version 7.1.2) construction outputs for the proposed project (refer to Table 4.5-6). For cancer-risk potential, only PM_{10} from diesel exhaust (not the inert silicates from dust) is the single most contributing factor.

According to the RCEM that was performed, the greatest PM_{10} emissions would total 54.1 lbs/day, which includes 4.1 lbs/day of diesel exhaust (refer to Appendix B). Typically, the greatest amount of diesel engine particulate matter is generated during grading and earthwork activities. Based upon the on-site emission levels, the aggregate emission rate was input into the AERSCREEN model. This methodology essentially applies all of the diesel emissions over this working area and provides a worst-case assessment of the impacts to sensitive receptors.

The expected diesel construction emission concentrations from the AERSCREEN model are depicted below in Table 4.5-7, *Construction Health Risk*. The worst case annual concentration of diesel exhaust from construction of the project would be 0.028 micrograms per cubic meter ($\mu g/m^3$) and the maximum one-hour concentration would be 0.288 $\mu g/m^3$, with a calculated cancer risk of 0.26 in one million. Based upon the model results, the particulate matter concentrations are below the BAAQMD Chronic and Acute Hazard Index Threshold of 1.0 and the Cancer Risk Threshold of 10 in one million. Therefore, impacts would be less than significant for cancer risks from toxic air emissions during construction activities.

[13] This term is specifically used for gases.

Table 4.5-7
Construction Health Risk

Source	Modeled Annual Concentration	Calculated Cancer Risk (in one million)	Chronic Hazard	Acute Hazard[1]
Construction Emissions	0.028 µg/m^3	*0.26*	0.006	0.005
Thresholds	--	10	1.0	1.0
Exceed Significance?	--	*No*	*No*	*No*
µg = micrograms; m^3 = meters cubed				
Notes: 1. The Reference Exposure Level (REL) for acrolein was used as diesel exhaust does not have an acute effect (only has a carcinogenic and chronic effect).				
Source: Refer to Appendix B, (Air Quality/GHG Modeling Data).				

Mitigation Measures: No mitigation required.

Level of Significance: Less Than Significant.

- ***THE PROPOSED ROADWAY ALIGNMENT WOULD NOT CREATE OBJECTIONABLE ODORS AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: According to the BAAQMD, land uses associated with odor complaints typically include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The project does not include any uses identified by the BAAQMD as being associated with odors.

Construction activity associated with the project may generate detectable odors from heavy-duty equipment exhaust. Construction-related odors would be short-term in nature and cease upon project completion. Any impacts to existing adjacent land uses would be short-term and are considered less than significant.

Mitigation Measures: No mitigation required.

Level of Significance: Less than Significant.

Long-Term Operational Impacts

- ***LONG-TERM MOBILE EMISSIONS WOULD OCCUR AS A RESULT OF PROJECT EMISSIONS.***

Level of Significance: Less Than Significant Impact.

Impact Analysis:

Risk and Health Hazards

The BAAQMD recommends that all TAC and $PM_{2.5}$ sources located within a 1,000 foot radius of the proposed project site be identified to determine any risk and health hazards. The project involves a

roadway extension and would not place sensitive receptors near any existing TAC sources. However, the proposed project would construct a new roadway to the south of the existing residential sensitive receptors. Based on traffic data provided by Fehr & Peers, the proposed roadway extension would have a horizon year daily traffic volume of 21,900 vehicles. Therefore, based on BAAQMD guidance, a screening analysis is recommended.

The BAAQMD has developed screening tables to determine potential $PM_{2.5}$ concentrations and cancer risks generated from surface streets. The screening tables provide county specific data based on roadway volume and receptor distance. Based on the BAAQMD screening tables for Contra Costa County, the $PM_{2.5}$ concentration would be 0.019 $\mu g/m^3$, and the cancer risk (per million) would be 0.73 at the closest sensitive receptors to the proposed roadway.[14] Therefore, impacts would be below the cancer risk threshold of 10 in one million and the $PM_{2.5}$ ambient increase threshold of 0.3 $\mu g/m^3$. Impacts would be less than significant in this regard.

Localized Carbon Monoxide Hotspots

The Basin is designated as in attainment for carbon monoxide (CO). Emissions and ambient concentrations of CO have decreased dramatically in the Basin with the introduction of the catalytic converter in 1975. No exceedances of the CAAQS or NAAQS for CO have been recorded at nearby monitoring stations since 1991.[15] As a result, the BAAQMD screening criteria notes that that CO impacts may be determined to be less than significant if a project is consistent with the applicable congestion management plan (CMP), or would not increase traffic volumes at intersections to more than 44,000 vehicles per hour for regular intersections, or would not increase traffic volumes at intersections to more than 24,000 vehicles per hour for intersections with limited mixing zones (e.g., tunnels, garages, overpasses, etc.).

The project's traffic impacts are analyzed within Section 4.13, *Transportation/Traffic*. Based on the data within Section 4.13, the signalized study intersections would generally improve as a result of the proposed project. The Buchanan Road/Somersville Road intersection would improve from a deficient level of service (LOS) to an acceptable LOS during both AM and PM peak hours as traffic would divert from Buchanan Road to the proposed James Donlon Boulevard extension. The intersections at either end of the proposed James Donlon Boulevard extension would also operate acceptably. Additionally, the Oak Grove Road/Treat Boulevard intersection would have the greatest number of peak hour vehicles with 7,690 vehicles during the AM peak hour during cumulative with project conditions. Therefore, the proposed project would not increase traffic volumes to 44,000 vehicles per hour for regular intersections, nor would the project increase traffic volumes to more than 24,000 vehicles per hour for intersections with limited mixing zones. Impacts related to CO concentrations would be less than significant.

Mitigation Measures: No mitigation required.

Level of Significance: Less than Significant.

Consistency with Regional Plans

- ***REGIONAL AIR QUALITY EMISSIONS RESULTING FROM THE PROPOSED ROADWAY ALIGNMENT WOULD NOT CONFLICT WITH THE LOCAL AIR QUALITY MANAGEMENT PLAN.***

[14] Bay Area Air Quality Management District, *Roadway Screening Analysis Tables*, April 29, 2011. (http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/County%20Surface%20Street%20Screening%20Tables%20Dec%202011.ashx?la=en)
[15] Bay Area Air Quality Management District, *BAAQMD CEQA Air Quality Guidelines*, May 2011.

Level of Significance: Less Than Significant Impact.

Impact Analysis: A potentially significant cumulative impact to air quality would occur if the proposed project would conflict with or obstruct the implementation of the applicable air quality management or attainment plan. The primary concern is that the proposed project related impacts have been properly anticipated in the regional air quality planning process, and reduced whenever feasible. Therefore, it is necessary to assess the proposed project's consistency with the local air quality plan.

The most recently adopted air quality plan in the Basin is the *2010 Bay Area Clean Air Plan* (*Clean Air Plan*). This *Clean Air Plan* outlines how the San Francisco Bay Area will attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions. The project proposes to extend James Donlon Boulevard from the western boundary of the approved Sky Ranch II Subdivision to Kirker Pass Road. The proposed roadway alignment would be constructed through an area that falls within the jurisdiction of Contra Costa County and within the City of Pittsburg's Planning Area and Urban Limit Line. The extension is identified within the City General Plan as a project that could relieve existing traffic congestion on Buchanan Road, as well as providing a regional east-west access route and, thus, is consistent with the City General Plan. Given that the *Clean Air Plan* is based on City General Plan land use designations and the proposed project would maintain agriculture and open space surrounding the proposed roadway alignment, it would be consistent with the land use assumptions in the *Clean Air Plan*. Therefore, impacts would be less than significant.

Mitigation Measures: No mitigation required.

Level of Significance: Less then Significant.

Greenhouse Gas Emissions

- ***IMPLEMENTATION OF THE PROPOSED PROJECT COULD GENERATE GREENHOUSE GAS EMISSIONS THAT COULD HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT AND COULD CONFLICT WITH AN APPLICABLE GREENHOUSE GAS REDUCTION PLAN, POLICY, OR REGULATION.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: The project's existing and "business as usual" GHG emissions have been calculated for the proposed project. As previously stated, "business as usual" refers to emissions that would be expected to occur in the absence of GHG reduction measures. The proposed project would extend an arterial roadway to serve regional circulation needs, provide a secondary access route, and relieve traffic congestion in the project area. As the project would relieve congestion and improve connectivity, it would serve as a GHG reduction measure. Therefore, the 2025 No Project scenario would represent "business as usual" conditions. The 2025 No Project scenario (business as usual) allows for a more direct comparison of existing and proposed conditions to more adequately account for what the "net" emissions would be.

Table 4.5-8, *Vehicle Miles Traveled and Greenhouse Gas Emissions*, compares the existing scenarios with the 2025 Nor Project and 2025 With Project scenarios. Based on the traffic data provided by Fehr & Peers, total daily vehicle miles traveled (VMT) in the project area would be 184,124,200 during the 2025 No Project scenario and 184,055,220 during the 2025 With Project scenario. Vehicle hours traveled (VHT) in the project area would be 7,145,900 in the No Project scenario and 7,140,500 in the With Project scenario. As depicted in Table 4.5-8, implementation of the proposed project would reduce VMT by 69,000 miles per day. Additionally, VHT would be reduced by 5,400 hours per day. Implementation

of the proposed project would improve the efficiency of the circulation system in the area, thereby reducing VMT and VHT.

Table 4.5-8
Vehicle Miles Traveled and Greenhouse Gas Emissions

Scenario	VMT[1]	VHT[1]	Emissions (metric tons per year)[2]	
			CO_2	CO_2 (Pavley I+LCFS)
Construction	N/A	N/A	1,428	N/A
Existing	136,035,200	4,049,000	23,727,829	20,082,067
2025 No Project	184,124,200	7,145,900	32,115,714	27,181,160
2025 With Project	184,055,200	7,140,500	32,103,678	27,170,973
Change from No Project	*-69,000*	*-5,400*	*-12,035*	*-10,186*

VMT = Vehicle Miles Traveled; VHT = Vehicle Hours Traveled; CO2 = carbon dioxide; LCFS = Low Carbon Fuel Standard; N/A = Not Applicable

Notes:
1. VMT and VHT are based on data from the project study area (surrounding roadways within the study are and the proposed James Donlon Boulevard Extension) provided by Fehr & Peers.
2. Emissions calculated using EMFAC2011.

Table 4.5-8 also depicts the estimated future emissions from vehicles traveling within the project limits. Based on the VMT data, implementation of the proposed project would reduce GHG emissions by 12,035 metric tons per year. With the implementation of the AB 1493 Pavley emissions reductions and the Low Carbon Fuel Standard, automobile GHG emission would be reduced overall and implementation of the proposed project would reduce emissions by 10,186 metric tons per year.

The proposed project would provide better traffic flow through project area and reduce vehicle CO_2 emissions by 12,035 metric tons per year. Also, the project would reduce overall travel time, resulting in 5,400 less VHT than No Project conditions. For these reasons, and considering further emissions improvements under AB 1493, CO_2 emissions for the proposed project would be less than the No Project conditions. As the proposed project would result in a decrease in CO_2 emissions, impacts would be considered less than significant.

Consistency with Applicable GHG Plans, Policies or Regulations

The City does not currently have an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Therefore, the proposed project would not conflict with an adopted plan, policy, or regulation pertaining to GHGs. Also, as described above, the proposed project would result in a reduction in VMT, VHT, and would reduce CO_2 emissions by 12,035 metric tons per year. The project would not hinder the State's GHG reduction goals established by AB 32. Thus, a less than significant impact would occur in this regard.

Mitigation Measures: No mitigation required.

Level of Significance: Less than Significant.

4.6 BIOLOGICAL RESOURCES

Information in this section is based on *James Donlon Boulevard Extension Planning Survey Report* (H.T. Harvey & Associates, 2008a), *James Donlon Boulevard Extension Tree Survey Report* (H.T. Harvey & Associates, 2008b), *James Donlon Boulevard Extension Special-Status Species Report for CEQA Compliance* (H.T. Harvey & Associates, 2008c), *James Donlon Boulevard Extension Alternative Alignment Assessment* (H.T. Harvey & Associates, 2012a), and *East Contra Costa County HCP/NCCP Planning Survey Report for James Donlon Boulevard Extension* (H.T. Harvey & Associates, 2012b), all prepared by H.T. Harvey & Associates in 2008 and 2012. These documents are included in this EIR in Appendix C and Appendix C.1, *James Donlon Boulevard Extension Planning Survey Report*; Appendix C.2, *Tree Survey Report*; Appendix C.3, *Special-Status Species Report for CEQA Compliance*; Appendix C.4, *Alternative Alignment Assessment*; and Appendix C.5, *Planning Survey Report*.

4.6.1 ENVIRONMENTAL SETTING

The majority of the special-status plant and wildlife species and sensitive biological resources that occur in east Contra Costa County (County), and that could potentially occur along the proposed James Donlon Boulevard Extension (proposed project), are covered under the 2006 East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). The HCP/NCCP was developed to minimize and mitigate impacts to plant and wildlife species and their habitats resulting from the loss of open space projected to occur in eastern Contra Costa County. The City of Pittsburg (City) adopted the HCP/NCCP in 2007, and the James Donlon Boulevard Extension Project is a covered activity under the HCP/NCCP. Planning surveys for HCP/NCCP-covered and no-take species have been conducted for the proposed project per the requirements of the HCP/NCCP (refer to Appendix C.5).

METHODS

Background Review

Specific habitat requirements and the locations of known occurrences of special-status species were the principal criteria used to determine which species may potentially occur in the project area. H.T. Harvey & Associates biologists reviewed proposed project plans, the HCP/NCCP, aerial photos and topographic maps, the California Department of Fish and Wildlife's (CDFW's, formerly the California Department of Fish and Game), California Natural Diversity Database (CNDDB 2012), Calflora (Calflora 2012), the Consortium of California Herbaria (Consortium of California Herbaria 2012), the California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Vascular Plants of California (CNPS 2012), the Jepson Manual (Hickman 1993), the Contra Costa County Breeding Bird Atlas (Glover 2009), and other relevant scientific literature, technical databases, and resource agency reports in order to assess the current distribution of special-status plant and wildlife species in the project vicinity. For the purposes of this analysis, the general vicinity of the proposed project is defined as the area within a five-mile radius.

Field Surveys

Planning surveys for the proposed project were conducted in 2007, 2008, and 2011 within the survey area for the proposed project. Surveys were conducted within the proposed project area as follows:

- Targeted, protocol-level blooming period surveys were conducted by H.T. Harvey & Associates for late-blooming special-status plant species on 10, 11, and 12 July and 1, 7, 8, and 9 August 2007. Protocol-level surveys for spring-blooming plants were conducted on 13 March and 30 April 2008.

- A reconnaissance-level survey was conducted by H.T. Harvey & Associates on 29 November 2011 for all HCP/NCCP-covered and no-take wildlife species, all special-status wildlife species not covered under the HCP/NCCP, and their habitats. Suitable habitat locations were mapped for special-status species and for suitable breeding habitat for covered branchiopods.
- Reconnaissance-level surveys were conducted by H.T. Harvey & Associates on 29 and 30 November 2011 and 1 December 2011 to identify habitats that could potentially support special-status plant species. For portions of the proposed project within the 2011 survey area that do not overlap with the 2007 and 2008 survey areas, no protocol-level surveys have been conducted.
- A reconnaissance-level survey was conducted by H.T. Harvey & Associates to evaluate suitable breeding and roosting habitat for HCP/NCCP-covered and no-take bird species (e.g., white-tailed kites [*Elanus leucura*], golden eagles [*Aquila chrysaetos*], and burrowing owls [*Athene cunicularia*]) on 10 July 2007. The survey identified burrows suitable for burrowing owls and trees suitable for nesting raptors. Potential suitable habitat for other special-status avian species (e.g., loggerhead shrikes [*Lanius ludovicianus*] and grasshopper sparrows [*Ammodramus savannarum*]) was also surveyed.
- A survey on 31 July 2007 was conducted by H.T. Harvey & Associates for suitable habitat for San Joaquin kit fox (*Vulpes macrotis mutica*). The survey identified suitable dens for San Joaquin kit foxes and burrows of prey, such as California ground squirrels (*Spermophilus beecheyi*). Potential suitable habitat for the American badger (*Taxidea taxus*) was also surveyed.
- A survey was conducted by H.T. Harvey & Associates on 1 August 2007 for suitable habitat for the Townsend's big-eared bat (*Corynorhinus townsendii*) and ringtail (*Bassariscus astutus*). This survey also identified habitat for other special-status bats, such as the pallid bat (*Antrozous pallidus*).
- A survey was conducted by H.T. Harvey & Associates on 1 August 2007 to evaluate potentially suitable habitat for the California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), and giant garter snake (*Thamnophis gigas*), foothill yellow-legged frogs (*Rana boylii*) and western pond turtles (*Actinemys marmorata*). The survey focused on the lowland drainage areas to identify suitable habitat.
- A survey was conducted by Helm Biological Consulting on 8 August 2007 for potential habitat for HCP/NCCP-covered branchiopod species within the survey area.

SPECIAL-STATUS SPECIES AND SENSITIVE HABITATS

Nine distinct land cover types were identified within the project area: annual grassland, native grassland, ruderal, oak savanna, oak woodland, intermittent stream, ephemeral stream, rock outcrop, and urban. Table 4.6-1, *Summary of Land Cover Types*, provides the total acreage of each identified land cover type within the project area, and Figure 4.6-1, *Land Cover Types/Project Area*, provides the location and extent of these land cover types in the project area.

Table 4.6-1
Summary of Land Cover Types

Biotic Habitat/Land Use Type	Total Acreage within Project Area (acres)
Annual Grassland	51.2
Rock Outcrop	20.7
Oak Savanna	11.2
Urban	5.8
Intermittent Stream	1.3
Ephemeral Stream	0.6
Ruderal	1.2
Oak Woodland	0.1
Native Grassland	<0.1
TOTAL:	92.2

Source: H. T. Harvey & Associates, 2012b; refer to Appendix C.5

Each land cover type mapped within the project area is described below in decreasing order of extent.

Annual Grassland

The annual grassland land cover type occurs throughout the project area on rolling hills, drainage banks, and swales, comprising a total of 51.2 acres. All other land cover types in the project area exist as inclusions within the matrix of annual grassland habitat that typifies the general project area. The majority of this annual grassland habitat is dominated by introduced annual grasses such as wild oats (*Avena* sp.), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), rattail fescue (*Vulpia myuros*), and mouse barley (*Hordeum murinum*). In some areas, significant stands of native grasses, such as alkali wild-rye (*Leymus triticoides*), also occur. These areas are characterized by less than the 25 percent cover of native grasses (25 percent cover is required by the HCP/NCCP for classification as the native grassland land cover type). Some fairly undisturbed areas of grassland support a large complement of native forb species. Fall-blooming native forbs that occur in these areas include Great Valley gumweed (*Grindelia camporum*), narrow-leaf milkweed (*Asclepias fascicularis*), common yarrow (*Achillea millefolium*), hairy golden aster (*Heterotheca sessiliflora*), gray mule ears (*Wyethia helenioides*), doveweed (*Eremocarpus setigerus*), and common bedstraw (*Galium aparine*). Spring-blooming species such as blue dicks (*Dichelostemma capitatum*), arroyo lupine (*Lupinus succulentus*), and miniature lupine (*Lupinus bicolor*) also occur in this cover type.

Rock Outcrop

A geologic uplift feature occurs along the length of the project area where sandstone shelves have been exposed in layers along hillslopes and hill crests. In some areas, these shelves have been exposed by erosion in stream banks and beds. Approximately 20.7 acres of the project area are characterized by 40 to 80 percent ground cover of rock outcrops, where exposed bedrock is intermixed with extremely shallow, rocky soils. In several of these areas, interesting features occur, such as small, shallow grottoes, small slot canyons, exposed cliffs up to 10 feet high, and shallow depressions on horizontal rock faces that may be subject to spring ponding. The rocks themselves appear to be soft, possibly somewhat calcareous sandstone, and no obvious ultramafic or serpentinite features were observed. However, a few individuals of plant species with "weak or indifferent" affinities for serpentine soils, including California plantain (*Plantago erecta)* and tuberous sanicle (*Sanicula tuberose)*, were observed in the especially thin soils in rock outcrop areas.

Kirker Creek

KIRKER PASS RD

LEGEND

- Project Area (92.2 ac)
- Kirker Creek (No Impact) *

Land Cover Types

- Annual Grassland (51.2 ac)
- Native Grassland (<0.1 ac)
- Ruderal (1.2 ac)
- Oak Savanna (11.2 ac)
- Oak Woodland (0.1 ac)
- Intermittent Stream (1.33 ac)
- Ephemeral Stream (0.62 ac)
- Rock Outcrop (20.7 ac)
- Urban (5.8 ac)

* No Impacts are calculated for the clear-span bridge crossings over Kirker Creek

Source: H.T. Harvey & Associates, October 2012.

0 600'

11/28/12 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Land Cover Types/Project Area

Figure 4.6-1

Vegetation in these rock outcrop areas is dominated by many of the same non-native annual grasses that occur in areas mapped as grasslands (e.g., wild oats, soft chess, rattail fescue) and by native Great Valley gumweed. These areas also support sparsely distributed native grasses such as purple needlegrass (*Nassella pulchra*). A relatively high concentration of fairly uncommon and/or native coastal shrubs and sub-shrubs occur in close association with the thin soils of the rock outcrops, including California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), and California matchweed (*Gutierrezia californica*). Uncommon native herbs such as vinegarweed (*Trichostema lanceolatum*), naked buckwheat (*Eriogonum nudum*), and San Joaquin tarweed (*Holocarpha obconica*) occur in these areas as well. During spring plant surveys, several other native, spring-blooming, annual forb species were found to be associated with the regionally uncommon edaphic conditions and geomorphic structure that provide the foundation for this land cover type on the project site. These include purple owl's clover (*Castilleja exserta*), pygmy weed (*Crassula connata*), and many-stemmed gilia (*Gilia clivorum*).

Oak Savanna

The 2005 National Agricultural Imagery Program aerial photographs for the region surrounding the project area indicate a large, contiguous band of oak savanna habitat that is clearly distinct from adjacent grasslands, and that extends into the project area from the southeast. Oaks within this habitat tend to be concentrated on hillcrests, as well as in drainages with steep, tall banks. This oak savanna land cover type, defined by the HCP/NCCP as grasslands with an overall tree canopy cover of 5 to 10 percent, comprises approximately 11.2 acres of the project area. Portions of the rock outcrop land cover type occur within this belt of oak savanna, and could alternatively be considered oak savanna with frequent rock outcrops, as these areas fit HCP/NCCP definitions of either land cover type.

Plant species found in the herbaceous portion of the oak savanna land cover type are similar to those observed in the annual grassland land cover type, with dominants such as wild oats, soft chess, ripgut brome, hairy golden aster, and common yarrow. However, some plants, such as California goldenrod (*Solidago californica*), were only observed in areas near tree canopies. Oak savanna with rockier soils located near areas mapped as rock outcrops support a complement of coastal scrub species similar to those found in rock outcrop areas, including California sagebrush, California matchweed, and coyote brush. Within the tree stratum, the oak savanna is dominated by blue oaks (*Quercus douglasii*), although valley oaks (*Quercus lobata*) frequently occur near drainages. Some trees on the site are morphologically similar to both *Quercus* species, and may be hybrids. California buckeyes (*Aesculus californicus*) also occur sporadically throughout the oak savanna habitat in drainages, toeslope areas, and occasionally on hillsides. The oaks within the project area are generally mature to senescent, and several trees on the site are greater than four feet in diameter at breast height.

Urban

Developed portions of the project area are classified as urban, per the definition of this land cover type in the HCP/NCCP, and consist of the hardscape area on Kirker Pass Road. This area supports little or no vegetation. Sparsely vegetated areas near the roadside support invasive species such as stinkwort (*Dittrichia graveolens*), yellow star-thistle (*Centaurea solstitialis*), and Italian thistle (*Carduus pycnocephalus*). Two ornamental trees occur by the roadside within the project area, a red ironbark (*Eucalyptus sideroxylon*) and a mimosa tree (*Albizia julibrissin*). This land cover type comprises approximately 5.8 acres of the project area.

Stream (Intermittent and Ephemeral)

As shown in Figure 4.6-1, *Land Cover Types/Project Area*, three intermittent streams and three ephemeral streams occur in drainages throughout the project area. The mapping for stream land cover types in the HCP/NCCP is based on the nature of the hydrological inputs a watercourse receives, and does not represent CDFW, U.S. Army Corps of Engineers (USACE), or Regional Water Quality Control Board (RWQCB) jurisdictional mapping. Based on the HCP/NCCP mapping methodology, approximately 1.3 acres of intermittent streams and 0.6 acre of ephemeral streams are present within the project area. Using more detailed delineation methodology based on USACE guidance, these areas support 1.27 acres of wetlands and 0.06 acre of other waters (i.e., open stream channel). Intermittent streams have seasonally flowing water, are mainly driven by a rainy season groundwater rise, and are supplemented by incident rainfall and runoff from the surrounding watershed. Ephemeral streams are not affected by groundwater and only convey water during or immediately after precipitation events. Within the project area, ephemeral streams are either not incised or have remnant tall banks from historical flows. Intermittent streams support true beds and banks, with banks from 4 to 7 feet tall depending on the stream. Although the HCP/NCCP classifies Kirker Creek as perennial, all streams in the project area are considered intermittent because they lack continuous flow during the dry season[1].

Vegetation within the various streams reflects differences in hydrological inputs. In ephemeral streams, vegetation is not significantly altered compared to other grassland, rock outcrop, or oak savanna areas (depending on which land cover type the stream passes through). Occasionally, these streams support a higher proportion of non-native facultative hydrophyte Italian wildrye (*Lolium multiflorum*) compared to nearby hillsides and upland terraces. In one drainage, blue oaks grow on the upper stream banks in an area of oak woodland habitat (described below). These drainages do not support hydric soils. Intermittent streams in the project area are either unvegetated with a consolidated, exposed rock bed and banks (in rock outcrop areas) or support hydrophytic vegetation such as saltgrass (*Distichlis spicata*), rabbitsfoot grass (*Polypogon monspeliensis*), alkali mallow (*Malvella leprosa*), spiny clotbur (*Xanthium spinosum*), bird's foot trefoil (*Lotus corniculatus*), brass buttons (*Cotula coronopifolia*), and sticky sand-spurry (*Spergularia macrotheca*). Scattered tree tobacco (*Nicotiana glauca*) occurs in sandy low terraces. Soils in these streams tend to show clear hydric features and are typically sandier than surrounding upland soils.

Ruderal

Ruderal areas of the site consist of several dirt ranch roads, with compacted, graded soils and sparse, weedy vegetation, comprising approximately 1.2 acres of the project area. The road complex is decades old, as the roads are visible on the U.S. Geological Survey (USGS) topographic maps for the Clayton and Antioch South 7.5-minute Quadrangles, which were last photorevised in the early 1980s. These roads are generally graded at sufficient widths for two cars to pass, but are otherwise unimproved and lack gravel beds. Many of the invasive plant species found in grasslands, drainages, and oak savanna within the interior of the project area are associated with these roads. Such invasive species include Italian thistle, milk thistle (*Silybum marianum*), and Russian thistle (*Salsola tragus*), which generally decrease in abundance with increasing distance away from the roads. Some mat-forming vegetation, such as prostrate spurge (*Chamaesyce prostrata*) and filarees (*Erodium* spp.), occurs on road surfaces.

[1]John Kopchik, Executive Director, East Contra Costa County Habitat Conservancy. Pers. comm. to S. Rottenborn during a 19 June 2012 site visit.

Oak Woodland

One on-site ephemeral drainage supports a continuous canopy of blue oak trees, which are rooted along the upper stream banks (refer to Figure 4.6-1, *Land Cover Type/Project Area*). The increased canopy cover along this drainage indicates a land cover type separate from oak savanna based on definitions in the HCP/NCCP. This land cover type comprises approximately 0.1 acre of the project area. The height of the canopy in this drainage is approximately 30 to 40 feet, which is generally shorter than the canopy in the nearby oak savanna land cover type, and the oak trees along the drainage appear younger on average compared to those in the nearby oak savanna. The oak woodland habitat completely shades the bed of the ephemeral stream below.

Native Grassland

Native grassland habitat, defined by the HCP/NCCP as areas with at least 25 percent ground cover of native grasses, was delineated along the eastern banks of Kirker Creek and in a small patch leading up to rock outcrops on a south-facing hillside during spring surveys of the project area. These areas are dominated by non-native annual grasses such as wild oats and soft chess, but support at least 25 percent cover of native perennial grasses. Purple needlegrass forms dense-to-sparse populations in these areas, and is intermixed with native alkali wild-rye and Italian wild-rye. In total, less than 0.1 acre of the project area supports at least 25 percent native grass cover.

SPECIAL-STATUS PLANT SPECIES

HCP/NCCP-Covered and No-take Plant Species

The HCP/NCCP determines the potential for occurrence of covered and no-take plant species based on the presence of land cover types within the project area. Based on the land cover mapping described above, eleven special-status plant species covered under the HCP/NCCP could potentially occur within the project area: the Mount Diablo manzanita (*Arctostaphylos auriculata*), brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), big tarweed (*Blepharizonia plumosa*), round-leaved filaree (*California macrophylla*), Mt. Diablo fairy lantern (*Calochortus pulchellus*), recurved larkspur (*Delphinium recurvatum*), Diablo helianthella (*Helianthella castanea*), Brewer's dwarf flax (*Hesperolinon breweri*), showy madia (*Madia radiata*), and adobe navarretia (*Navarretia nigelliformis* ssp. *nigelliformis*). An additional six HCP/NCCP no-take species could also potentially occur: large-flowered fiddleneck (*Amsinckia grandiflora*), alkali milk-vetch (*Astragalus tener* var. *tener*), Mt. Diablo buckwheat (*Eriogonum truncatum*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), Contra Costa goldfields (Lasthenia conjugens), and caper-fruited tropidocarpum (*Tropidocarpum capparideum*).

One of these 17 special-status plant species, the Mount Diablo manzanita, is not expected to occur in the project area because it occurs in chaparral or coast live oak woodland habitats, which do not occur on the project site. Protocol-level surveys, as described under subsection *Methods*, provided above, were performed for the remaining 16 species, including summer and fall-blooming species in 2007 and for the remaining spring-blooming species in spring 2008 within the original survey area. Table 4.6-2, *Covered and No Take Plant Species*, summarizes the results of these surveys.

Table 4.6-2
Covered and No-Take Plant Species

Common Name	Species Name	Legal Status	Survey Outcome
Alkali-milk-vetch	*Astragalus tener var. tener*	HCP/NCCP No-Take, CNPS 1B.2	Not observed during focused survey. Determined to be absent.
Brittlescale	*Atriplex depressa*	HCP/NCCP Covered, CNPS 1B.2	Not observed during focused survey. Determined to be absent.
San Joaquin spearscale	*Atriplex joaquiniana*	HCP/NCCP Covered, CNPS 1B.2	Not observed during focused survey. Determined to be absent.
Big tarweed	*Blepharizonia plumose*	HCP/NCCP Covered, CNPS 1B.1	Not observed during focused survey. Determined to be absent.
Round-leaved filaree	*California macrophylla*	HCP/NCCP Covered, CNPS 1B.1	Not observed during focused survey. Determined to be absent.
Mt. Diablo fairylantern	*Calochortus pulchellus*	HCP/NCCP Covered, CNPS 1B.2	Not observed during focused survey. Determined to be absent.
Recurved larkspur	*Delphinium recurvatum*	HCP/NCCP Covered, CNPS 1B.2	Not observed during focused survey. Determined to be absent.
Mt. Diablo buckwheat	*Eriognum truncatum*	HCP/NCCP No-Take, CNPS 1B.1	Not observed during focused survey. Determined to be absent.
Diamond-pelted California poppy	*Eschscholzia rhombipetala*	HCP/NCCP No-Take, CNPS 1B.1	Not observed during focused survey. Determined to be absent.
Diablo helianthella	*Helianthella castanea*	HCP/NCCP Covered, CNPS 1B.2	Not observed during focused survey. Determined to be absent.
Brewer's western flax	*Hesperolinon breweri*	HCP/NCCP Covered, CNPS 1B.2	Not observed during focused survey. Determined to be absent.
Contra Costa goldfields	*Lasthenia conjugens*	HCP/NCCP No-Take, Federal Endangered, CNPS 1B.1	Not observed during focused survey. Determined to be absent.
Showy madia	*Madia radiata*	HCP/NCCP Covered, CNPS 1B.1	Not observed during focused survey. Determined to be absent.
Adobe navarrettia	*Navarretia nigelliformis ssp. nigelliformis*	HCP/NCCP Covered, CNPS 4.2	Not observed during focused survey. Determined to be absent.
Large-flowered fiddleneck	*Amsinckia grandiflora*	HCP/NCCP No-Take, State/Federally Endangered	Not observed during focused survey. Determined to be absent.
Caper-fruited tropidocarpum	*Tropidocarpum capparideum*	HCP/NCCP No-Take, CNPS 1B.1	Not observed during focused survey. Determined to be absent.

Based on the results of the field surveys, there are no known occurrences of HCP/NCCP covered or no-take plant species in the original survey area. Thus, HCP/NCCP-covered or no-take plant species are not expected to occur within the survey area. Protocol-level surveys for these species were not conducted during the 2011 survey. Based on the small extent of the 2011 survey area, its location immediately adjacent to the protocol-level survey area, characterization of the 2011 survey area during the reconnaissance-level surveys, and results from the 2007/2008 protocol-level surveys, HCP/NCCP-covered and no-take species are not anticipated to occur on the project site.

Special-Status Plant Species Not Covered under the HCP/NCCP

Background research identified 73 special-status plant species not covered under the HCP/NCCP that could potentially occur in the proposed project region; refer to subsection *Methods*, above, for further details. Sixty-three of these species were eliminated from consideration due to one or more of the following reasons:

- The project area does not support suitable habitat or land cover types, such as coastal salt marsh, lower montane coniferous forest, or cismontane woodland, that are pine-oak or pine-dominated.
- The species' elevation range does not include elevations found within the project area.
- The species' elevation range overlaps with the project site's elevations, but only at very low or very high areas of the site; in these areas, suitable habitat or land cover types for these species do not occur.
- The species requires specific edaphic features not found within the project area, such as strongly alkaline soils, serpentine soils, or dune sands.
- The species has a highly endemic range which does not include the project area.

The remaining 10 special-status plant species were initially considered to have potential to occur in the project area because necessary edaphic conditions (i.e., moderately alkaline soils, clay soils, and/or rocky soils) are present within the project area, and either:

1. known populations of the species are, or were in the past, located in similar habitats in the vicinity of the project area and/or within the same or an adjacent quadrangle; or
2. known populations of the species exhibit a wide range that could reasonably include the project area, even though no populations are known to occur within the project area vicinity.

Table 4.6-3, *HCP/NCCP Non-Covered Plants*, lists these 10 special-status plant species, with the results of the protocol-level field surveys of the survey area.

Table 4.6-3
HCP/NCCP Non-Covered Plants

Common Name	Species Name	Legal Status	Survey Outcome
Heartscale	*Atriplex cordulata*	CNPS 1B.2	Not observed during focused survey. Determined to be absent.
Congdon's tarplant	*Centromadia parryi ssp. congdonii*	CNPS 4.3	Not observed during focused survey. Determined to be absent.
Hall's bush mallow	*Malacothamnus hallii*	CNPS 1B.1	Not observed during focused survey. Determined to be absent.
Robust monardella	*Monardella villosa ssp. globosa*	CNPS 4.2	Not observed during focused survey. Determined to be absent.
Gairdner's yampah	*Perideridia gairdneri ssp. gairdneri*	CNPS 4.2	Not observed during focused survey. Determined to be absent.
California androsace	*Androsace elongate ssp. acuta*	CNPS 4.2	Not observed during focused survey. Determined to be absent.
Coast rock cress	*Arabis blepharophylla*	CNPS 4.3	Not observed during focused survey. Determined to be absent.

Common Name	Species Name	Legal Status	Survey Outcome
Hogwallow starfish	*Hesperevax caulescens*	CNPS 4.2	Not observed during focused survey. Determined to be absent.
Lobb's aquatic buttercup	*Ranunculus lobbii*	CNPS 4.2	Not observed during focused survey. Determined to be absent.
Rayless ragwort	*Senecio aphanactis*	CNPS 2.2	Not observed during focused survey. Determined to be absent.

Source: H. T. Harvey & Associates, June 2008b

None of the 10 special-status species listed above were observed during the field surveys. Therefore, these species are considered absent from the survey area. Protocol-level surveys for these species were not conducted during the 2011 surveys. During protocol-level surveys and reconnaissance-level surveys, it was determined that habitat conditions are unsuitable or marginal for the majority of the species in Table 4.6-3. Based on the small extent of the 2011 survey area, its location immediately adjacent to the protocol-level survey area, and characterization of the 2011 survey area during the reconnaissance-level surveys, all of the special-status plant species listed above are not anticipated to occur on the project site.

SPECIAL-STATUS WIDLIFE SPECIES

HCP/NCCP-covered and No-take Wildlife Species

Per the requirements of the HCP/NCCP, the potential for occurrence of covered and no-take species is determined based on the presence of mapped land cover types in which suitable habitat for the species may occur (e.g., the HCP/NCCP assumes that all areas of the annual grassland and oak savanna land cover types provide suitable habitat for the San Joaquin kit fox). Alternatively, habitat for some covered species is assumed to occur where suitable habitat elements are present (e.g., large trees provide suitable nesting habitat for golden eagles). Thus, per the HCP/NCCP, the presence of the land cover types and habitat elements mapped within the project area indicate that 20 covered and no-take wildlife species could potentially occur within the project site.

Determinations of whether HCP/NCCP-covered and no-take species potentially occur in the project area are based on specific habitat requirements, the locations of known occurrences of the species in the project vicinity, and the suitability of on-site habitat to support these species as determined by field surveys. The project site lacks suitable habitat and/or is outside the known distributions of the following species: foothill yellow-legged frog, silvery legless lizard (*Anniella pulchra pulchra*), Alameda whipsnake (*Masticophis lateralis euryxanthus*), giant garter snake, and ringtail. These species are determined to be absent from the site, and are not discussed further.

The tricolored blackbird (*Agelaius tricolor*), an HCP/NCCP-covered species and a California species of special concern when breeding, potentially occurs in the project area as an uncommon to rare visitor, migrant, or transient. No suitable breeding habitat for this species occurs on the project site, and tricolored blackbirds are considered species of special concern only when breeding. Thus, this species would have no special status when it occurs on the project site, and is not expected to be substantially affected by the proposed project.

The occurrence of the remaining 14 HCP/NCCP-covered species within the project area and the results of HCP/NCCP-required planning surveys for these species are discussed below.

Covered Large Branchiopods. Federal Listing Status: Threatened/Endangered/ None; State Listing Status: None; HCP/NCCP Status: Covered. Four species of covered large branchiopods could potentially occur within the project area. The specific listing status of each of these species is as follows:

- Longhorn Fairy Shrimp (*Branchinecta longiantenna*). Federal Listing Status: Endangered; State Listing Status: None; HCP/NCCP Status: Covered.
- Vernal Pool Fairy Shrimp (*Branchinecta lynchi*). Federal Listing Status: Threatened; State Listing Status: None; HCP/NCCP Status: Covered.
- Midvalley Fairy Shrimp (*Branchinecta mesovallensis*). Federal Listing Status: None; State Listing Status: None; HCP/NCCP Status: Covered.
- Vernal Pool Tadpole Shrimp (*Lepidurus packardi*). Federal Listing Status: Endangered; State Listing Status: None; HCP/NCCP Status: Covered.

Potential habitat for these branchiopods is defined as any seasonally inundated depression that, on average, ponds (or gently conveys water) 2 inches or greater in depth for 14 or more consecutive days. Characteristics of potential habitat for these large branchiopods are based on the life history of Central Valley endemics (Eriksen and Belk, 1999; Helm, 1998; Helm and Vollmar, 2002). Habitats with rapidly flowing water (e.g., creeks and streams) or semi-to-permanently inundated areas, especially those that support predators (e.g., frogs, crayfish, and fish), are not considered suitable habitat for covered large branchiopods. Overall, the steep terrain in the project area is not characteristic of vernal pool terrain where the majority of large branchiopods occur.

Some rock outcrops in Contra Costa County are known to support populations of the longhorn fairy shrimp. Project site surveys identified six locations in the rock outcrop land cover type that provide potential habitat for covered branchiopods. No sampling of suitable habitat for branchiopods was conducted as part of the planning surveys. No covered branchiopods were observed during site surveys.

California Tiger Salamander (*Ambystoma californiense*). Federal Listing Status: Threatened; State Listing Status: Threatened; HCP/NCCP Status: Covered. California tiger salamanders have disappeared from a significant portion of their range due to habitat loss from agriculture and urbanization, and to the introduction of non-native aquatic predators. The California tiger salamander's current range includes the Great Central Valley of California and adjacent foothill districts, as well as the coastal grasslands from the vicinity of San Francisco Bay south to Santa Barbara County (Storer, 1925, Kucera, 1997). Preferred breeding habitat of the California tiger salamander consists of environments that pond water for a minimum of three to four months annually.

Land cover types within the project area that provide potential upland habitat for California tiger salamanders are annual grassland, ruderal, oak savanna, and oak woodland. In addition, streams within the project area provide suitable movement and foraging habitat for California tiger salamanders. The land cover types within the project area do not provide breeding habitat for this species. In addition, no breeding habitat for California tiger salamanders was observed on-site during the site surveys. Although wetland seeps occur in the project area, these seeps and drainages are associated with streams rather than ponds, and California tiger salamanders require standing water for a minimum of three months for successful larval development. Therefore, no suitable breeding habitat for California tiger salamanders occurs in the project area. The closest pond that provides suitable breeding habitat for tiger salamanders is located approximately 0.2 mile south of the project area. No California tiger salamanders were observed on-site during the planning surveys, which included walking the project site during diurnal site visits.

California Red-legged Frog (*Rana draytonii*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern; HCP/NCCP Status: Covered. The California red-legged frog is the largest native frog in California (Jennings and Hayes 1994). California red-legged frogs have been observed in a number of aquatic and terrestrial habitats throughout their historical range (e.g., natural lagoons, dune ponds, pools in or next to streams, streams, marshlands, sag ponds, and springs, as well as human-created stock ponds, secondary and tertiary sewage treatment ponds, wells, canals, golf course ponds, irrigation ponds, sand and gravel pits containing water, and large reservoirs) (USFWS, 2002). As long as there is standing water of at least several inches in depth and introduced aquatic predators are rare or absent, habitat conditions are potentially suitable to support California red-legged frogs. California red-legged frogs have also been observed inhabiting stock ponds, sewage treatment ponds, and artificial (i.e., concrete) pools that are completely devoid of vegetation (Storer, 1925; Mark Jennings, unpubl. data).

Stream habitats within the project area provide potential movement and foraging habitat for California red-legged frogs, especially during the wet season. All streams and drainages within the project area were examined to determine whether they provide potential breeding habitat for California red-legged frogs. All streams within the project area are ephemeral or intermittent, and lack the slow-moving, longer-lasting stream habitat frequently used by California red-legged frogs for breeding. However, portions of Kirker Creek immediately adjacent to the project area provide pools that pond water long enough for successful breeding of California red-legged frogs. No California red-legged frogs were observed during the planning surveys, when the entire project site was walked during diurnal site visits.

Western Pond Turtle (*Actinemys marmorata*). Federal Listing Status: None; State Listing Status: Species of Special Concern; HCP/NCCP Status: Covered. The western pond turtle occurs in ponds, streams, and other wetland habitats in the Pacific slope drainages of California and northern Baja California, Mexico (Bury and Germano 2008). Ponds or slack-water pools with suitable basking sites (such as logs) are an important habitat component for this species, and western pond turtles do not occur commonly along high-gradient streams. Females lay eggs in upland habitats, in clay or silty soils in unshaded (often south-facing) areas up to 0.25 mile from aquatic habitat (Jennings and Hayes 1994). Breeding habitat is typically found within 600 feet of aquatic habitat, but if no suitable breeding habitat can be found close by, adults may travel overland up to 2.4 miles (Bury and Germano, 2008).

The HCP/NCCP includes maps of habitat for the western pond turtle within the HCP/NCCP coverage area based on a modeling exercise. Western pond turtle habitat on the project site as mapped by the HCP/NCCP is for movement between suitable off-site core habitats only. Site visits confirmed that streams in the project area could be used as movement habitat by western pond turtles, especially during the wet season. No suitable habitat to support populations of western pond turtles (i.e., ponds or long-lived pools in streams with basking sites) occurs in the project area. No western pond turtles were observed during planning surveys, when the entire site was covered on foot.

Golden Eagle (*Aquila chrysaetos*). Federal Listing Status: None; State Listing Status: Fully Protected; HCP/NCCP Status: No-take. In California, the golden eagle is an uncommon permanent resident and migrant throughout the state. The species' breeding range within California excludes only the Central Valley, the immediate coast in the far north, and the southeastern corner of the state (Polite and Pratt 1990). Golden eagles breed in a range of open habitats including desert scrub, foothill cismontane woodlands, and annual or perennial grasslands (Polite and Pratt 1990, Kochert et al. 2002). Nesting habitat is characterized by large, remote patches of grassland or open woodland; a hilly topography that generates lift; an abundance of small mammal prey; and tall structures that serve as nest platforms and hunting perches (Kochert et al. 2002).

There are no high cliffs or suitable large trees within the project area to provide breeding habitat for golden eagles, although transmission towers in the project area provide potential nesting sites. Suitable foraging habitat for golden eagles occurs throughout the project area. No golden eagles or their nests were observed during the project site surveys.

Swainson's Hawk (*Buteo swainsoni*). Federal Listing Status: None; State Listing Status: Threatened; HCP/NCCP Status: Covered. Swainson's hawks are locally common in the Central Valley, but are rare elsewhere in California. The center of the state's population occurs in the agricultural region of western Sacramento County, the Woodland and Davis areas in Yolo County, and in Sutter, Colusa, and Glenn counties near the Sacramento River. Primary foraging habitat for this migratory raptor includes relatively flat, open landscapes comprised of grasslands and agriculture including grain and hay fields, alfalfa, tomato, and several other row crops. Swainson's hawks are rare in the annual grassland landscape of the western and eastern edges of the Central Valley and generally avoid oak savanna habitat and landscapes with hill and canyon topography.

No trees in the project area were determined to be suitable for nesting Swainson's hawks during the surveys; therefore, no suitable breeding habitat for this species occurs in the project area. This species is not anticipated to breed or occur in the vicinity due to the lack of optimal foraging habitat and the high topographic relief of the area, as well as the low density of occurrence of Swainson's hawks in eastern Contra Costa County. Swainson's hawks may forage in the project area during migration. No Swainson's hawks or their nests were observed during planning surveys, when all trees on the project site were inspected for nests of raptors.

White-Tailed Kite (*Elanus leucurus*). Federal Listing Status: None; State Listing Status: Fully Protected; HCP/NCCP Status: No-take. In California, white-tailed kites are found in the Central Valley and along the coast in grasslands, agricultural fields, cismontane woodlands, and other open habitats (Polite 1990, Dunk 1995, Erichsen et al. 1996). Although the species rallied impressively after marked reductions during the early 20th century, populations may be exhibiting declines as a result of increases in habitat loss and disturbance (Dunk 1995, Erichsen et al. 1996). The presence of white-tailed kites is closely tied to the presence of prey species, particularly voles, and prey base may be the most important factor in determining habitat quality for white-tailed kites (Dunk and Cooper 1994, Skonieczny and Dunk 1997).

Trees within the project area provide potentially suitable nesting habitat for white-tailed kites, and surrounding grasslands provide suitable foraging habitat for this species. No white-tailed kites or their nests were observed within the project area during the field surveys, when all trees in the study area were examined for raptor nests.

American Peregrine Falcon (*Falco peregrinus anatum*). Federal Listing Status: None; State Listing Status: Fully Protected; HCP/NCCP Status: No-take. The American peregrine falcon occurs throughout much of the world. In California, they are known to nest along the entire coastline, the northern Coast, and the Cascade and Sierra Nevada ranges. Peregrine falcons nest on ledges and caves on steep cliffs, as well as on human-made structures such as buildings, bridges, and electrical transmission towers. They are known as one of the fastest flying birds of prey, preying almost entirely on birds that they kill while in flight.

It is not anticipated that this species would occur in the project area due to lack of breeding habitat (such as cliffs) in the project vicinity and the lack of suitable concentrations of prey. However, peregrine falcons may occasionally forage in the project area. No peregrine falcons or their nests were observed during the field surveys.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern; HCP/NCCP Status: Covered. Burrowing owls nest in lowland areas throughout much of the state, although populations in most areas of California have declined in recent decades due primarily to development. This species is unique among owls in that it nests in the abandoned burrows of mammals such as the California ground squirrel. Burrowing owls prey upon large insects and small rodents.

One group of ground squirrel burrows was detected approximately 2,000 feet east of the eastern end of the project site, and a single burrow was detected west of the project site. Because no burrows occur within the project site, suitable roosting or breeding habitat for burrowing owls is absent from the site. Further, because few burrows are present in the project vicinity, there is limited potential for burrowing owls to occur in nearby areas. Burrowing owls may forage occasionally in grasslands within the project area, especially during migration. No burrows of California ground squirrels or signs of burrowing owls (e.g., whitewash, pellets, or feathers) were detected within the proposed project boundaries during the field surveys.

Townsend's Big-eared Bat (*Corynorhinus townsendii*). Federal Listing Status: None; State Listing Status: Species of Special Concern; HCP/NCCP Status: Covered. Townsend's big-eared bats are a colonial species and females aggregate in the spring at nursery sites known as maternity colonies. Although the Townsend's big-eared bat is usually a cave-dwelling species, many colonies in central California are found in anthropogenic structures such as the attics of buildings or abandoned mines that mimic cave-like cavities.

The Townsend's big-eared bat is a cavernous habitat obligate (i.e., this species roosts only in cave-like situations), and could occur in suitable rock crevices on the project site. Although shallow grottoes or indentations in some of the rock outcrops are present on-site, they are not nearly deep enough to provide habitat for Townsend's big-eared bats. No other suitable roosting habitat is present along the proposed project alignment. Furthermore, no mines, caves, buildings, or trees with large enough cavities were present within or adjacent to the proposed project. Thus, no suitable breeding or roosting habitat for Townsend's big-eared bats occurs within the project area. Townsend's bats may occur in nearby areas, and could forage occasionally in habitats throughout the project area. No Townsend's big-eared bats, nor their habitat, was observed in the project area during the field surveys, when all rock outcrops on the site were examined for suitable cavities and signs of bats (i.e., fecal pellets and urine staining).

San Joaquin Kit Fox (*Vulpes macrotis mutica*). Federal Listing Status: Endangered; State Listing Status: Threatened; HCP/NCCP Status: Covered. The San Joaquin kit fox typically inhabits California Valley grassland, Lower Sonoran grassland, and desert shrubland habitats (Nelson et al. 2007, Koopman et al. 2001). For San Joaquin kit foxes to survive in these habitats, a stable prey base and a permanent denning system must be present. Prey typically includes kangaroo rats (*Dipodomys* sp.), murid rodents, and California ground squirrels. Ground squirrels and ground squirrel burrows are important components of suitable denning and breeding habitat for San Joaquin kit foxes. Warrick and Cypher (1998) noted that kit foxes avoided rugged, steep terrain and preferred flatter, gentler rolling hills to flatter plains. Therefore, potentially suitable San Joaquin kit fox denning and breeding habitat occurs in areas flatter, gently rolling hills, or in valleys, where California ground squirrels and their burrows are present.

The project area consists of a mix of rugged hills and flatter valley areas with characteristic grassland habitats, and with matrices of oak woodlands and grasslands in areas of higher elevation. The valleys in the project area, although sloped, are flatter and more suitable to kit fox movement compared to the steeper, adjacent hills, although the valleys quickly taper upslope and become less suitable for foraging and denning due to their narrow nature. Therefore, the portions of the project area that consist of flatter valleys provide potentially suitable San Joaquin kit fox denning and breeding habitat, whereas steeper

slopes and ridgelines do not. No dens (natal or escape) were observed during the field surveys, nor were any canid latrines found among the rock outcrops. High densities of coyotes in riparian areas and in the oak woodland habitat may provide a limiting factor of kit fox occupation of these areas, as coyotes are a main source of kit fox mortality (Disney and Spiegel 1992). However, no coyote sign was observed during the survey. No California ground squirrels or ground squirrel burrows were observed within the project area. Lack of a prey base is a limiting factor of San Joaquin kit fox occupation within suitable habitats (White and Ralls 1993).

Potentially suitable breeding or denning habitat for San Joaquin kit foxes occurs within the flatter areas of the project area. Lack of a prey base and burrows for den starts limits the suitability of habitats on the project site for use by San Joaquin kit foxes for denning or breeding. Potentially suitable movement and foraging habitat for San Joaquin kit foxes occurs throughout the project area, though given this species' currently known distribution, it is not anticipated that San Joaquin kit foxes are present on the site. No evidence of San Joaquin kit foxes (e.g., scats, dens, latrines) was observed in the project area during the field survey.

Special-Status Species Not Covered under the HCP/NCCP

Of the additional special-status wildlife species considered in this analysis (i.e., those not covered under the HCP/NCCP), two are known to occur in the general vicinity of the project area but are not expected to occur on the project site due to the absence of suitable habitat. The yellow-breasted chat (*Icteria virens*) and yellow warbler (*Setophaga petechia*) are California species of special concern that breed and forage in riparian habitat, which is absent from the project site.

Several other special-status wildlife species not covered under the HCP/NCCP may occur in the project area only as uncommon or rare visitors, migrants, or transients, or may forage in the project area while breeding in adjacent areas. However, these species are not expected to breed on the project site. The northern harrier (*Circus cyaneus*), long-eared owl (*Asio otus*), short-eared owl (*Asio flammeus*), and Vaux's swift (*Chaetura vauxi*) could all potentially forage in the project area in low numbers and/or infrequently, primarily during migration, mainly during the winter months. However, suitable breeding habitat for these species is absent from the project site. These species are considered species of special concern only when breeding, and thus have no special-status outside breeding areas.

Of the special-status species not covered under the HCP/NCCP, four could potentially breed on the project site: the loggerhead shrike (*Lanius ludovicianus*), grasshopper sparrow (*Ammodramus savannarum*), pallid bat (*Antrozous pallidus*), and American badger (*Taxidea taxus*). The potential occurrence of these species in the project area is discussed in detail below.

Loggerhead Shrike (*Lanius ludovicianus*). Federal Listing Status: None; State Listing Status: Species of Special Concern; HCP/NCCP Status: Not Covered. The loggerhead shrike is distributed throughout much of California, except in high-elevation, heavily forested areas such as the Coast, the Sierra Nevada, the southern Cascades, the Klamath, and the Siskiyou ranges, and the highest parts of the Transverse Ranges (Humple 2008). While the species' range in California has remained stable over time, populations have declined steadily (Cade and Woods 1997). Loggerhead shrikes require the presence of structures for impaling their prey; these most often take the form of thorny, or sharp-stemmed, shrubs or barbed wire (Humple 2008). Ideal breeding habitat for loggerhead shrikes consists of short grass habitat with many perches, shrubs, or trees for nesting, and sharp branches or barbed wire fences for impaling prey.

The loggerhead shrike is common in Contra Costa County in areas of grasslands and oak savannas (Glover 2009). The annual grassland and oak savanna habitats within the project area provide potential breeding and foraging habitat for several pairs of loggerhead shrikes, with small trees or coyote brush

shrubs as potential nesting substrates. In addition, non-breeding loggerhead shrikes may forage within the project area during winter and migration. No loggerhead shrikes were observed on the project site during the field surveys

Grasshopper Sparrow (*Ammodramus savannarum*). Federal Listing Status: None; State Listing Status: Species of Special Concern; HCP/NCCP Status: Not Covered. The grasshopper sparrow is a small, inconspicuous sparrow that nests in short (often grazed) to middle-height, moderately open grasslands with few or no shrubs. Tall grassland heavily overgrown with non-natives is not typically used for nesting unless it is grazed. The grasshopper sparrow nests very locally in the Central Valley and in grassy hills in the Diablo Range in annual grasslands, especially those with wild rye and forbs.

The grasslands on the project site provide potentially suitable breeding habitat for grasshopper sparrows. Only a few pairs, at most, of grasshopper sparrows are expected to nest in the grassland habitat within the project area. No grasshopper sparrows were detected during the field surveys, and the species is not known to breed in the vicinity of the project area (Glover 2009).

Pallid Bat (*Antrozous pallidus*). Federal Listing Status: None; State Listing Status: Species of Special Concern; HCP/NCCP Status: Not Covered. Pallid bats are pale to light brown in color and weigh approximately 24 grams. The Pacific race of the pallid bat is one of the state's largest bat species. They may occur in oak woodlands and at the edge of redwood forests along the coast. Coastal colonies commonly roost in deep crevices in rocky outcroppings, in buildings, under bridges, and in hollow trees. Although crevices are important for day roosts, night roosts often include porches, garages, barns, and highway bridges. Pallid bats may travel up to three miles for water or foraging sites if roosting sites are limited (Harris, 1984). This bat prefers to forage on terrestrial arthropods in dry open grasslands near water and rocky outcroppings or old structures.

Potential habitat for pallid bats occurs in scattered locations throughout the project area. Mature valley oaks and blue oaks with loose bark and cavities, as well as rocky outcroppings, provide potential day-roosting habitat for pallid bats, and rock grottos provide potential night-roosting habitat. Day-roosting habitat used by females during the breeding season between March 1st and August 31st would be considered maternity colony habitat. No pallid bats or signs of pallid bats (i.e., fecal pellets, urine stating) were detected during the field surveys.

American Badger (*Taxidea taxus*). Federal Listing Status: None; State Listing Status: Species of Special Concern; HCP/NCCP Status: Not Covered. American badgers are stocky, burrowing mammals that occur in grassland habitats throughout the western United States. Badgers can have large territories, up to 21,000 acres in size, but territory size varies by sex and season. Badgers are strong diggers and feed primarily on other burrowing mammals, such as ground squirrels. Burrows are used for dens, escape, and predation. Badgers are primarily nocturnal, but are often active during the day. They breed during late summer to early autumn, and females give birth to a litter of young the following spring in March to early April. Coyotes and golden eagles have been known to depredate badgers, but the primary known sources of mortality are automobiles and hunting (i.e., guns, traps and poison).

Grasslands within the project area provide generally suitable denning, foraging, and dispersal habitat for badgers. Based the high mobility of this species and the suitability of grasslands in the project area for denning and foraging, badgers may occur within the project area year-round as breeders, foragers, or dispersers. However, due to the absence of fossorial prey species (i.e., ground squirrels and other small burrowing mammals) in the project area, the number of individual badgers that could occur on the project site would be very low; however, they could occur as an occasional visitor. No American badgers were observed on the project site during the field surveys.

Sensitive and Regulated Plant Communities and Habitats
The CDFW ranks certain rare or threatened plant communities, such as wetlands, meadows, and riparian forest and scrub, as 'threatened' or 'very threatened'. These communities are tracked in the CNDDB. Impacts on CDFW sensitive plant communities, or any such community identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA (California Code of Regulations: Title 14, Div. 6, Chap. 3, Appendix C.5). Furthermore, wetland and riparian habitats are also afforded protection under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the U.S. Fish and Wildlife Service (USFWS). Essential Fish Habitat is identified and regulated by the National Marine Fisheries Service (NMFS) in collaboration with regional, state and local agencies, and is defined as any habitat that is essential to the long-term survival and health of United States fisheries.

CDFW Sensitive Habitats. The bed and banks of four streams in the project area are regulated by the CDFW. Together, these CDFW-regulated habitats comprise approximately 6.0 acre of the project area.

Waters of the U.S./State. The aquatic (extending up to the ordinary high water) and wetland habitats in streams within the project area are considered waters of the U.S. under the Federal Clean Water Act (CWA) and waters of the State under the Porter-Cologne Water Quality Control Act. These streams are also important habitats for a variety of animal species. Together, these areas comprise approximately 1.27 acres of jurisdictional wetlands and 0.06 acre of jurisdictional other waters within the project area.

Protected Trees

All 40 trees within the project area are subject to removal as part of the proposed project. These trees include one mimosa tree, 14 blue oaks, three buckeyes, five almond trees (*Prunus dulcis*), five arroyo willows (*Salix lasiolepis*), one valley oak, one blue elderberry (*Sambucus mexicana*), and approximately 11 trees of unknown species counted using aerial imagery. Of the previously surveyed trees of known species and diameter, 21 trees are protected by the County's Tree Protection and Preservation Ordinance: 14 black oaks; two buckeyes; four arroyo willows; and one valley oak. Of the 11 trees of unknown species and diameter, based on empirical observations in the field, they could be protected by the County's Tree Protection and Preservation Ordinance, as well.

4.6.2 REGULATORY SETTING

FEDERAL

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended, requires all federal agencies to consider listed species in their planning efforts and to take positive actions to further the conservation of these species. Section 9 of FESA prohibits any taking of a listed species. The definition of "take" includes to harass, harm, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. A notable component of this definition is the definition of "harm." "Harm" in the definition of "take" means an act that actually kills or injures protected wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Agency Consultation Sections 7 and 10 of FESA allow the USFWS and the NMFS to approve exceptions to the federal prohibition against take of a listed species. If there is another federal agency involved with a project, Section 7 of FESA requires federal interagency consultation to minimize impacts to listed species. If no other federal agency is involved, Section 10 of FESA is invoked for an area in which several projects would occur, for activities connected to a single project, or for takings as small as a single specimen. Under both Sections 7 and 10, the USFWS and/or the NMFS will evaluate potential effects of the Project and require specific protection measures.

FESA Section 9/Section 10(a)(1)(B) – Fish and Wildlife Species - Section 9 prohibitions on the take of threatened and endangered fish and wildlife species can be addressed under an HCP/permit issued pursuant to Section 10(a)(1)(B) of the FESA, which requires that any authorized incidental take of fish and wildlife species "will not appreciably reduce the likelihood of survival and recovery of the species in the wild."

FESA Section 7 – "Jeopardy" and "Adverse Modification"- Section 7 of FESA requires consultation to assure that federal agency actions "are not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of" critical habitat. The Section 7 "jeopardy" and "adverse modification" requirements extend to all listed species. The courts have held that the "jeopardy" standard for Section 7 is the same as the standard for incidental take authorization under Section 10(a)(1)(B).

FESA Section 3 – Critical Habitat Standards - FESA Section 3(5)(A)(i and ii) sets forth standards to be employed in designating critical habitat for federally listed species. With regard to occupied habitat, FESA Section 3(5)(a)(i) requires that: (1) occupied habitat essential to the conservation of the species must be identified; (2) any special management considerations must be identified; and (3) any special protection must be identified. FESA Section 3(5)(A)(ii) requires that unoccupied habitat essential to the conservation of the species must also be identified.

Federal Clean Water Act (33 U.S.C. 1251 through 1376)

The Federal CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. The main sections pertaining to the proposed project are Sections 401, 402 and 404.

Section 401 of the CWA gives the RWQCB the authority to regulate through 401 Certification any proposed federally permitted activity, which may affect water quality. Among such activities are discharges of dredged or fill material permitted by the USACE pursuant to Section 404 of the CWA. Section 401 requires the RWQCB to provide "certification that there is reasonable assurance that an activity which may result in the discharge to waters of the United States will not violate water quality standards." Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, of which are found as numeric and narrative objectives in each of the nine RWQCB's Basin Plan.

Section 402 establishes a permitting system for the discharge of any pollutant (except dredge or fill material) into waters of the United States.

Section 404 establishes a permit program, administered by the USACE, regulating the discharge of dredged or fill material into waters of the United States, including wetlands. The USACE and U.S. Environmental Protection Agency (EPA) recently clarified and simplified the definition of "fill material" to include any "material placed in waters of the United States where the material has the effect of: (1) replacing any portion of a water of the United States with dry land; or (2) changing the bottom elevation of any portion of the waters of the United States." Examples include, but are not limited to, sand, rock, clay, construction debris, wood chips, and "materials used to create any structure or infrastructure in the waters of the United States." The term "waters of the United States" includes the following:

- all waters that have, are, or may be used in interstate or foreign commerce (including sightseeing or hunting) including all waters subject to the ebb and flow of the tide
- wetlands

- all waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; the use, degradation or destruction of which could affect interstate or foreign commerce
- all impoundments of waters mentioned above
- all tributaries of waters mentioned above
- the territorial seas
- all wetlands adjacent to the waters mentioned above

Under this definition, and in the absence of wetlands, the limits of the USACE's jurisdiction in non-tidal waters extend to the ordinary high water mark, which is defined as "…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area" (33 CFR 328.3(e)).

Wetlands, a subset of jurisdictional waters, are jointly defined by the USACE and EPA as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR⁄328.3(b)). Wetlands generally include swamps, marshes, bogs, and similar areas.

It should be noted that a major change in wetland regulation occurred on January 9, 2001, when the U.S. Supreme Court issued the decision, *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers et al* (SWANCC). The SWANCC decision limited the scope of the USACE's Section 404 CWA regulatory jurisdiction.

The June 19, 2006 U.S. Supreme Court decision on the *Rapanos, Carabell v. The United States of America* case has further limited the definition of "wetlands" and "waters of the United States" under the CWA. The Rapanos decision was a 4-1-4 decision in which four justices advocated a narrower interpretation of the CWA to hold that "waters of the United States" excludes intermittent or ephemeral streams and wetlands without a continuous surface connection to navigable waters.

The USACE and EPA came out with a memorandum on June 5, 2007 in order to provide guidance in implementing the U.S. Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (jointly hereafter Rapanos), which addresses the jurisdiction over waters of the U.S. under the CWA. In accordance with the Rapanos decision, the agencies will continue to assert jurisdiction over traditional navigable water (TNW) and all wetlands adjacent to TNWs; however, jurisdiction can be asserted over waters, including wetlands that are not a TNW, by meeting either of the following standards:

- relatively permanent (i.e., flows year-round, or at least seasonally) non-navigable tributaries of TNW and wetlands with a continuous surface connection with such tributaries
- certain adjacent and non-navigable tributaries not relatively permanent (this requires a case-by-case "significant nexus" analysis to determine whether waters and their adjacent wetlands are jurisdictional; a "significant nexus" may be found where waters, including adjacent wetlands, affect chemical, physical or biological integrity of TNWs).

Migratory Bird Treaty Act (16 U.S.C., Section 703, Supp. I)

The federal Migratory Bird Treaty Act (MBTA; 16 U.S.C., Section 703, Supp. I, 1989) prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The trustee agency that addresses issues related to the MBTA is the USFWS. Species of birds protected under the MBTA include all native birds and certain game birds (USFWS 2005). The MBTA protects whole birds, parts of birds, and bird eggs and nests; and prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described by the Department of the Interior in its 16 April 2003 Migratory Bird Permit Memorandum. Nest starts (nests that are under construction and do not yet contain eggs) are not protected from destruction.

Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or, (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior'' (72 FR 31132; 50 CFR 22.3).

On November 10, 2009, USFWS implemented new rules (74 FR 46835) governing the "take" of golden and bald eagles. The new rules were released under the existing BGEPA which has been the primary regulation protection for unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act.

A programmatic permit would be available to industries or agencies undertaking activities that may disturb or otherwise take eagles on an ongoing operational basis. The USFWS has defined programmatic take as "take that (1) is recurring, but not caused solely by indirect effects, and (2) occurs over the long term and/or in a location or locations that cannot be specifically identified." The second criterion is the key factor that distinguishes programmatic take from any other take that has indirect effects that continue to cause take after the initial action.

In February 2011, the USFWS issued a set of draft guidelines delineating the conditions for issuance of programmatic permits for incidental take of eagles under BGEPA, with particular focus on the wind energy industry. These rules were issued to clarify when take permits may be issued, but do not add any binding requirements beyond those already specified under existing regulations. In April 2012, a proposed rule change was published by the USFWS regarding take permits for golden eagles that would extend the maximum allowable permit life of a programmatic take permit from 5 to 30 years. The rule would also increase the associated fees to cover the actual costs of processing the permit application.

STATE

California Environmental Quality Act

CEQA was adopted in 1970 and applies to actions directly undertaken, financed, or permitted by State and local lead agencies. CEQA requires that agencies inform themselves about the environmental effects of their proposed actions, consider all relevant information, provide the public an opportunity to comment on the environmental issues, and avoid or reduce potential environmental harm whenever feasible. CEQA establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. Regulations for

implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

California Endangered Species Act (California Fish and Game Code 2050 et seq.)

The California ESA (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no State agency consultation procedures under the CESA. For projects that affect both a State and Federal listed species, compliance with the Federal ESA will satisfy the CESA if the CDFW determines that the Federal incidental take authorization is "consistent" with the CESA under California Fish and Game Code Section 2080.1. For projects that will result in a "take" of a State-only listed species, the project proponent must apply for a take permit under Section 2081(b).

California Fish and Game Code

Section 1600 through 1616. Historically, the State of California regulated activities in rivers, streams, and lakes pursuant to Sections 1600-1607 of the California Fish and Game Code. Legislation that took effect on 1 January 2004 repealed California Fish and Game Code Sections 1600-1607 and added Sections 1600-1616. The most important issue to note with this change is that now there is no separation between private/public notifications (previously 1601/1603). California Fish and Game Code Section 1602 requires any person, state or local governmental agency, or public utility to notify the CDFW before beginning any activity that would do one or more of the following:

- substantially obstruct or divert the natural flow of a river, stream, or lake
- substantially change or use any material from the bed, channel, or bank of a river, stream, or lake
- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake

Jurisdictional limits of the CDFW are not as clearly defined by regulation, as are those of the USACE. California Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State. While they closely resemble the limits described by USACE regulations, they include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line); whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, steam, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation.

Sections 2080 and 2081. Section 2080 of the California Fish and Game Code states, "No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission [California Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to Section 2081 of the California Fish and Game Code, the CDFW may authorize individuals or public agencies to import, export, take, or possess, any State-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or a MOU if: (1) the take is incidental to an otherwise lawful activity; (2) impacts of the authorized take are minimized and fully mitigated; (3) the permit is consistent with any regulations adopted pursuant to any

recovery plan for the species; and, (4) the project proponent ensures adequate funding to implement the measures required by the CDFW. The CDFW makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

Sections 2513, 3503, and 3800. California Fish and Game Code Sections 3503, 2513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. Raptors (i.e., eagles, falcons, hawks, and owls) and their nests are specifically protected in California under Fish and Game Code Section 3503.5. Section 3503.5 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." Non-game mammals are protected by California Fish and Game Code §4150, and other sections of the Code protect other taxa.

Native Plant Protection Act (California Fish and Game Code 1900 through 1913)

California's Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The project proponent is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this Act and sections of CEQA that apply to rare or endangered plants; refer to Mitigation Measure BIO1.

Porter-Cologne Water Quality Control Act

The RWQCB is the primary agency responsible for protecting water quality in California. The RWQCB regulates discharges to surface waters under the federal CWA and the California Porter-Cologne Water Quality Control Act. The RWQCB's jurisdiction extends to all waters of the State and to all waters of the U.S., including wetlands (isolated and non-isolated conditions).

The Porter-Cologne Water Quality Control Act gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool in the post SWANCC era, with respect to the State's authority over isolated waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge (should there be no Section 404 nexus). Although "waste" is partially defined as any waste substance associated with human habitation, the RWQCB also interprets this to include fill discharged into water bodies.

LOCAL

City of Pittsburg General Plan

The City of Pittsburg General Plan contains several goals and policies regarding biological resources that are applicable to the project area:

Goal 8-D	Protect conservation areas, particularly habitats that support special-status species, including species that are State or Federally listed as endangered, threatened, or rare.
Goal 9-G-2	Guide development in such a way that preserves significant ecological resources.
Goal 9-G-3	Support the reclamation of wetlands and marshlands along local industrial waterfronts.

Policy 9-P-1 Ensure that development does not substantially affect special-status species, as required by State and federal agencies and listed in Table 9-1. Conduct assessments of biological resources as required by CEQA prior to approval of development within habitat areas of identified special-status species, as depicted in Figure 9-1 (in the General Plan).

Development located in or adjacent to these ecologically sensitive areas must complete a site-specific assessment of biological resources as part of the development review process. The City's environmental review process would be used to impose appropriate mitigation measures as required by State and federal agencies to reduce impacts to sensitive habitat and special-status species.

Policy 9-P-5 Work with Contra Costa County, the East Bay Regional Park District, and the City of Antioch, to expand the regional open-space system in the southern hills to preserve California annual grasslands habitat.

Policy 9-P-9 Establish creek setbacks along riparian corridors, extending a minimum of 50 to 150 feet laterally on each side of the creekbed. Setback buffers for habitat areas of identified special-status species and wetlands may be expanded as needed to preserve ecological resources.

Policy 9-P-10 Prohibit development within creek setback areas, except as part of greenway enhancement (for example, trails and bikeways). Encourage developers to reserve space outside of the creek setbacks where endangered species habitat makes trail development inappropriate.

Policy 9-P-11 Ensure that riparian corridor characteristics are retained. Encourage the retention and/or reestablishment of creeks in the design of new development.

Goal 9-G-5 Preserve and enhance Pittsburg's creeks for their value in providing visual amenity, drainage capacity, and habitat value.

Policy 9-P-15 As part of development plans, require evaluation and implementation of appropriate measures for creek bank stabilization, as well as necessary Best Management Practices (BMPs) to reduce erosion and sedimentation. Encourage preservation of natural creeks and riparian habitat as best as possible.

Policy 9-P-16 Establish development standards for new construction adjacent to riparian zones to reduce sedimentation and flooding. Standards should include:

- Requirements that low berms or other temporary structures such as protection fences be built between a construction site and riparian corridor to preclude sheet-flooding stormwater from entering the corridors during the construction period.
- Requirements for installation of storm sewers before construction occurs to collect stormwater runoff during construction.

Policy 9-P-19 As part of the City's Zoning Ordinance, establish regulations for the preservation of mature trees. Include measures for the replacement of all mature trees removed.

Trees are valuable along creeks and watersheds because their root systems help stabilize topsoil and reduce erosion.

Policy 9-P-20 As part of Project review and approval, establish maintenance districts to ensure uniform maintenance for selected channels and creeks.

Contra Costa County General Plan

The Contra Costa County General Plan contains several goals and policies regarding biological resources that are applicable to the Project:

Goal 8-D To protect ecologically significant lands, wetlands, plant and wildlife habitats.

Goal 8-E To protect rare, threatened and endangered species of fish, wildlife and plants, significant plant communities, and other resources which stand out as unique because of their scarcity, scientific value, aesthetic quality or cultural significance. Attempt to achieve a significant net increase in wetland values and functions within the County over the life of the General Plan. The definition of rare, threatened and endangered includes those definitions provided by the FESA, the CESA, the California Plant Protection Act and CEQA.

Policy 8-6 Significant trees, natural vegetation, and wildlife populations generally shall be preserved.

Policy 8-7 Important wildlife habitats which would be disturbed by major development shall be preserved, and corridors for wildlife migration between undeveloped lands shall be retained.

Policy 8-10 Any development located or proposed within significant ecological resource areas shall ensure that the resource is protected.

Policy 8-12 Natural woodlands shall be preserved to the maximum extent possible in the course of land development.

Policy 8-14 Development on hillsides shall be limited to maintain valuable natural vegetation, especially forests and open grasslands, and to control erosion. Development on open hillsides and significant ridgelines throughout the County shall be restricted, and hillsides with a grade of 26 percent or greater shall be protected through implementing zoning measures and other appropriate actions.

Policy 8-15 Existing vegetation, both natural and non-native, and wildlife habitat areas shall be retained in the major open space areas sufficient for the maintenance of healthy balance of wildlife populations.

Policy 8-21 The planting of native trees and shrubs shall be encouraged in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted planted are sustained in urban areas.

CONTRA COSTA COUNTY TREE ORDINANCE

The project area occurs in a pre-zone district of the City, and is currently within Contra Costa County jurisdiction. Therefore, the project is subject to County tree ordinance. Under Articles 816-4 and 816-6 of the Contra Costa County Code, trees of certain sizes and species are protected from removal or significant alteration and these actions would require issuance of permits from the County.

EAST CONTRA COSTA HABITAT CONSERVATION PLAN/NATURAL COMMUNITY CONSERVATION PLAN

The HCP/NCCP is a comprehensive, multi-jurisdiction plan that focuses on the conservation of species and their respective habitats in east Contra Costa County. The HCP/NCCP is intended to provide an effective framework to protect natural resources in eastern Contra Costa County, while improving and streamlining the environmental permitting process for impacts to endangered species. The plan avoids project-by-project permitting that generally results in ineffective, uncoordinated mitigation. The plan is also intended to serve as the basis for subsequent applications for regional federal and/or state wetlands/waters permits. However, this aspect of the plan is still under development with the regulatory agencies and has not been finalized.

The HCP/NCCP has authorization for 28 "covered species," which are both listed and non-listed species. The plan includes conservation measures to protect all 28 covered species, whether or not they are currently listed. Collectively, the HCP/NCCP conservation strategy will mitigate the impacts of covered species and contribute to the recovery of these species in eastern Contra Costa County. The HCP/NCCP includes four main conservation goals and objectives:

1. *Preservation System* – Create a system of new preserves linked to existing protected lands to form a network of protected land outside the area where new urban growth will be covered by the HCP/NCCP.
2. *Habitat Restoration* – Require the preservation but also the restoration of certain land cover types, such as wetlands, riparian woodland and oak savanna at ratios varying from 1:1 to 2:1.
3. *Adaptive Management and Monitoring* – Provide detailed guidelines and recommendations for management, enhancement and restoration techniques.
4. *Avoidance and Minimization Measures* – Require measures to avoid and minimize take of covered species. All covered activities are required to adhere to measures in order to receive take authorization.

4.6.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines for the proposed project would have a significant impact related to biological resources if it would:

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

- Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Special-Status Species Impacts

◆ ***THE PROPOSED PROJECT COULD POTENTIALLY RESULT IN A SUBSTANTIAL ADVERSE EFFECT ON SPECIES IDENTIFIED AS CANDIDATE, SENSITIVE, OR SPECIAL-STATUS SPECIES.***

Level of Significance Before Mitigation: Potentially Significant Impact.

***Impact Analysis*:** The proposed project could potentially result in adverse effects on special-status species that are covered under the HCP/NCCP. The proposed project's participation in the HCP/NCCP conservation strategy would reduce project-related impacts to HCP/NCCP-covered and no-take species and their habitats to a less than significant level. Mitigation for impacts to special-status species would occur through the payment of fees (i.e., a rural road/development fee and a wetland mitigation fee) that would be used by the HCP/NCCP to purchase lands to include in their preservation system. Newly acquired HCP/NCCP lands would be preserved in perpetuity and would offset impacts anticipated from HCP/NCCP covered activities. The proposed project would also incorporate HCP/NCCP Conservation Measures into its design, and would implement required measures to avoid and minimize project-related impacts on special-status species and their habitats. Implementation of these measures would reduce impacts to HCP/NCCP-covered and no-take species to less-than-significant levels.

The proposed project could also potentially result in adverse effects on special-status species that are not covered under the HCP/NCCP. H. T. Harvey & Associates has been consulting with the East Contra Costa County Habitat Conservancy (Habitat Conservancy) to assess the net effects of the HCP/NCCP, including all covered development activities and conservation measures, on species that are not officially covered by the HCP/NCCP. The Habitat Conservancy considers the extent of habitat and populations of the species that could be affected within areas of anticipated development, as well as in areas that are likely to be preserved, enhanced, and managed for covered species and communities by the HCP/NCCP, to determine the net cumulative impact (beneficial, neutral, adverse but less-than-significant, or potentially significant) of these activities on each species. Once completed, this "CEQA Species Assessment for the HCP/NCCP" will facilitate CEQA review of covered projects, such as the proposed project, by determining the cumulative impacts of all HCP/NCCP-related activities on these non-covered species. H. T. Harvey & Associates' consultation with the Habitat Conservancy regarding non-covered species provided information and data to evaluate the significance of impacts of the proposed project on these species.

Special-Status Wildlife Species Determined to be Absent from the Site. The proposed project would have no impact on the silvery legless lizard, Alameda whipsnake, foothill yellow-legged frog, ringtail, yellow-breasted chat, and yellow warbler or their habitats, as these species are determined to be absent from the site.

Upland Land Cover Types. Construction of the proposed project would result in the permanent loss of 16.6 acres of non-developed uplands and temporary impacts of 67.8 acres of non-developed uplands within the project area. Table 4.6-4, *Project Land Cover Impacts*, summarizes the permanent and temporary impacts of the proposed project to land cover types in the project site. Annual grassland, oak

savanna, ruderal, and native grassland land cover types such as those within the project area are relatively abundant and widespread in the region. These habitats are not sensitive or valuable, from the perspective of providing important habitat for plants and wildlife. In addition, due to disturbance from historical ranching activities are not exemplary occurrences of these habitat types.

The small, isolated nature of the oak woodland habitat within project site limits its use by wildlife species, and only a very small portion of this habitat (less than 0.1 acre) would be permanently impacted by the proposed project. The rock outcrops in the project area, although classified as uncommon features by the HCP/NCCP, provide relatively low-quality habitat, with no high ledges to provide nesting habitat for raptors and only shallow crevices to provide habitat for roosting bats. These rock outcrops do not occur in an uncommon soil type (e.g., serpentine) and generally do not provide habitat for special-status species. Thus, project-related impacts on non-developed upland habitats, including oak woodland and rock outcrop habitats, and the loss of associated potential nesting, roosting, and foraging opportunities associated with such habitats are not considered significant for most special-status species; however, further analysis is provided below regarding special-status plants, special-status branchiopods, California red-legged frogs, California tiger salamanders, golden eagles, pallid bats, San Joaquin kit foxes, and American badgers.

Table 4.6-4
Project Land Cover Impacts

Biotic Habitat/Land Cover Type*	Permanent Impacts (ac)	Temporary Impacts** (ac)
Annual Grassland	10.7	40.6
Rock Outcrop	3.9	16.8
Oak Savanna	1.9	9.3
Intermittent Stream	1.3	0.1
Ephemeral Stream	0.6	0.1
Ruderal	0.3	1.0
Oak Woodland	<0.1	0.1
Native Grassland	0.0	<0.1
TOTAL:	18.5	68.0

*Project impacts do not include impacts to the urban (developed) land cover type, as this disturbed area does not provide habitat for plant and wildlife species.
**Areas of temporary impacts include grading, buttress, staging, borrow, and construction easement areas that would be restored following project completion.
Source: H. T. Harvey & Associates, 2012b

Non-Breeding Special-Status Wildlife Species. Several special-status wildlife species have the potential to occur within the project area: American peregrine falcon, Swainson's hawk, Townsend's big-eared bat, northern harrier, burrowing owl, long-eared owl, short-eared owl, Vaux's swift, and tricolored blackbird. These special-status wildlife species could occur in low numbers as transients or migrants. They are not expected to breed within the project area and none of these species were observed during the field surveys. Project construction is not anticipated to result in the injury or mortality of any individuals of these species, as they are not anticipated to be within the project area during construction. Implementation of the HCP/NCCP requirements would ensure that construction activities would have a less than significant impact on these species.

None of these species are expected to occur within the project area in large numbers or to use the project area regularly, and there would be no substantial loss of foraging or non-breeding habitat for any of these species. As a result, impacts from the proposed project on these species would be less than significant.

Potentially Nesting Special-Status Birds. The project area contains habitat that could accommodate up to one pair of white-tailed kites, two pairs of loggerhead shrikes, and up to four pairs of grasshopper sparrows. Loggerhead shrikes and white-tailed kites could nest in trees within the project area, and grasshopper sparrows could nest in grassland areas. No white-tailed kite, loggerhead shrike, and grasshopper sparrow or their nests were observed during the field surveys.

Construction activities would include grading and some pile driving, resulting in temporary noise increases to the project site (refer to Section 4.11, *Noise*, for further details). This temporary increase in noise could result in the disturbance active nests, if present. Construction activities, such as grading, would impact foraging habitat while removal of trees would impact nesting opportunities. Construction activities could potentially result in the disturbance of active nests to the point of nest abandonment. Construction impacts are temporary in nature, and because no species were observed on-site, impacts are considered less than significant.

Once operational, the proposed project would redistribute vehicular traffic; therefore, the proposed project would have the potential to impact nesting birds, and birds would relocate annual nests to areas away from the proposed James Donlon Boulevard Extension. The proposed project would also result in the permanent loss of potential nesting and foraging habitat available to these species regionally.

Because no birds were observed during the field surveys and the extent of impacted foraging and nesting habitat within the project area is small, the project's impacts would not substantially reduce regional populations of these species. In addition, the project area has the potential to support a very small number of nesting pairs. Thus, impacts would not have a substantial adverse effect on special-status nesting birds. Furthermore, the HCP/NCCP's preservation, enhancement, and management of conservation lands through fees paid by the proposed project would provide substantial conservation benefits for these species in eastern Contra Costa County. Although the loss of any active nests of special-status birds would be in violation of federal and state laws (see *Regulatory Setting* above), impacts on these species and their habitats are considered less than significant with implementation of the HCP/NCCP requirements.

Western Pond Turtles. The western pond turtle is a covered species und the HCP/NCCP. The HCP/NCCP provides a map of habitats for the western pond turtle and identifies the project site as an area suitable for a movement corridor only. No suitable habitat to support populations of western pond turtles occur within the project area. No breeding habitat for western pond turtles occurs in the project area nor does it occur in adjacent portions of Kirker Creek. Thus the proposed project would only result in the loss of potential movement habitat for pond turtles. Due to the history of regular disturbance from ranching activities, the steep terrain in the project area, and the lack of nearby breeding habitat, the project area provides very low-quality dispersal habitat for western pond turtles.

Should pond turtles move through the project area during construction, the proposed project could result in the direct injury or mortality of individual turtles. However, no western pond turtles were identified during the field surveys. Implementation of the HCP/NCCP would ensure that the construction of the proposed project would have a less than significant impact to this special-status species.

The proposed project would impact a small amount of movement habitat, as compared to the regional habitat of the western pond turtle. In addition, the quality of this habitat is relatively low. The proposed project would be designed to provide safe access routes for wildlife and the working cattle ranch to cross from one side of the proposed James Donlon Boulevard Extension to the other, as discussed in Section 3.3.2, *Wildlife Movement Corridors*. These crossings would be located in accordance with the HCP/NCCP requirements and designed for the type of species that would utilize the corridors. Furthermore, the western pond turtle is a covered species under the HCP/NCCP. As such, this species

population would benefit from the HCP/NCCP's preservation, enhancement, and management of conservation lands through fees paid by the proposed project and other projects.

Therefore, the proposed project's potential impacts on western pond turtles and their habitat would not substantially reduce regional populations of this species. Thus, this impact would be less than significant.

Special-Status Plant Species. The protocol-level field surveys conduted in July and August of 2007 and March and April of 2008 determined that HCP/NCCP-covered and no-take plant species, as well as special-status plant species not covered under the HCP/NCCP, are absent from the survey area. Protocol-level surveys were not conducted during the 2011 survey. Based on the small extent of the 2011 survey area, its location immediately adjacent to the protocol-level survey area, and the determination of habitat suitability, special-status plant species are not anticipated to occur within the project area.

If any of these species are present, impacts to special-status plants could occur as a result of mechanical or physical removal of vegetation in the project site during construction; crushing by equipment; trampling by personnel; and compaction of soil, which could result in damage to plant roots. These activities could result in mortality, altered growth, or reduced seed set through physically breaking, crushing, wilting, or uprooting plants. Construction of the roadway and drainage improvements could result in the temporary degradation or permanent loss of habitat for these species and could impact populations of special-status plant species, if the species occurs within the project area.

Impacts resulting in the loss of any of the 15 HCP/NCCP covered and no-take plant species would be considered significant due to the regional rarity of these species. Based on the negative results of surveys during the 2007/2008 survey and the absence (or low quality) of suitable habitat present during the 2011 survey, project impacts to the 10 special-status plants listed in Table 4.6-3, *HCP/NCCP Non-Covered Plants*, would be less than significant. Furthermore, the HCP/NCCP's preservation, enhancement, and management of conservation lands through fees paid by the proposed project (the project proponent) and other projects would provide conservation benefits for these species in eastern Contra Costa County. Therefore, even if these 10 special-status species that are not covered by the HCP/NCCP are impacted by the proposed project, the implementation of Mitigation Measure BIO1 would reduce impacts to special-status plants to a less than significant level.

Special-Status Branchiopods. Six locations within the rock outcrop habitat in the project area provide potential breeding habitat for the longhorn fairy shrimp, vernal pool fairy shrimp, midvalley fairy shrimp, and vernal pool tadpole shrimp. If any of these species are present, the project could result in the loss of individuals and their eggs or cysts due to cut and fill activities, or could alter pools in the outcrops such that they no longer pond sufficiently, thus resulting in a loss of occupied habitat. Due to low regional abundances of these species, the loss of one or more sites that support breeding habitat for special-status branchiopods would be considered a significant impact.

Implementation of the species-level measures provided in the HCP/NCCP (Mitigation Measure BIO2) would reduce the potential for project-related take of special-status branchiopods to a less than significant level. However, these HCP/NCCP measures are designed to reduce impacts in wetland habitats, as impacts on rock outcrops were not expected to occur under the HCP/NCCP. Thus, Mitigation Measure BIO3 modifies the HCP/NCCP measures to address proposed project impacts on potential branchiopod breeding locations in rock outcrops.

The HCP/NCCP does not consider possible impacts to the longhorn fairy shrimp as a potential result of covered projects, as the species was not anticipated to occur within impact areas. Thus, the HCP/NCCP does not provide mitigation for impacts to this species, should it occur in the project area. Implementation

of Mitigation Measure BIO3 would reduce project impacts to longhorn fairy shrimp to less than significant.

California Red-legged Frogs and California Tiger Salamanders. California red-legged frogs are known to occur in Kirker Creek (CNDDB, 2012), and suitable breeding habitat for California red-legged frogs is present in Kirker Creek immediately adjacent to the project site. A small pond located 0.2 mile south of the project site also provides potential breeding habitat for California red-legged frogs. Given the proximity of potential breeding habitat and the known nearby occurrence of this species, there is potential for California red-legged frogs to occur in the streams within the project site, especially during wet periods. California red-legged frogs may also disperse across the flatter upland portions of the project area (e.g., in grassland, oak woodland, or oak savanna habitats) during wet periods. No California red-legged frogs were observed on-site during the field surveys.

California tiger salamanders are known to occur in the general project vicinity (CNDDB, 2012), although suitable breeding habitat is absent from the project site and from adjacent areas. A small pond located 0.2 mile south of the project site provides the nearest potential breeding habitat for California tiger salamanders. Given the proximity of this potential breeding pond and the dispersal capabilities of the species, there is potential for California tiger salamanders to disperse through the project site. Although the scarcity of ground squirrel burrows limits the quality of upland refuges on the project site, pocket gopher burrows provide suitable refuge. No California tiger salamanders were observed on-site during the field surveys.

The project area is not located between known breeding areas for California tiger salamanders, and thus does not represent a key dispersal corridor for local populations. California red-legged frogs may disperse between the pond to the south and the potential breeding areas in Kirker Creek. However, the proposed bridges would clear-span the habitat within Kirker Creek thus the avenue for dispersal between these populations would be preserved. In addition, the proposed project would be designed to provide safe access routes for wildlife and the working cattle ranch to cross from one side of the proposed James Donlon Boulevard Extension to the other, as discussed in Section 3.3.2, *Wildlife Movement Corridors*. These crossings would be located in accordance with the HCP/NCCP requirements and designed for the type of species that would utilize the corridors.

Construction of the proposed project would result in the permanent loss of upland and in-stream dispersal and foraging habitat for California red-legged frogs and California tiger salamanders, and could result in the loss of individuals, should they occur in these habitats during construction. Due to the low abundances of these species in the region, the loss of one or more individual California red-legged frogs or California tiger salamanders would be a significant impact. Likewise, due to the substantial regional habitat loss experienced by these species, the loss of upland and aquatic dispersal habitat for California red-legged frogs and California tiger salamanders, especially adjacent to known occurrences of these species, would be considered a significant impact.

The California red-legged frog and California tiger salamander are covered species under the HCP/NCCP. Because no breeding habitat for California red-legged frogs and California tiger salamanders occurs within the project site, the HCP/NCCP does not provide species-level avoidance and minimization measures that apply to the proposed project. Rather, the HCP/NCCP mitigates all impacts on California red-legged frogs and California tiger salamanders through the payment of fees for impacts on land cover types. In addition, the HCP/NCCP requires written notification to USFWS, CDFW, and the Habitat Conservancy regarding timing of construction and likelihood of occurrences within the project area. Therefore, compliance with the HCP/NCCP would reduce project impacts on California red-legged frogs and California tiger salamanders to a less than significant level.

Golden Eagles. Golden eagles are known to occur in the vicinity of the project area during the breeding season. The project area could accommodate up to one pair of nesting eagles. The project area provide potential foraging habitat for golden eagles. Golden eagle foraging habitats similar to those in the project area (e.g., grasslands, oak savanna, and other open habitats) are abundant throughout the region. Therefore, the loss of a small amount of foraging habitat as a result of the proposed project would be considered a less than significant impact. However, if a golden eagle nest is identified within 0.5 mile of the project site, project-related activities resulting in a substantial increase in noise could result in nest abandonment, and possibly the loss of eggs or young as a result. Given the rarity of this species in the region, any impact on individuals of this species would be a significant impact.

Implementation of Mitigation Measure BIO4, which describes the measures provided in Section 6.4.3 of the HCP/NCCP, would reduce the project-related impacts to golden eagles to a less than significant level.

Pallid Bats. The proposed roadway alignment would result in the permanent loss of trees and rock outcrops that provide potential roosting habitat for pallid bats, as well as open areas (e.g., grasslands, oak savanna, streams) that provide foraging habitat for pallid bats. Due to the abundance of roosting and foraging habitat for pallid bats in the region, the loss of rock outcrops and up to 40 trees providing roosting habitat, and open areas providing foraging habitat, for pallid bats would not substantially reduce the amount of roosting and foraging habitat available to this species regionally. However, the loss of one or more active colonies of pallid bats, regardless of size, would be a significant impact, due to the low regional abundance of this species.

Removal of rock outcrops and trees supporting pallid bat roots could potentially result in the injury or mortality of individual pallid bats or the abandonment of maternity roosts, resulting in the loss of young, if any such roosts are present in the proposed project area. Although the pallid bat is not a covered species under the HCP/NCCP, H. T. Harvey & Associates' consultation and coordination with the Habitat Conservancy has determined that the net effect of the HCP/NCCP's covered developed activities and conservation activities on this species would be neutral. The majority of HCP/NCCP-covered development activities are projected to occur in lowland areas that are currently within or near urban or agricultural lands that provide relatively low-quality habitat for pallid bats. In contrast, HCP/NCCP conservation measures, such as habitat protection and management, and revegetation of riparian and oak woodland communities, will occur primarily in more natural areas that are more likely to support, or to be colonized by, pallid bats. Such conservation measures would be implemented through fees paid by the proposed project (i.e., project proponent) and other projects, thus providing benefits to the pallid bat that are adequate to offset impacts of development activities on this species in eastern Contra Costa County. As a result, impacts of the proposed project on the pallid bat are considered to be less than significant.

San Joaquin Kit Foxes. Although San Joaquin kit foxes are not anticipated to occur within the project area, the species is known to occur (or to have occurred) in east Contra Costa County in the project vicinity, and there is potential for San Joaquin kit foxes to den, forage, or move through the project area. Foraging and movement habitats (i.e., grasslands) for San Joaquin kit foxes are abundant throughout the region, and the loss of a small amount of foraging habitat as a result of the proposed project is considered less than significant. However, should San Joaquin kit foxes establish a den within or adjacent to the project site, project-related activities could result in the direct destruction of a den, or in the disturbance of a den to the point of abandonment, and possibly the loss of young as a result. Given the rarity of this species in the region, any impact on individuals of this species would be significant. The project area could accommodate up to one pair of denning San Joaquin kit fox.

Implementation of Mitigation Measure BIO5, which describes the species-level measures provided in the HCP/NCCP, would reduce the potential for project-related take of San Joaquin kit foxes to a less than significant level.

American Badgers. American badgers occur in small numbers in east Contra Costa County, and generally forage in grassland and oak savanna habitats throughout the region. The project area provides low-quality foraging habitat for American badgers, with relatively few prey species (i.e., small fossorial mammals) and no California ground squirrels. However, there is potential for American badgers to forage occasionally in the project area. No American badger dens were observed on the site during the planning surveys; however, the project area could accommodate up to one pair of denning American badgers. Thus, implementation of the proposed project could result in the loss of foraging and denning habitat for American badgers. If American badgers are present in or adjacent to the project area during construction, injury or mortality of American badgers in burrows during grading or from heavy equipment strikes could occur, and construction disturbance near an active den could potentially result in abandonment of a den with young.

The loss of a small amount of low-quality potential denning and foraging habitat for American badgers is not considered significant, because there are expansive areas of this habitat available throughout east Contra Costa County and there is no evidence that American badgers are actively using the project area. Although the American badger is not a covered species under the HCP/NCCP, HT Harvey & Associates' consultation and coordination with the Habitat Conservancy has determined that the net effect of the HCP/NCCP's covered developed activities and conservation activities on this species would be beneficial. The majority of HCP/NCCP-covered development activities are projected to occur in lowland areas that are currently within or near urban or agricultural lands that provide relatively low-quality habitat for American badgers compared to the more natural lands where the majority of HCP/NCCP conservation measures, such as extensive grassland habitat protection and management, will occur. Such conservation measures would be implemented through fees paid by the proposed project (i.e., project proponent) and other projects, thus providing benefits to the American badger that would offset, or exceed, the impacts of development activities on this species in eastern Contra Costa County. As a result, impacts of the proposed project on the American badger would be less than significant with the implementation of the HCP/NCCP.

Mitigation Measures:

BIO1 Prior to the issuance of grading or building permits, compliance with the landscape and species-level measures for covered and no-take plants, provided in Sections 6.4.1 and 6.4.3 of the East Contra Costa County Habitat Conservation Plan / Natural Community Conservation Plan (HCP/NCCP), as well as non-listed special status species, shall occur as follows:

- Planning surveys of suitable land cover types shall be conducted using approved California Department of Fish and Wildlife (CDFW) / U.S. Fish and Wildlife Service (USFWS) methods and during the appropriate seasons to identify HCP/NCCP covered and no-take plants.
- All impacts to HCP/NCCP no-take plants shall be avoided. Surveys shall demonstrate that no-take plant species are absent from the project site; that the project will not result in indirect impacts on no-take plants if they occur in adjacent areas; and that, if no-take plant species occur on the project site, the project will avoid all direct and indirect impacts on these species.
- Impacts to HCP/NCCP covered species shall be avoided to the extent practicable. Where impacts on covered perennial plant species cannot be avoided, the East Contra Costa County Habitat Conservancy (Conservancy) may salvage the covered plants. Salvage methods shall be conducted as appropriate for each species, using techniques described in the HCP/NCCP.

- For annual covered plants, mature seeds shall be collected from all individuals for which impacts cannot be avoided. Collection and storage shall be conducted per the methods described in the HCP/NCCP.
- All salvage operations of covered plant species shall be conducted by the Conservancy. The Conservancy shall conduct investigations to determine the efficacy of salvaging seeds from the soil seed bank for covered species.
- New populations shall be transplanted as separate populations, such that they do not become part of an existing population of a species. Sites shall be selected based on physical, biological, and logistical considerations (i.e., species' historic range, soil types, soil moisture, topography, hydrology).

BIO2 Prior to the issuance of grading or building permits, compliance with HCP/NCCP species-level measures for covered branchiopods, provided in Section 6.4.3 of the HCP/NCCP and modified to apply to the rock outcrop habitat in the project area, shall be implemented and are as follows:

Pre-construction Surveys - Prior to any ground disturbance, a USFWS/CDFW approved biologist shall conduct a pre-construction survey of the areas of rock outcrop where suitable habitat for covered shrimp identified during planning surveys occurs. The surveys shall establish the presence or absence of covered shrimp and/or habitat features and evaluate use by listed shrimp in accordance with modified USFWS survey guidelines. The approved biologist shall conduct USFWS protocol-level surveys in one year to determine presence or absence of covered shrimp species. If covered shrimp are absent from the project site, no further mitigation is required. If covered shrimp are present, the following measures would be implemented.

Avoidance and Minimization – To the maximum extent practicable, impacts to occupied habitat of covered shrimp shall be avoided by implementing the following measures:

- If suitable habitat for covered shrimp would be retained on-site, a buffer (described below) shall be established from the outer edge of the pools occupied by covered shrimp. Alternatively, at the request of the project proponent, representatives of the Conservancy and USFWS shall conduct site visits to inspect the particular characteristics of specific project sites and shall approve reductions of the buffer. Buffer reductions shall be approved for all portions of the project site whenever reduced setbacks would maintain the hydrology of the pool and achieve habitat values the same as, or greater than, would be achieved by the original buffer.
- Activities inconsistent with the maintenance of pools within the buffers and disturbance of the on-site watershed shall be prohibited. Examples of inconsistent activities include altering topography, dumping, burning, and the placement of fill materials.
- Filling of pools, if unavoidable, shall be delayed until pools are dry and samples from the top four inches of wetland soils are collected (if such soils are present in the rock outcrop pools). Soil collection shall be sufficient to include a representative sample of plant and animal present in the wetland by incorporating seeds, cysts, eggs, spores and similar inocula. The amount of soil and the number and size of samples shall be determined by a USFWS approved biologist.
- Pools occupied by covered shrimp (other than longhorn fairy shrimp, addressed in BIO3) that are filled shall be offset by preserving or acquiring seasonal wetlands occupied by

the covered shrimp species and restoring habitat suitable for the covered shrimp species in accordance with HCP/NCCP Conservation Measure 3.8.

Construction Monitoring - If suitable habitat for shrimp would be retained on-site, the project proponent shall establish a buffer from the outer edge of all occupied pools occupied by covered shrimp. This buffer zone shall be determined in the field by the biologists as the immediate watershed feeding the pool or a minimum of 50 feet, whichever is greater. Buffers shall be marked by brightly colored fencing or flagging throughout construction. Construction activities within the buffer zone shall be prohibited.

Construction personnel shall be trained to avoid affecting shrimp. A qualified biologist approved by USFWS shall inform all construction personnel about the life history of covered shrimp, the importance of avoiding their habitat, and the terms and conditions of the HCP/NCCP related to avoiding and minimizing impacts to covered shrimp.

BIO3 Compensatory mitigation for the loss of occupied pools in rock outcrops within the project site through the preservation and creation of suitable habitat in accordance with the ratios and requirements provided in Conservation Measure 3.8 of the HCP/NCCP. If the pools in the rock outcrops are occupied by covered shrimp, the project proponent shall first determine if the Conservancy has preserved 2 acres of occupied habitat for the same shrimp species for every acre impacted, and restored 1 acre of suitable habitat for the shrimp species for every acre impacted, and the restored habitat is occupied. If the Conservancy has not accomplished these tasks, then the project proponent shall compensate for impacts to these pools through 2 acres of preservation and 1 acre of creation of occupied habitat (or purchase of an equivalent amount of preservation credits in a USFWS-approved mitigation bank) for each acre of pools affected.

If longhorn fairy shrimp are detected in pools in the project area, direct impacts (e.g., filling or draining) or indirect impacts (e.g., modification of hydrology supporting those pools) shall be avoided to the extent practicable. The HCP/NCCP did not anticipate impacts to the longhorn fairy shrimp from covered development activities, and thus the Conservancy is not planning any habitat acquisition or creation to benefit this species. Thus, if the longhorn fairy shrimp will be impacted by the proposed project, the project proponent shall perform project-specific mitigation for this species via preservation of existing pools and/or by creating pools elsewhere, inoculating those pools with cysts from the impacted pools, and preserving and managing the lands on which those pools occur in perpetuity.

The project proponent shall attempt to locate longhorn fairy shrimp occurrences on lands that are not currently protected and acquire and preserve those lands at a 2:1 (mitigation:impact) ratio, in addition to creating new habitat at a 1:1 ratio. Due to the rarity of this species, it is possible that the project proponent may be unable to find existing occurrences of the longhorn fairy shrimp that can be preserved. In this case, mitigation shall occur via creation of pools at a 3:1 ratio.

If compensatory mitigation for unavoidable impacts to longhorn fairy shrimp is necessary, the project proponent shall prepare a Habitat Mitigation and Monitoring Plan (HMMP) for the creation, inoculation, preservation, and management of the created pools and submit it to the Habitat Conservancy and USFWS for review and approval. Impacts to the occupied pools shall not commence until the Conservancy and USFWS approves the HMMP. The HMMP

shall be prepared by qualified restoration ecologists in consultation with a longhorn fairy shrimp expert and will provide, at a minimum, the following items:

a. A summary of impacts and the proposed mitigation site/species management
b. A description of the location and boundaries of the mitigation site/management area and description of existing site conditions
c. A description of measures to be undertaken to create pools for the longhorn fairy shrimp enhance
d. A description of measures to salvage cysts of the longhorn fairy shrimp from occupied pools and use them to inoculate the created pools
e. Proposed management activities to maintain high-quality habitat conditions for the longhorn fairy shrimp
f. A description of species monitoring measures on the mitigation site, including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.
g. A description of the management plan's adaptive component, including potential contingency measures for mitigation elements that do not meet performance criteria
h. A description of the preservation mechanism (e.g., a conservation easement) and the funding mechanism to ensure the long-term maintenance and monitoring of the mitigation lands

BIO4 Prior to the issuance of grading or building permits, compliance with HCP/NCCP species-level measures to avoid and minimize impacts to golden eagle shall be implementation and include:

Pre-construction Surveys - Prior to implementation of any construction activities, a qualified biologist shall conduct a pre-construction survey to establish whether nests of golden eagles are occupied (HCP/NCCP Section 6.3.1, Planning Surveys). If nests are occupied, the avoidance and minimization measure and construction monitoring measures shall be implemented as outlined below.

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

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

BIO5 Prior to the issuance of grading or building permits, compliance with the HCP/NCCP species-level measures to avoid and minimize impacts to San Joaquin kit foxes shall be implemented and include:

Pre-construction Surveys - Prior to any ground disturbance, a USFWS/CDFW-approved biologist shall conduct a pre-construction survey in areas identified in the project's planning survey as supporting breeding or denning habitat for San Joaquin kit foxes. The surveys shall establish the presence or absence of San Joaquin kit foxes and/or suitable dens and evaluate use by San Joaquin kit foxes in accordance with USFWS survey guidelines.

Pre-construction surveys shall be conducted within 30 days of ground disturbance. The biologist shall survey the proposed disturbance footprint and a 250-foot radius from the perimeter of the proposed project footprint to identify San Joaquin kit foxes and/or suitable dens. The status of all identified dens shall be determined and mapped. Written results of preconstruction surveys shall be submitted to USFWS within five (5) working days after survey completion.

Avoidance and Minimization - If San Joaquin kit foxes and/or suitable dens are identified, the measures described below shall be implemented:

- The den shall be monitored for three days by a USFWS/CDFW approved biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used.
- Unoccupied dens shall be destroyed immediately to prevent subsequent use.
- If a natal or pupping den is identified, the USFWS and CDFW shall be notified immediately. The den shall not be destroyed until the pups and adults have vacated and then only after further consultation with the USFWS and CDFW.

If San Joaquin kit fox activity is observed at the den during the initial monitoring period, the den shall be monitored for an additional five (5) consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is determined to be unoccupied it may be excavated under the direction of the biologist. Alternatively, if the animal is still present after five (5) or more consecutive days of plugging and monitoring, the den shall be excavated when, in the judgment of a biologist, it is temporarily vacant.

Level of Significance After Mitigation: Less Than Significant Impact.

Impacts to Sensitive and Regulated Habitats

- ***THE PROPOSED PROJECT COULD RESULT IN A SUBSTANTIAL ADVERSE EFFECT ON FEDERALLY PROTECTED WETLANDS AS DEFINED BY SECTION 404 OF THE CLEAN WATER ACT OR HABITAT PROTECTED BY THE CALIFORNIA FISH AND GAME CODE 1600 (INCLUDING STREAMS AND ASSOCIATED RIPARIAN HABITAT), THROUGH DIRECT REMOVAL, FILLING, AND HYDROLOGICAL INTERRUPTION.***

***Level of Significance Before Mitigation*:** Potentially Significant Impact.

***Impact Analysis*:** Wetlands and other waters of the U.S. are present within the proposed project footprint and would be impacted. Field surveys and recent guidance provided by the USACE and EPA indicate that no habitats on the project site would be disclaimed by the USACE that would be subsequently claimed by the RWQCB. Therefore, all areas identified as waters of the U.S. within the project area are also considered waters of the State.

Construction of the proposed project would result in permanent impacts to 1.27 acres of jurisdictional wetlands, 0.06 acre of jurisdictional other waters, and 5.3 acres of CDFW-regulated habitats. Temporary impacts on aquatic habitats would occur within the construction easements, and would include impacts to 0.1 acre of jurisdictional wetlands, less than 0.01 acre of jurisdictional other waters, and 0.8 acre of CDFW regulated habitats.

Impacts of the proposed project on sensitive and regulated habitats are mitigated through the HCP/NCCP conservation strategy via the payment of a rural road fee and wetland mitigation fee, and via the implementation of applicable conservation measures. Therefore, project-related impacts to sensitive and regulated habitats would be reduced to a less than significant level through compliance with the HCP/NCCP conservation strategy. In addition, the proposed project would require permits from the USACE, CDFW, and RWQCB for impacts to sensitive and regulated habitats. The implementation of these measures, the proof of which is required in Mitigation Measure BIO6, would reduce impacts on jurisdictional habitats to a less than significant level.

Mitigation Measures:

BIO6 Prior to the issuance of grading or building permits for the proposed project, the project proponent shall submit to the City of Pittsburg Development Services Department evidence of all required water quality permits before engaging in soil-disturbing construction activities, before entering flowing or ponded water, and before constructing crossing(s) at flowing or ponded water. Such permits may include, but are not limited to, a Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW), a Clean Water Act Section 402 National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activities, and/or a Waste Discharge Requirement from the San Francisco Bay Regional Water Quality Control Board. Additionally, after review and approval of all required water quality permits, the project proponent shall maintain and make available on-site at all times an approved copy of all required permits.

Level of Significance After Mitigation: Less Than Significant Impact.

Wildlife Movement Impacts

- ***THE PROPOSED PROJECT COULD INTERFERE SUBSTANTIALLY WITH THE MOVEMENT OF NATIVE RESIDENT OR MIGRATORY WILDLIFE SPECIES OR WITH ESTABLISHED NATIVE RESIDENT OR MIGRATORY WILDLIFE CORRIDORS, OR IMPEDE THE USE OF NATIVE WILDLIFE NURSERY SITES.***

Level of Significance before Mitigation: Less Than Significant Impact.

Impact Analysis: Implementation of the proposed project could adversely affect the north-south movement of wildlife through the project area. The proposed James Donlon Boulevard Extension is located in the foothills of Mount Diablo, which are steep with deeply incised drainages that cross perpendicular to the proposed roadway. The roadway crosses highly variable topographic features which creates the necessity for significant cut and fill to appropriately design for a safe transportation facility. Additionally, the proposed project would require culverts carrying drainages under the proposed roadway. Because some wildlife species may preferentially use drainages for dispersal, construction of the proposed roadway extension could potentially impact north-south wildlife movement through the project area.

However, the area to the north of the proposed roadway is relatively small, and thus does not support large populations of any wildlife species for which the proposed project would reduce dispersal. As a result, a reduction in dispersal across the proposed roadway would not result in impacts to regional populations of any given species. Thus, impacts on wildlife movement would be less than significant. Nevertheless, the proposed project would implement HCP/NCCP Conservation Measure 1.4, which requires the proposed James Donlon Boulevard Extension to collect data on wildlife movement and to provide for means by which wildlife would move across the project site. The proposed project incorporates large and small-diameter undercrossings at regular intervals along the proposed project alignment to allow animals to cross under the proposed roadway. Directional fencing would be constructed on both sides of the roadway to minimize the potential for animals to cross over the road (thus reducing the potential for collisions with vehicles) and to direct animals to the undercrossings. These measures would reduce the proposed project's effects on wildlife movement. Thus, the proposed project's impact on wildlife movement is considered less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than Significant Impact.

Local Policy and Ordinance Impacts

- ***THE PROPOSED PROJECT COULD CONFLICT WITH THE CONTRA COSTA COUNTY TREE PROTECTION AND PRESERVATION ORDINANCE.***

***Level of Significance Before Mitigation*:** Potentially Significant Impact.

Impact Analysis: Contra Costa County has established a Tree Protection and Preservation Ordinance that is contained in Article 816-6 of the County's Municipal Code. This ordinance contains provisions regarding the protection of trees, removal of trees as part of development applications, and replacement of protected trees that are removed. The County requires an application for the removal of trees, and the proposed project would be subject to the County's requirements.

All 40 trees within the project site are subject to removal as part of the proposed project. These trees include one mimosa tree, 14 blue oaks, three buckeyes, five almond trees, five arroyo willows, one valley oak, one blue elderberry, and 11 trees of unknown species counted using aerial imagery. Of the previously surveyed trees of known species and diameter, a total of 21 trees are protected by the County's Tree Protection and Preservation Ordinance, which include 14 black oaks, two buckeyes, four arroyo willows, and one valley oak. Based on empirical observations in the field, these 21 trees and the 11 trees of unknown species would be protected by the County's Tree Protection and Preservation Ordinance.

The removal of trees without a permit from the County would conflict with the County's Tree Protection Ordinance, and would be a significant impact. In addition, proposed project activities could potentially damage trees located in the conservation easement or in areas immediately adjacent to the project site. Implementation of Mitigation Measures BIO7 and BIO8 would reduce these impacts to less than significant levels.

Mitigation Measures:

BIO7 Prior to the issuance of any building or grading permit, the project proponent shall submit a tree permit application pursuant to Article 816-6 of the County's Municipal Code. Compliance with this article shall result in the replacement or mitigation of any protected tree affected by the proposed project. The County shall specify the exact tree replacement ratio

upon review of the tree permit application. Written proof of the tree removal permit shall be provided to the City of Pittsburg Development Services Department prior to issuance of any building or grading permit.

BIO8 Prior to issuance of any grading or building permit, the project proponent shall install protective measures for all trees to remain within the construction easement or whose dripline falls within one (1) foot of the project site. Protective measures shall be shown on the grading and/or drainage plan. All tree protection measures shall be approved, installed and inspected by the project proponent before any construction may begin. All existing trees to remain shall be protected with the following measures during construction:

a. Protective fencing shall be six (6) feet high and a minimum of one (1) foot beyond the dripline of each tree. This fencing shall be installed prior to any construction activity, including clearing and grubbing, within the roadway alignment. Additional protection measures, such as hay bales or two-by-fours, may also be necessary. No project activities shall occur within these fenced areas.
b. All underground work within tree driplines shall be avoided wherever possible to minimize impacts. If trenching or grading within the dripline is completely unavoidable because of site constraints, then a qualified arborist shall be consulted to advise on the least damaging course of action. Trenches within the dripline shall be hand-excavated.
c. Access within the dripline shall be granted only as a condition of the tree removal application. If pruning is required for safe access and clearance within the dripline, then necessary pruning shall be to the standards and guidelines of the International Society of Arboriculture. A qualified arborist shall identify and monitor all pruning activities during construction.
d. Individual or isolated trees subject to the influences of trenching, grade changes, or altered drainage patterns shall be provided with a protective layer of mulch prior to construction activities. Similarly, if equipment access is absolutely necessary beneath the dripline of a tree, a mulch layer 4 to 12 inches deep shall be placed over the area prior to allowing equipment to cross. Mulch shall be chipped bark material placed away from the trunk and extend out to the dripline of the canopy or the edge of the protective fencing. The area beneath the dripline shall be well-watered prior to the placement of the mulch so that moisture is not wicked out of the soil by the mulch itself. The mulch shall be left on the site since removal may cause damage to surface feeder roots.
e. If necessary, specific instructions for fertilization, disease, pest control, and weed control shall be made for individual trees per the qualified arborists' direction.
f. Watering during construction to minimize tree stress is crucial when 25 percent or more of a tree's roots have been disturbed. Water shall be slowly applied to a minimum depth of 12 inches for the full outer half of the canopy/dripline area. The area immediately adjacent to a tree trunk shall not be watered. Watering shall occur once a month during the dry season (May through September).
g. All grading shall be designed to drain water away from the base of the trees to avoid creating areas of ponding within the dripline. The natural drainage across the site shall be retained as much as possible.
h. Trees that are excessively damaged due to inadequate protection or negligence by the contractor shall be replaced at the project proponent's expense. Replacement shall be determined in the same manner as mitigation plantings.

Level of Significance After Mitigation: Less Than Significant Impact.

Conflictions with Provisions of the HCP/NCCP

- ***THE PROPOSED PROJECT COULD CONFLICT WITH PROVISIONS OF THE HCP/NCCP.***

***Level of Significance Before Mitigation*:** Potentially Significant Impact.

Impact Analysis: The proposed project is covered as a rural road project (a subset of HCP/NCCP rural infrastructure projects) under the HCP/NCCP. The proposed project would be in compliance with the HCP/NCCP, per the proposed project design as well as implementation of Mitigation Measures BIO1 through BIO9. The proposed project would not conflict with the East Contra Costa HCP/NCCP and impacts are considered less than significant.

Mitigation Measure:

BIO9 The HCP/NCCP requires the proposed project to pay the appropriate fees, as indicated in the HCP/NCCP, to mitigate the loss of open space. In addition, the proposed project is subject to the HCP/NCCP conservation strategy, which includes complying with applicable Conservation Measures and Species-Level Measures specified in the HCP/NCCP. Payment of HCP/NCCP fees and implementation of the HCP/NCCP's Conservation and Species-Level Measures by the project proponent shall ensure the proposed project's compliance with the HCP/NCCP. Proof of payment shall be provided to the City of Pittsburg Development Services Department prior to issuance of any building or grading permit.

Level of Significance After Mitigation: Less Than Significant Impact.

4.7 CULTURAL RESOURCES

Information in this section is based on the Cultural Resources Survey of the James Donlon Boulevard Extension, dated July 2007, prepared by Archaeological/Historical Consultants (A/HC), the California Register of Historical Resources and National Register of Historic Places Evaluation of CA-CCO-819 (P-07-03086), dated August 2012, prepared by Pacific Legacy, Inc. and A/HC, and the Draft Archaeological Discovery Plan, James Donlon Extension Project, dated December 2012, prepared by A/HC. These studies are contained in Appendix D of this EIR.

4.7.1 ENVIRONMENTAL SETTING

PREHISTORY

Settlement in the San Francisco Bay area probably began over 10,000 years ago, and archaeological excavations at a number of sites indicate that there were sparse populations of mobile foragers or hunters and gatherers who populated the East Bay in the Early Holocene (Lower Archaic) between 8000-3500 B.C. They utilized a millingstone technology and large projectile points. Between 3500 B.C. and 500 B.C. (the Early Period or Middle Archaic) there were new patterns of increased sedentism, increased regional trade, and "regional symbolic integration" represented by the occurrence of shell beads and the development of mortar and pestle technology. It has been postulated that about 1900 B.C. a population of marsh and bayshore adapted people, probably ancestral Costanoan-speakers, settled along the East Bay margin, perhaps moving from eastern Contra Costa County. While it seems clear that there was population movement into and out of the Bay Area, issues of direction and identity of populations are not yet fully understood. The Middle Period (Upper Archaic), between 500 B.C. and A.D. 1050, saw the emergence of new decorative and religious objects, with a cultural climax occurring on San Francisco Bay between 200 B.C. and A.D. 430. New bone tools and ornaments, as well as basketry awls, indicating coiled basketry, are hallmarks of the period. A new archaeological pattern, the Augustine, developed about A.D. 300-500 in the bay region, as the population grew and the bow and arrow and new bead types were introduced. At the time of Spanish contact in the late 18th century, there were large populations, more settlements, and evidence of greater status differentiation among them; more reliance on vegetal gathering, especially of acorns; a well developed trade system; the appearance of clamshell disc beads as a currency of exchange; and the spread of secret societies and cults together with their associated architectural features and ceremonial traits. In the inland areas of Contra Costa County it appears that sedentary village life may have begun between 2500 B.C. and A.D. 1 and that an increasingly complex social organization gradually evolved, including an evolution from an egalitarian to a socially ascribed status system. At various times influences from both the Napa and the Delta-San Joaquin Valley regions arrived in the Contra Costa area, probably based both on diffusion and population movements. Cultural expansion and replacement of populations over the millennia, culminating in the expansion of Bay Miwok populations into the west Delta region around A.D. 900-1000, characterized the region's prehistory (Pacific Legacy and A/HC, 2012).

ETHNOGRAPHY

The project area is in what was the ethnographic territory of the Chupcan, one of the groups that spoke the Bay Miwok language. Bay Miwok territory extended approximately from Walnut Creek eastward to the Sacramento-San Joaquin delta and from just south of Mount Diablo north to Suisun Bay. There is some uncertainty as to exact territorial boundaries, but it is believed that the Chupcan resided along the south shore of Suisun Bay between Port Chicago and the mouth of Marsh Creek. The main village of the Chupcan was either in Antioch or on lower Pacheco Creek in present day Concord (Pacific Legacy and A/HC, 2012). It is likely that the Chupcan had more than one major village and that both of the above may have been important locations.

The Bay Miwok were successful intensive food collectors and hunters who utilized a wide range of resources in a very favorable environment. Those populations living adjacent to the great bays of the region relied heavily on shellfish and aquatic animals for food. Game birds, waterfowl, and fish were other major food sources that thrived in the sloughs and marshes of the Suisun Bay and Delta area. In the interior, plant foods in plentiful variety were gathered on a seasonal basis with acorns the most important vegetal staple, since they could be stored in great quantity. Deer, elk, and antelope were hunted. Trade routes seem to have been well developed. (A/HC, 2007; Pacific Legacy and A/HC, 2012).

The population of Bay Miwok speakers was probably never very numerous, and it is estimated that there were no more than 1,700 people for all Bay Miwok groups at the time of European contact. The total number of Chupcan will never be known. The Chupcan apparently resisted missionization for a time because they were among only two San Francisco East Bay groups that were still culturally intact by the end of 1805. By that time many Chupcan may also have withdrawn north to the territory of the Suisun. The Chupcan were close allies of the Suisun who apparently protected various groups retreating from the mission frontier, including the Saclans, Tatcans, and Chupcans. It is likely, therefore, that Chupcan villages in or near the project area were abandoned at least by 1806. Spanish military action against the Suisun groups in 1810 resulted in movement of some Chupcan to the missions. The exact size of the original group is unknown, but 146 Chupcan were baptized at either Mission San Francisco or Mission San Jose between 1810 and 1811. As a result of missionization, disease, and military action, the cultural integrity of these peoples was essentially destroyed by the mid-1800s. After secularization of the missions in the 1830s, some native people went to work on nearby ranchos, perhaps gravitating to home lands, but there is little information available about this period. Many of the Bay Area people who today identify themselves as of Miwok descent, including Coast and Bay Miwok, are united in a Federally recognized organization, the Federated Indians of Gratan Rancheria in Santa Rosa. Others live in various locations in the Bay Area. It is unknown whether any are descendants of the Chupcan people (A/HC, 2007; Pacific Legacy and A/HC, 2012).

HISTORY

The historic period in Contra Costa County begins with the 1772 expedition of Pedro Fages to the Mount Diablo area (A/HC, 2007). Fages' expedition, which tried to find an inland land route to Point Reyes, skirted the Carquinez Straits, eventually camping at a spot between present-day Pittsburg and Antioch. Here a decision was made to abandon the search. This "turn back" camping spot is commemorated in Buchanan Park north of the project area (A/HC, 2007; Pacific Legacy and A/HC, 2012).

The project area's location, in the hills lying immediately south of the City of Pittsburg, has strongly influenced its history. During the earliest historic times, the area was considered marginal at best and lay outside the boundaries of all the Mexican era (1820s-1840s) land grants. The two closest grants were Los Medanos to the north and northeast and Monte del Diablo to the southwest. Similarly during the Gold Rush and immediate post-Gold Rush years, it is likely that little activity took place there, although New York Landing (later Pittsburg) became an important transportation center. In 1859, coal, a key element in the industrialization of San Francisco, was found in quantity just two miles to the south of the project area. Several towns, including Nortonville, Somersville, and Stewartsville, rapidly sprang into existence as coal mining centers during the early 1860s, attracting miners from Welsh and English coal mining areas especially. Nortonville and Somersville both lie about two miles due south of the project area. Kirker Pass Road and Somersville Road, which lie to the west and east of the project area respectively, seem to have had their origins in the 1860s as railroads that carried coal from Nortonville and Somersville to New York Landing, although these routes may have followed earlier trails and wagon roads. Maps show that a portion of the rail route from Somersville once crossed just east of the project area in a south to north direction. Mining fluctuated in activity, especially in the 1880s and 1890s, and by 1902 coal production had almost halted (A/HC, 2007; Pacific Legacy and A/HC, 2012).

By the 1860s, mining created a demand for agricultural products, making it attractive for farmers and ranchers to claim public lands for small ranches and farms. Typically, a quarter section of land (160 acres) was squatted on, claimed, and staked. After the appropriate length of time and amount of improvements, the land was officially filed for patent under the Homestead Act or other land act.

By 1885, the south half of Section 29 was owned by David Griffith and the southwest quarter of Section 28 by the Edwards family. The northwest and northeast quarters of Section 32 were owned by the Lattimore family and the Watson family respectively, and the northwest quarter of Section 33 by the McNemee family (A/HC, 2007; Pacific Legacy and A/HC, 2012; A/HC, 2012).

In 1901, the Abrams family inherited the Griffith acreage, which comprised most of the western half of the present project area. Two brothers, Warren and William Abrams, and their mother Margaret Abrams, are listed on the 1910 and 1920 censuses. In 1910, Warren was 27 years old, William 24, and Margaret (or Margurete) was 48. The men were listed as farmers and had been born in Pennsylvania. Margaret, although born in Pennsylvania, had Welsh parents, indicating that they may have come from the Pennsylvania coal fields where many Welsh had continued their mining tradition. Over the years the Abrams family acquired more acreage until the ranch contained 800 acres. The Abrams family operated the ranch until 1963, when Wayne Thomas, a cousin of the Abrams, acquired it (A/HC, 2007; Pacific Legacy and A/HC, 2012). Mr. Thomas is now deceased, but his descendants continue to operate the ranch. Today, all of the proposed project is located within the Abrams/Thomas Ranch.

An existing powerline that crosses the study area in a southwest to northeast direction was erected by Great Western Power Company. It was either being planned or in place by 1914 (A/HC, 2007). In 1942, as part of the war effort, Camp Stoneman was built in Pittsburg just to the north of the western part of the study area. Although this did not particularly affect the Project Area, some gravel was quarried from the Abrams/Thomas Ranch during Camp Stoneman's construction. The camp was deactivated in 1954 (A/HC, 2007; A/HC, 2012).

Topographic maps show few other substantive changes to the project area to the present day. The project area continues to be used mainly for cattle grazing.

METHODS

Background Review/Record Searches

A record search for prior archaeological studies was conducted at the Northwest Information Center, California Historical Resources Information System, at Sonoma State University in 2002. A new record search was requested at the Northwest Information Center in February 2012. The Earth Sciences and Bancroft Libraries of University of California, Berkeley, the Contra Costa County Recorders Office, and the Contra Costa County Historical Society were other sources of data for pertinent historic and archaeological information.

The Northwest Information Center record search indicated that five cultural resources surveys have previously been conducted within the project area. In addition to the three prior surveys for the James Donlon Boulevard Extension Project (A/HC, 2007), these included an archaeological survey of a pipeline route in the western part of the project site, and a study of a 0.25 acre parcel located approximately 260 meters east of Kirker Creek and near the boundary between the Thomas Ranch and the City of Pittsburg. Immediately east of the project area, four studies were completed in the eastern half of Section 28 on the former Arata Ranch property.

A paleontological record search was conducted in December 2012 at the University of California Museum of Paleontology at the University of California, Berkeley. The record search included a record search and formation sensitivity check for both plant and vertebrate fossils.

Native American Consultation

Native American consultation was conducted by RBF Consulting (RBF) and A/HC in 2002 and in 2012 as part of the completion of cultural resources survey of the APE. In 2002, Chuck Striplen of the Federated Indians of Graton Rancheria of Santa Rosa, the only federally recognized tribe that includes people of Miwok descent in their membership, was contacted. Mr. Striplen expressed no particular concerns about the proposed project, but requested a copy of the survey report when completed (Pacific Legacy and A/HC, 2012).

A new consultation process was initiated by A/HC on February 10, 2012. A/HC contacted the Native American Heritage Commission (NAHC) to solicit information and concerns about Native American cultural resources and heritage values. The NAHC had no information on Native American cultural resources in the immediate project area, and recommended contacting the three Native American consultants on its Contra Costa County list. These individuals include: Katherine Erolinda Perez represents Bay Miwok, Ohlone/Costanoan, and Northern Valley Yokut concerns; Andrew Galvan represents Bay Miwok, Ohlone/Costanoan, Plains Miwok, and Patwin concerns; and Ramona Garibay is the representative of the Trina Marine Ruano Family and represents Bay Miwok, Ohlone/Costanoan, Plains Miwok, and Patwin concerns.

Letters were initially sent to these three individuals on February 10, 2012. No replies were received, prompting a follow-up inquiry on March 12, 2012. One reply from Andrew Galvan was received by e-mail on March 13, 2012 stating he had no specific information about the project area. On August 15, 2012, Katherine Perez sent a letter to Superior Court of California, Contra Costa County, requesting that a qualified archaeological firm test the site with a Native American Monitor present (Pacific Legacy and A/HC, 2012).

Extended Phase I Survey at CA-CCO-819 was conducted in October 2012 and Native American monitors representing the Ohlone/Bay Miwok were present during all excavation activities. Katherine Erolinda Perez was present on October 15 and 16, 2012. Engle Merga was present on October 15-17, 2012.

Field Surveys

During the 2002 archaeological survey for the proposed project, A/HC staff inspected three proposed project alignments, with survey corridors up to 525 feet wide to accommodate the width of the road, as well as potential areas of cut and fill. Archaeological surveyors walked in systematic transects, spaced approximately 65 to 131 feet apart, depending upon the steepness of the terrain. In potentially sensitive areas narrower transects were used. Large segments of each proposed project alignment crossed very steep slopes. Flat ridge tops and drainages adjacent to the proposed project alignments were also inspected because these areas were potentially more archaeologically sensitive than the slopes. Sites P-07-002566, the historic Warren and William Abrams Ranch complex (the Thomas Ranch), constructed after 1901 and before 1950, and P-07-002564, a linear segment of an historic road, were recorded and evaluated within the project area during the 2002 survey (Baker, 2007).

A 2007 archaeological survey closely followed the 2002 central proposed project alternative with a few variations, based on engineering design changes. No new sites were added in 2007 (Baker, 2007).

A/HC staff conducted a final archaeological survey of the proposed project alignment on March 5, 2012. It, too, closely followed the survey area for the central proposed project alignment from 2002 and the

survey area from 2007. The 2012 survey included refined survey areas because the cut and fill areas for the proposed project had been specifically designated. The 2012 survey was conducted to ensure that all of proposed project area had been inspected. One archaeological site, P-07-003086 (CA-CCO-819), a prehistoric lithic scatter, was recorded just south of the drainage during the 2012 survey (Baker, 2012).

An Extended Phase I Archaeological Survey, consisting of test excavations, was then conducted from October 15 through 17, 2012, to evaluate the site (Pacific Legacy and A/HC, 2012). As stated above, Native American monitors were present during all excavation activities. This investigation included the manual excavation of 12 shovel probes and mechanical excavation of three trenches.

Shovel Probes are small excavation units measuring 50 centimeters (cm) by 50 cm. These are excavated in 20 cm levels from the ground surface. The shovel probes were laid out in a rough grid system spaced at approximately ten-meter intervals. The excavation units were placed to test in and around areas of higher surface artifact concentration, as well as in different parts of the landform on which the site is located. A roughly northeast-southwest main axis was laid out in line with the longest portion of the bench within the recorded site boundary. Two lines were laid out approximately perpendicular to the main axis in areas where the shovel probes had higher numbers of cultural materials and to test different portions of the site. All shovel probes were located with the handheld GPS. Shovel probes were excavated manually and soils were screened through one-quarter-inch metal wire screen mesh.

Three backhoe trenches, measure one meter wide by approximately 5.5 meters long and 1.5 meters deep, were excavated to investigate the site's geomorphology and identify any buried site components. These tranches provided detailed soil profile, an opportunity to identify any former land surfaces that might have buried archaeological sites and an understanding of the site formation proves. The trenches were places in locations thought to have the greatest potential for buried cultural deposits based on the landform, the results of shovel probe excavation, and surface artifacts.

4.7.2 REGULATORY SETTING

FEDERAL

Section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 USC 470f, as amended) requires federal agencies to consider the effects of their actions including the approval, funding or permitting, of an activity on properties that are listed or eligible for inclusion in the National Register of Historic Places (NRHP). Historical sites, objects, districts, structures, and cultural landscapes that are eligible for listing in the NRHP are known as "historic properties." Section 106 also requires the federal agency to afford the Advisory Council on Historic Preservation an opportunity to comment on the agency's efforts to consider historic properties. The implementing regulations for Section 106, found at 36 CFR 800, describe a process of inventory, evaluation, and consultation that satisfies the federal agency's requirements. For federally permitted or funded projects, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP.

NRHP criteria for eligibility are defined as follows:

The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and that:

a) are associated with events that have made a contribution to the broad pattern of our history;
b) are associated with the lives of people significant in our past;

c) embody the distinct characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,

d) have yielded, or are likely to yield, information important in prehistory or history (36 CFR Part 60.4).

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to all discretionary projects undertaken or subject to approval by the state's public agencies (California Code of Regulations [CCR] Title 14(3) §15002(i)). CEQA states that it is the policy of the State of California to "take all action necessary to provide the people of this state with… historic environmental qualities…and preserve for future generations examples of the major periods of California history" (Public Resources Code [PRC] §21001(b), (c)). Under the provisions of CEQA, "A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (CCR Title 14(3) §15064.5(b)).

CEQA defines a "historical resource" as a resource which meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register of Historical Resources
- Listed in a local register of historical resources (as defined at PRC §5020.1(k))
- Identified as significant in a historical resource survey meeting the requirements of §5024.1(g) of the Public Resources Code
- Determined to be a historical resource by a project's lead agency (CCR Title 14(3) §15064.5(a))

A historical resource consists of "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... . Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources" (CCR Title 14(3) §15064.5(a)(3)).

CEQA requires that historical resources and unique archaeological resources be taken into consideration during the CEQA planning process (CCR Title 14(3) §15064.5; PRC §21083.2). If feasible, adverse effects to the significance of historical resources must be avoided, or the effects mitigated (CCR Title 14(3) §15064.5(b)(4)). The significance of an historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for the California Register of Historical Resources. If there is a substantial adverse change in the significance of a historical resource, the preparation of an EIR may be required (CCR Title 14(3) §15065(a)).

If the cultural resource in question is an archaeological site, CEQA (CCR Title 14(3) §15064.5(c)(1)) requires that the lead agency first determine if the site is a historical resource as defined in CCR Title 14(3) §15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource.[1] If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then the archaeological site is treated

[1] California Office of Historic Preservation, *California Environmental Quality Act (CEQA) & Historical Resources*. Technical Assistance Series No. 1. California Department of Parks and Recreation, Sacramento, 2001a.

in accordance with PRC §21083.2 (CCR Title 14(3) §15069.5(c)(3)). In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource.[2]

CEQA defines a "unique archaeological resource" as an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
- Has a special and particular quality such as being the oldest of its type or the best available example of its type
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC §21083.2(g))

If an impact to an historical or archaeological resource is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). Mitigation of significant impacts must lessen or eliminate the physical impact that the project will have on the resource. Generally, the use of drawings, photographs, and/or displays does not mitigate the physical impact on the environment caused by demolition or destruction of a historical resource. However, CEQA requires that all feasible mitigation be undertaken even if it does not mitigate impacts to a less than significant level[3] (CCR Title 14(3) §15126.4(a)(1)).

California Register of Historical Resources

The California Register of Historical Resources (California Register) is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The California Register helps government agencies identify, evaluate and protect California's historical resources,[4] and indicates which properties are to be protected from substantial adverse change (PRC §5024.1(a)). Any resource listed in, or eligible for listing in, the California Register is to be considered during the CEQA process.[5]

A cultural resource is evaluated under four California Register criteria to determine its historical significance. A resource must be significant at the local, state or national level in accordance with one or more of the following criteria:

- Is associated with events that have made a significant contribution to the broad pattern 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
- Has yielded, or may be likely to yield, information important in prehistory or history

[2] Bass, Ron, Albert I. Herson, and Kenneth M. Bogdan, *CEQA Deskbook.* Solano Books, Point Arena, California, 1999:105.
[3] California Office of Historic Preservation 2001a:3-4.
[4] California Office of Historic Preservation, California Register of Historical Resources: *Q & A for Local Governments.* Technical Assistance Series No. 4. California Department of Parks and Recreation, Sacramento, 2001b.
[5] California Office of Historic Preservation 2001a:4

Age

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time must have passed to allow a "scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of the time needed to understand the historical importance of a resource (CCR Title 14(11.5) §4852 (d)(2)).[6] The State of California Office of Historic Preservation recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older.[7]

Integrity

The California Register also requires a resource to possess integrity, which is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling and association."[8]

Period of Significance

The period of significance for a property is "the span of time when a property was associated with important events, activities, persons, cultural groups, and land uses or attained important physical qualities or characteristics."[9] The period of significance begins with the date of the earliest important land use or activity that is reflected by historic characteristics tangible today. The period closes with the date when events having historical importance ended. The period of significance for an archeological property is "the time range (which is usually estimated) during which the property was occupied or used and for which the property is likely to yield important information".[10] Archaeological properties may have more than one period of significance.

Resources that are significant, meet the age guidelines, and possess integrity will generally be considered eligible for listing in the California Register.

California Public Resources Code

California Public Resources Code §5097.5 prohibits excavation or removal of any "vertebrate paleontological site... or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

California Health and Safety Code

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there must be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent

[6] California Office of Historic Preservation, *California Register and National Register: A Comparison*. Technical Assistance Series No. 6. California Department of Parks and Recreation, Sacramento, 1999.
[7] California Office of Historic Preservation, *California Historical Landmarks*. California Department of Parks and Recreation, Sacramento, 1995.
[8] California Office of Historic Preservation 1999:2.
[9] National Park Service, *Guidelines for Evaluating and Documenting Rural Historic Landscapes*. National Park Service, Washington D.C., 1999:21.
[10] National Park Service, *Guidelines for Evaluating and Registering Archeological Properties*. National Park Service, Washington D.C., 2000:34.

remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

PALEONTOLOGICAL RESOURCES

Paleontological resources are fossilized remains of plants and animals, and associated deposits. CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature. If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 also applies to paleontological resources (see above).

The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources.[11]

LOCAL

City of Pittsburg General Plan

The City of Pittsburg General Plan (City General Plan) contains the following policies in the Resource Conservation Element, which are relevant to the proposed project:

Policy 9-P-39: Ensure the protection of known archeological resources in the City by acquiring a records review for any development proposed in areas of known resources. If such resources are found, limit urban development in the vicinity or account for the resources.

Policy 9-P-40: In accordance with State law, ensure the preparation of a resource mitigation plan and monitoring program by a qualified archeologist in the event that archeological resources are uncovered.

Policy 9-P-41: If archeological resources are found during ground-breaking for new urban development, halt construction immediately and conduct an archeological investigation to collect all valuable remnants.

Contra Costa County General Plan

The project area is located in unincorporated Contra Costa County. The following Contra Costa County General Plan (County General Plan) goals and policies contained in the Open Space Element are relevant to the proposed project:

Goal 9-31: To identify and preserve important archaeological and historic resources within the County.

[11] Conformable Impact Mitigation Guidelines Committee, Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources: Standard Guidelines. *Society of Vertebrate Paleontology News Bulletin* 1995, 163:22-27.

Policy 9-32: Areas which have identifiable and important archaeological or historic significance shall be preserved for such uses, preferably in public ownership.

Policy 9-33: Buildings or structures that have visual merit and historic value shall be protected.

4.7.3 ENVIRONMENTAL ANALYSIS

CULTURAL RESOURCES

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact on cultural/paleontological resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature
- Disturb any human remains, including those interred outside formal cemeteries

POTENTIAL IMPACTS AND MITIGATION MEASURES

Cultural Resources Impacts

◆ ***CONSTRUCTION OF THE ROADWAY ALIGNMENT HAS THE POTENTIAL TO CAUSE AN ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE AS DEFINED IN SECTION 15064.5***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Two historic sites are recorded near the proposed project alignment. In 2002, the Warren and William Abrams Ranch complex (P-07-002566) (identified as the Thomas Ranch), located in the northwest quarter of the southwest quarter of Section 28, was recorded and evaluated for the National Register and California Register. The complex was constructed after 1901 and before 1950 and some of the buildings are still used by the current landowners, the Thomas family. The historic building complex is believed eligible for the National Register and California Register. The proposed project alignment passes between 2,789 to 3,280 feet east and south of the ranch complex.

The historic Abrams Ranch Complex (P-07-002566) is believed to be eligible for the National Register of Historic Places and the California Register because of its local importance as a good example of early 20th century ranch buildings that illustrate western Contra Costa County ranching history. Road construction would not result in direct physical impacts to the buildings, which have been largely unchanged since the early 20th century. The roadway would be situated on the north slope of the hill above the ranch complex and its construction would, to some extent, affect the visual setting of the property; however, the site evaluation determined that the ranch setting had been previously compromised due to the encroachment of a housing subdivision to the north of the ranch buildings and, as a result, the setting was considered only fair. The evaluation of the historic property was based more importantly on the presence and integrity of the buildings at the site, and it specified that impacts to the setting of the ranch would not affect the potential eligibility of the Abrams Ranch Complex for listing in the National Register and California Register (A/HC, 2007).

Although construction of the proposed roadway alignment would not alter the Abrams Ranch Complex, the visual setting could be adversely affected by proposed project construction. Implementation of Mitigation Measure CULT1 would ensure that impacts are less than significant.

Historic site P-07-002564 (CA-CCO-747H), an approximately 600-linear-foot-long segment of an old road, was recorded during the 2002 survey in the southwest quarter of Section 28, running north-south on the east side of and slightly above a drainage. It is approximately 6 to 10 feet wide. An apparent continuation of the road could be seen to the south, outside the proposed project boundaries. This historic road segment (P-07-002564) was recorded within the present project area during the archaeological survey in 2002 (Baker, 2007). It is likely that it was associated with 19th century transportation to and from the historic mining area to the south of the project site, especially the communities of Nortonville and Somersville, although no specific historic information related to the road was found. This road segment appears to have relatively good integrity, but it is unlikely to qualify for the National Register on its own. If, however, more road segments are recorded to the south and their integrity and historic associations determined, it is possible that P-07-002564 could be considered a contributing element of a larger historic site. In any case, the construction of the proposed James Donlon Boulevard Extension Project is 800 feet north of this feature; therefore, the proposed project would not effect this resources.

Mitigation Measure:

CULT1 Roadway construction and auxiliary activities shall avoid the Abrams Ranch Complex. In addition, the ranch complex shall not be used as a construction staging area.

Level of Significance After Mitigation: Less Than Significant Impact.

Archaeological Resources Impacts

- ***CONSTRUCTION OF THE ROADWAY ALIGNMENT HAS THE POTENTIAL TO CAUSE AN ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE PURSUANT TO SECTION 15064.5.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Wayne Thomas, the former owner of the study area, said that over the years an occasional Indian artifact, such as bowl mortars and grinding stones, had been found on the property, but these had long since been collected. He relayed no specific information about locations (Baker 2012).

One prehistoric cultural resource, P-07-003086 (CA-CCO-819), a prehistoric lithic scatter, was identified within the proposed project alignment during the March 2012 archaeological field survey (Baker, 2012). As currently proposed, roadway construction would cover the site with fill material. Site P-07-003086 was subjected to test excavations in October 2012 and, as a result, is believed to be not eligible for either the California Register under Criteria 1-4 or the National Register under Criteria A through D because of a lack of information potential with which to address substantial research questions (Pacific Legacy and A/HC, 2012).

Construction of the proposed project would not affect previously recorded archaeological resources. Nevertheless, the potential remains that unrecorded resources (historic and prehistoric) could be uncovered during grading and construction of the project. Uncovering prehistoric resources or historic resources during excavation and/or grading activities could result in their damage or destruction, which is considered a potentially significant impact. Implementation of Mitigation Measure CULT2 would reduce this impact to a less than significant level.

Mitigation Measure:

CULT2 If deposits of prehistoric or historical archaeological materials are encountered during project activities, all work within 25 feet of the discovery shall be immediately halted and a qualified archaeologist contacted to assess the finds and make recommendations. Project personnel shall not collect or move any archaeological materials or human remains and associated materials.

It is recommended that adverse effects to archaeological deposits be avoided by project activities. If such deposits cannot feasibly be avoided, they shall be evaluated for their eligibility for listing in the California Register of Historical Resources. If the deposits are not significant, avoidance is not necessary. If the deposits are eligible, they shall be avoided or adverse effects must be mitigated.

Prehistoric materials can include flaked-stone tools (e.g. projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Historical materials can include wood, stone, concrete, or adobe footings, walls and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse.

Level of Significance After Mitigation: Less Than Significant Impact.

Human Remains Impacts

- ***CONSTRUCTION ACTIVITIES COULD DISTURB HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Although no human remains were identified within the project area, the presence of human remains cannot be ruled out. During construction associated with the roadway alignment, the project site would undergo excavation and grading. These activities would intrude into the soil, which could uncover previously unknown prehistoric resources, including human remains. Uncovering human remains during excavation and/or grading activities could result in their damage or destruction, which is considered a potentially significant impact. Implementation of Mitigation Measure CULT3 would reduce potential impacts to less than significant.

Mitigation Measure:

CULT3 If human remains are encountered, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted (if an archaeological monitor is not present) to assess the situation. If the human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission shall identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. A report of findings shall be submitted to the City of Pittsburg Development Services Department, Contra Costa County, and the Northwest Information Center.

Level of Significance After Mitigation: Less Than Significant Impact.

Paleontological Resources Impacts

- ***THE PROPOSED PROJECT HAS THE POTENTIAL TO DISTURB OR DESTROY UNKNOWN PALEONTOLOGICAL RESOURCES.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: As discussed above, a paleontological record search was completed through the University of California Museum of Paleontology at University of California at Berkeley. The record search identified paleontological resources, both vertebrate and botanical resources, in close proximity to the proposed project alignment. The record search identified approximately 20 vertebrate locals within a 1.5-mile radius of the proposed project. The nearest locals include V6833 and V6821, located within Township 2 North, Range 1 East, Section 29, immediately north of the proposed project alignment. These paleontological resources are associated with *Chondrichthyes batoidea*, commonly known as rays, and *Osteichthyes* sp., commonly known as boney fish. The record search also identified three paleobotany locals within 1.5 miles of the proposed project, all located west of Kirker Pass Road. The nearest local, UCMP P3829, Loma Ranch Wood, is west of Kirker Pass Road and is associated with a piece of beaver-gnawed petrified wood. The other two sites, located farther west of Kirker Pass Road than UCMP P3829, are UCMP P607 and P3836, which are associated with well-preserved leaf compressions. These paleobotany locals identified to the west of Kirker Pass Road were found within the Neroly formation, which is one of the geologic formations within the project site (see Figure 4.8-1, Geologic Map). It is not anticipated the proposed project would result in the direct destruction of the resources identified during the record search; however, a paleontologist shall monitor construction per Mitigation Measures CULT4, which would reduce any impacts to less than significant. All other vertebrate resources identified during the record search are located outside of the study area.

Construction of the proposed project would involve site preparation (e.g., grading, trenching, or other excavation) that could result in the uncovering of previously unidentified paleontological resources. Mitigation Measure CULT4 would require a paleontologist to monitor ground disturbing activities, thus reducing this impact to less than significant.

Mitigation Measure:

CULT4 A paleontologist shall monitor initial project ground disturbing activities at or below five feet from the original ground surface or at any direct exposure of bedrock. A sample of alluvium below this soil layer depth shall be taken for presence-absence testing of microvertebrate and botanical fossils. Subsequent to the initial monitoring and sediment sampling, the paleontologist can then determine if further monitoring, periodic site reviews, or no further monitoring for paleontological resources is appropriate. In addition, a paleontologist shall monitor ground disturbing activities occurring within close proximity of V6821, near Kirker Pass Road and Kirker Creek, within Section 29, Township 2 North, Range 1 East.

Paleontological monitors shall be empowered to halt construction activities at the location of a discovery to review the possible paleontological material and to protect the resource while it is being evaluated. Monitoring shall continue until, in the paleontologist's judgment, paleontological resources are not likely to be discovered.

If paleontological resources are discovered during project activities, all work within 25 feet of the discovery shall be redirected until the paleontological monitor has assessed the situation and made recommendations regarding their treatment. The paleontological monitor shall also contact University of California Museum of Paleontology at University of California at Berkeley regarding any discoveries of paleontological resources.

It is recommended that adverse effects to paleontological resources be avoided by project activities. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, they shall be avoided to ensure no adverse effects, or such effects must be mitigated.

Level of Significance After Mitigation: Less Than Significant Impact.

4.8 GEOLOGY AND SOILS

This section is based on information contained in the City of Pittsburg General Plan (City General Plan), and geotechnical studies prepared by Kleinfelder Engineering (Kleinfelder). These studies include: *Geological and Geotechnical Investigation Report: Proposed Buchannan Road Bypass Pittsburg, California,* January 2008; *Engineering Geologic and Geotechnical Feasibility Report: Four Proposed James Donlon Boulevard Extension Alternatives*, March 2012; and *Supplemental Engineering Geologic and Geotechnical Report James Donlon Boulevard Alignment Extension Middle Alignment (C2-Low) Alternative*, September 2012.

4.8.1 ENVIRONMENTAL SETTING

REGIONAL GEOLOGY

The project area is situated along the northern foothills of Mount Diablo in the northern portions of Contra Costa County, generally along the northern end of elevated ridgelines bordering the relatively flat alluvial plains. To the north beyond the alluvial plains lies the San Joaquin River near its junction with the Sacramento River. The north/south trending ridgelines are separated by several prominent drainage courses that flow northward towards the alluvial plans and ultimately Suisun Bay, which is part of the greater San Francisco Bay.

The project area elevation ranges from approximately 177 feet above mean sea level (amsl) near the northeastern portion of the project area to approximately 564 feet amsl along the southernmost portion of the project study area.

The majority of Contra Costa County (County) lies within the Coast Range Geomorphic Province of Central California. The geomorphic province generally contains discontinuous series of northwest-trending mountain ranges, ridges, and intervening valleys characterized by complex folding and faulting.

The dominant structural feature in the Coast Range Geomorphic Province is the San Andreas Fault, which is a strike-slip fault with a right-lateral sense of motion. Numerous fault traces such as the Hayward, Calaveras and San Gregorio, among others, comprise the San Andreas Fault system in the San Francisco Bay Area. The San Andreas Fault trace is the northern boundary between two tectonic plates, the Pacific Plate to the west of the fault and the North American Plate to the east of the fault.

In the San Francisco Bay Area, movement along this plate boundary is concentrated on the San Andreas Fault; however, it is also distributed to a lesser extent across a number of the other near-by faults. The northwest trend of the faults within the San Andreas Fault system is largely responsible for the strong northwest structural orientation of geologic and geomorphic features in the San Francisco Bay Area.

The basement rocks east of the San Andreas Fault are Jurassic to Cretaceous age (195-65 million years before present) rocks of the Franciscan Complex. This Complex is generally comprised of a chaotic mixture of highly deformed marine sedimentary, submarine volcanic and metamorphic rocks. West of the San Andreas Fault, the basement rocks are composed of the Cretaceous age (140 to 65 million years before present) granitic Salinian block. The basement rocks on both sides of the San Andreas Fault are overlain by Cretaceous, Tertiary (66 to 1.6 million before present) and Quaternary age (1.6 million years old or younger) marine and continental sedimentary and local volcanic rocks. These Cretaceous and Tertiary rocks have typically been extensively folded and faulted largely as a result of movement along the San Andreas Fault system, which has been ongoing for about the last 25 million years. The inland valleys, as well as the structural depression containing the San Francisco Bay, are filled with unconsolidated to semi-consolidated surficial deposits of Quaternary Age. Surficial continental deposits (alluvium, colluvium and landslide deposits) consist of varying mixtures of unconsolidated to semi-

consolidated sand, silt, clay and gravel while Bay deposits typically consist of very soft organic rich silt and clay (Bay mud) or sand.

GEOLOGIC SETTING

The bedrock formations within the project include the following and are listed below, starting with the northernmost (youngest) units (Kleinfelder, 2012; Figure 4.8-1, *Local Geologic Map*):

- The Pliocene age (approximately two to four million years old) Tulare formation (map symbol Ttu) is largely comprised of continental (non-marine) sandy claystone, sandstone, and conglomerate;
- The Pliocene age (approximately four to five million years old) Lawlor Tuff (map symbol Tlt) which is chiefly comprised of pyroclastic (volcanic ejecta) pumice lapilli tuff and water-reworked tuff deposited in a sedimentary setting;
- The Miocene age (about 20 million years old) Neroly formation (map sybol Tn) which is mostly comprised of continental blue andesitic sandstone and siltstone;
- The Miocene age (about 20 million years old) Cierbo formation (map symbol Tc) which is generally comprised of marine pebbly and fossilifersou (clam, gastropod, and oyster shells) sandstone and conglomerate; and
- The Ogliocene age (about 30 million years old) Kirker formation (map symbols Tkt and Tks) which is mainly comprised of volcanic tuff and tuffaceous siltstone and sandstone.

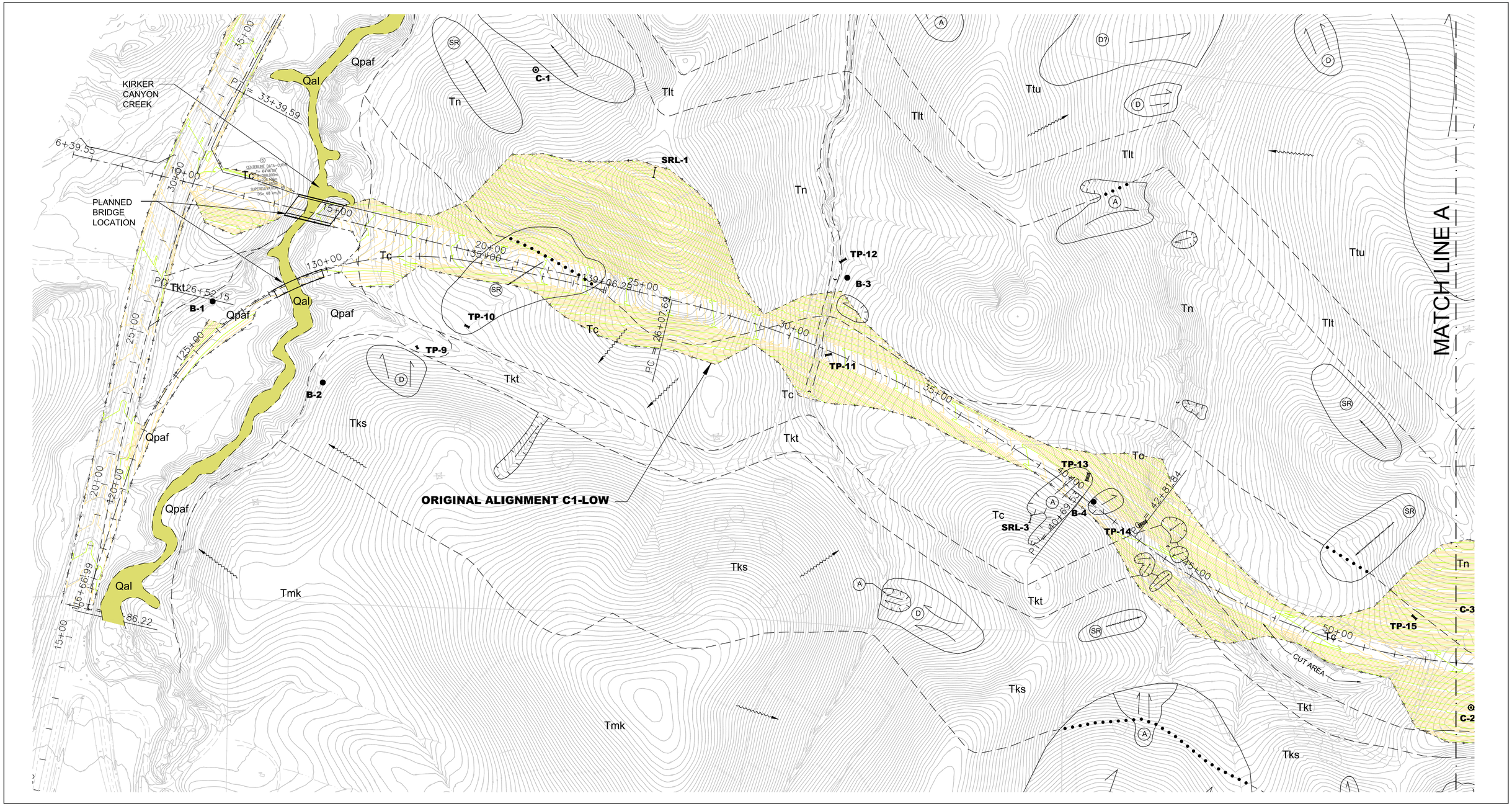
Bedrock Units

The bedrock units found in the proposed project vicinity as further detailed below. These materials are described and listed according to age beginning with the youngest formation first (Kleinfelder, 2012; refer to Appendix E).

Tulare Formation is a sedimentary formation derived from older sedimentary and volcanic units from the surrounding area, generally to the south. The sandy claystone generally constitutes the majority of the unity but localized clean sandy zones are also included. The sand claystone is generally weak to plastic, highly weathered, of low hardness (firm) and thickly bedded. These characteristics result in the observed soft topography of low rounded hills within the area. This formation is susceptible to soil creep and landslide activities. The northfacing slopes along and within areas adjacent to the geologic contact with the underlying Lawlor Tuff units are especially susceptible to landslide activities. (Kleinfelder, 2012)

Lawlor Tuff Formation is comprised of pyroclastic (volcanic ejecta) material deposited in a sedimentary setting. This unit forms distinctively resistant outcrops that can be seen along their northwestern strike for eight miles in the Antioch and Pittsburg area. Under certain conditions, this material has the potential to react with concrete as well as collapse under wetted conditions, and can be moderately to highly expansive. The surface layer of Lawlor Tuff tends to be fairly impervious allowing the material to act as a medium to transmit water northward beneath the base of the above Tulare Formation. This action can contribute to landslide in some instances. (Kleinfelder, 2012)

Neroly Formation is largely comprised of continental blue andesitic sandstone and siltstone with interbeds of gravel. It is also commonly cross-bedded. This formation forms prominent “hogbacks” and ledges, providing good outcrop exposures. Soils derived from this material are expansive, while the undisturbed bedrock is considered to have low expansion potential. (Kleinfelder, 2012)



Source: Kleinfelder, May 2012.

EXPLANATION

- APPROXIMATE GEOLOGIC CONTACT – dotted where buried
- CREEPING COLLUVIUM
- INCISED EROSION RILLING OR SHALLOW SLUMP
- SLOPE WASH (arrows indicate direction of movement)
- ACTIVE LANDSLIDE DEPOSIT (arrows indicate direction of movement)
- DORMANT LANDSLIDE DEPOSIT (arrows indicate direction of movement)

Qal	UNDIFFERENTIATED RECENT ALLUVIUM
Qpaf	PLEISTOCENE ALLUVIAL FAN DEPOSIT
Ttu	TERTIARY TULARE FORMATION (Undifferentiated)
Tlt	TERTIARY LAWLOR TUFF (TUFFACEOUS SANDSTONE AND VOLCANIC TUFF)
Tn	TERTIATY NEROLY FORMATION (BLUE SANDSTONE)
Tc	TERTIARY CIERBO FORMATION (FOSSILIFEROUS SANDSTONE)
Tkt	TERTIARY KIRKER FORMATION (VOLCANIC TUFF)
Tks	TERTIARY KIRKER FORMATION (TUFFACEOUS SANDSTONE)
Tmk	TERTIARY MARKLEY FORMATION (SANDSTONE AND SHALE)

B-7 ●	SOIL BORING (By Kleinfelder, 2008)
C-4 ⊙	ROCK CORE (By Kleinfelder, 2008)
TP-19 ↘	TEST PIT OR EXPLORATORY FAULT TRENCH (By Kleinfelder, 2008)
SRL-5 I	SEISMIC REFRACTION LINES (By Kleinfelder, 2008)

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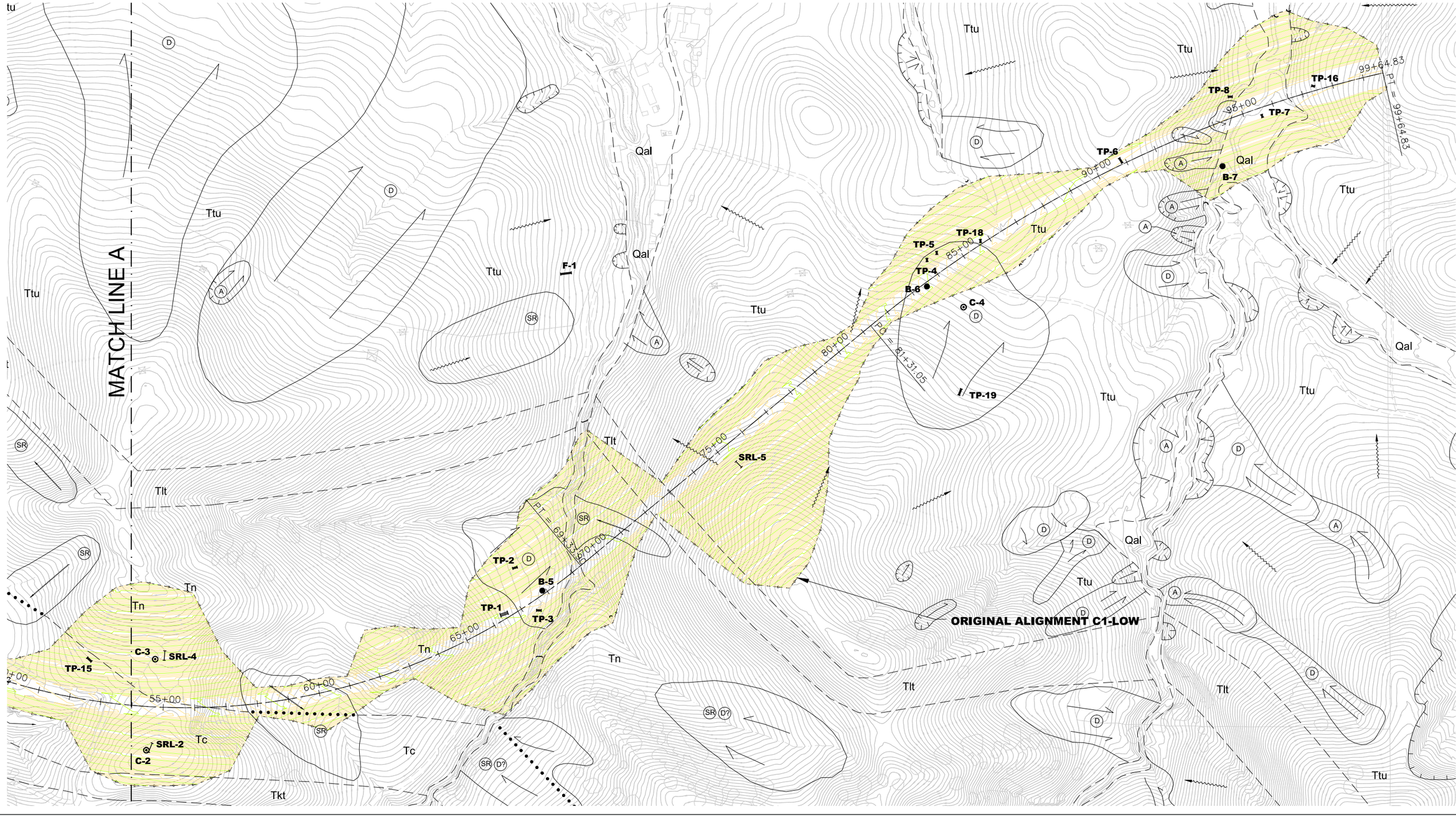
JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Geologic Map

Figure 4.8-1a



Source: Kleinfelder, May 2012.

EXPLANATION

- APPROXIMATE GEOLOGIC CONTACT – dotted where buried
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- TP-19 TEST PIT OR EXPLORATORY FAULT TRENCH (By Kleinfelder, 2008)
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0 300' APPROXIMATE

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JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Geologic Map

2/26/13 JN 130944-18838 MAS

Figure 4.8-1b

The Miocene Cierbo Formation is generally comprised of marine pebbly and fossilferous sandstone ranging from fine to coarse-grained with stingers of pebbles. This formation often contains tuffaceous and diatomaceous shale and lignite seams. Within the vicinity of the project, the upper (younger) portion of the formation was found to be cemented by calcite thus forming hard topography. The bedrock generally has a low expansion potential while the weathered portions and surficial mantle are considered expansive. (Kleinfelder, 2012)

The Kirker Formation is mainly comprised of marine volcanic tuff, and tuffaceous sandstone and mudstone. Kirker Formation tuff was observed along the base of the small hill situated near the extreme western portion of the project site, between the Kirker Creek channel and between the Kirker Creek channel and Kirker Pass Road. The formation units are considered expansive where weathered or mechanically broken and their soil matles are highly expansive. These units are noted to react adversely with concrete, expansive when broken down and have low strengths. (Kleinfelder, 2012)

Quaternary Surficial Deposits

Quaternary surficial deposits such as alluvium, colluviums/slope wash, and landslide deposits were observed and mapped along some portions of the project site (Kleinfelder, 2012; refer to Appendix E). These surficial deposits are discussed below.

Quaternary Alluvial Deposits are generally comprised of varying amounts of clay, silt, sand and gravel and are transported and laid in place by running water. Pleistocene alluvial fan deposits (Qpaf) are the relatively flat topographic areas in the vicinity of Kirker Canyon Creek and along the northern base of the foothills. Within the project vicinity, these areas were generally noted at slightly elevated terraces bordering the creek channels (Kleinfelder 2012). Where these deposits are thick, they often consist of soft and locally wet sediment at depth. Soft alluvial sediments are usually removed from areas to receive engineered fills to lessen sub sequent settlement of the fills.

Colluvium is comprised of loose, heterogeneous soil and rock material that is deposited by natural mass-wasting processes. **Slope Wash** is made up of soil and rock materials that are or have been transported down a slope by mass-wasting processes assisted by running water. Both types of deposits tend to creep down steep slope faces and are usually present along the axis of drainage swales and topographic hollows. Typically the upper portion of the colluvial material have undergone shrinking and swelling cycles. These deposits generally occupy the northern portion of the project site. Two moderate-size slope wash deposits underlie portions of the alignment along the southern portion of the prominent drainage swale adjacent to the Thomas Ranch.

Soils

The soils within the project area have been classified and described by the U.S. Soil Conservation Service, which was last updated in December 2007. The soils consist mainly of clay with medium to high expansive potential. These soils are potentially subject to moderate to high rates of erosion. The soils within the project area primarily consist of three series/groups, which are the Altamont Group, Lodo Series, and Rincon Series and are listed in Table 4.8-1, *Characteristics of the Soils within the Project Area* (Kleinfelder, 2012; HT Harvey & Associates, 2012). Figure 4.8-2, *Soil Map*, illustrates the project area's soil composition.

The Soil Conservation Service maps show that the majority of the northern portion of the project area is part of the Altamont Group. These materials have a high shrink and swell potential and are corrosive (Kleinfelder, 2012).

More resistant outcrop and peak areas are underlain by soils of the Lodo Series. These materials are described as having a very thin veneer of soil covering rocky terrain. Their expansion and corrosion potentials are more moderate than the Altamont Group soils. Lodo Series soils also have a potential for low strength. Lodo Series soils are located in the higher elevations of the project site.

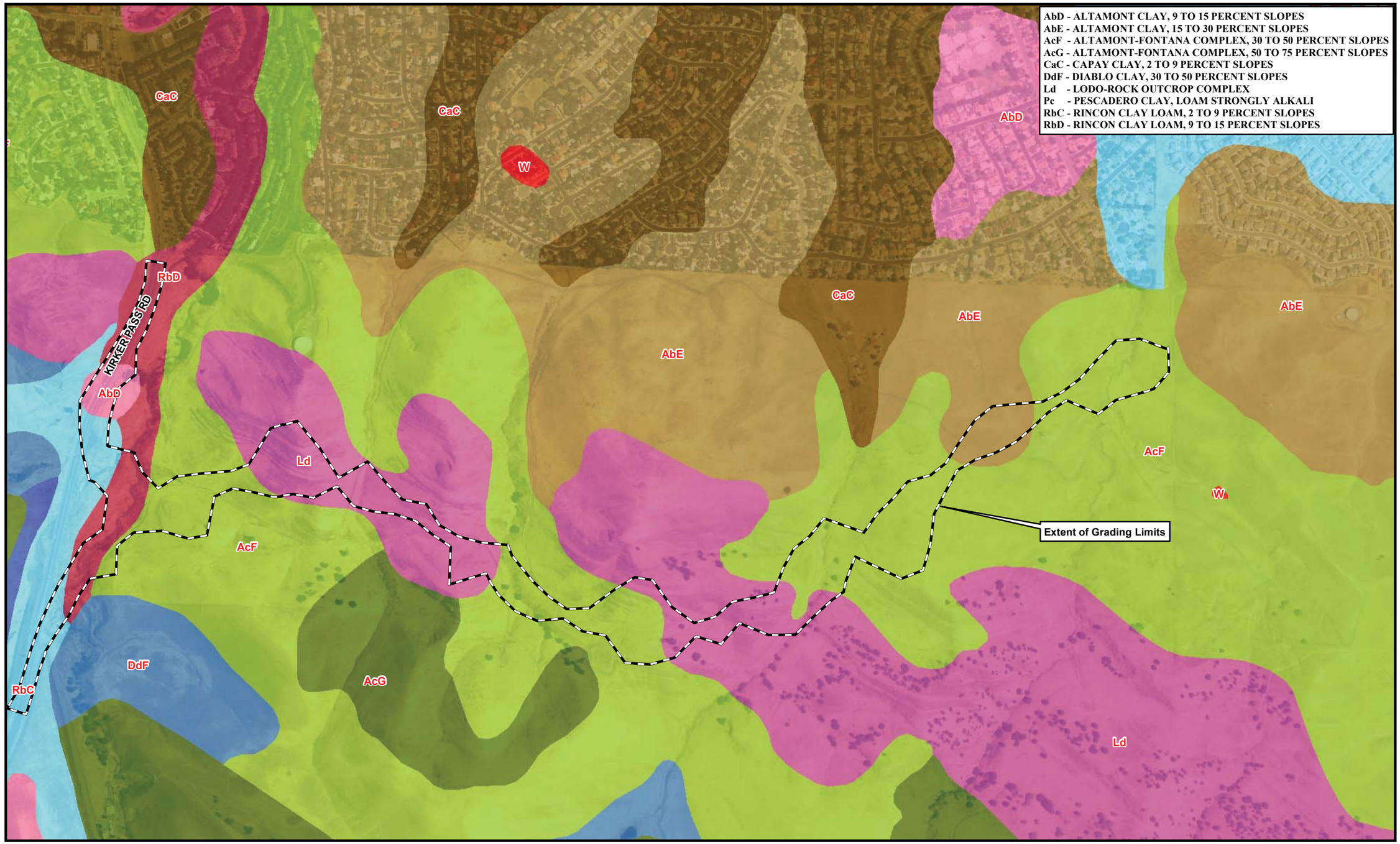
Along the relatively flat areas surrounding the channel of Kirker Creek, soil survey maps show soils belonging to the Rincon Soil Series. These soils tend to be similar in their engineering characteristics to the Altamont Group soils.

Table 4.8-1
Characteristics of the Soils within the Project Area

Soil Series or Group	Depth to Bedrock (feet)	Plasticity Index	Shrink/Swell Potential	Corrosivity	Permeability
Altamont	1.1-1.5	25-30	High	High	Slow
Lodo	0.3-0.5	15-20	Moderate	Moderate	Slow
Rincon	0.1-0.5	15-25	High	High	Slow
Source: Kleinfelder, 2012.					

Slope Stability

Due to the steep nature of the topography in which the proposed project would be constructed, the long-term stability of the surrounding slopes was analyzed as part of Kleinfelder's Geotechnical Investigation. Several landslide deposits were identified within the project area, five of which are anticipated to be within the proposed alignment of the roadway. The majority of the mapped landslide deposits (active and dormant) are situated within the Tulare Formation. As previously noted, its composition makes it susceptible to landslide and soil creep. Slope stability was further analyzed through two representative slope stability cross sections (Kleinfelder, 2012). The Southern California Earthquake Center (SCEC) consider slopes stable when their factor of safety is greater than or equal to 1.5 for static conditions and 1.0 for seismic conditions. The factor of safety for the proposed project for seismic conditions is 1.2. The factor of safety for static conditions ranges from 1.2 to 1.6. The factors below 1.5 for static conditions are associated with areas of groundwater assumed to be 10 feet below ground surface; however, groundwater was not encountered in precious exploratory soil and rock core borings. Four borings were completed near Kirker Pass Road and groundwater was encountered at 19 feet below ground surface (Kleinfelder, 2012). During the pit sampling, wet soils were generally encountered at depths greater than 15 feet below ground surface (Kleinfelder, 2012).



Source: H.T. Harvey & Associates, 2007.

0 700'
APPROXIMATE

12/4/12 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Soils Map

Figure 4.8-2

FAULTING AND SEISMICITY

The project area is located in a region that is traditionally characterized by moderate to high seismic activity. While the project area is not located within an Alquist-Priolo earthquake fault zone, historic earthquake records indicate that the project area vicinity is subject to strong ground shaking as a result of its relatively close proximity to active faults in the region.

The potential for ground shaking intensity within the project area is likely to be strong to very strong as a result of a major earthquake occurring on one of the nearby active faults in the region. The closest fault to the project area is the Greenville-Marsh Creek fault located at a distance of about 3.5 miles towards the southwest. A major earthquake on this fault could cause significant ground shaking within the project area. In addition to the Greenville-Marsh Creek Fault, several other faults of concern lie within proximity of the project area and are listed in Table 4.8-2, *Significant Faults*. The table does not list Kirker Pass, Clayton, Antioch, and Livermore faults, as they are not considered independent seismogenic sources (Kleinfelder, 2012).

Table 4.8-2
Significant Faults

Fault Name and Location	Approximate Closest Distance* (miles)	Magnitude of Maximum Earthquake	Slip Rate (Millimeters per year)
Greenville-Marsh Creek (SW)	3.5	6.9	261
Great Valley 6 (NE)	6	6.7	1.561
Concord-Green Valley (W)	8	6.9	663
Great Valley 5 (NE)	10	6.5	1.561
Mt. Diablo Thrust (SW)	11	6.7	362
Calaveras (SW)	12.5	6.8	662
Hayward (SW)	22	7.1	961
Great Valley 4 (N)	22.5	6.6	1.561
West Napa	24	6.5	161
Rodgers Creek (NW)	26	7.0	962
Great Valley 7 (SE)	27	6.7	1.561
Hayward (SE Extension) (S)	36	6.4	362
Hunting Creek-Berryessa (NW)	37	6.9	663
Calaveras (southern) (S)	38	6.2	1562
San Andreas (SW)	39	7.9	2463
San Gregorio	43.5	7.3	562
Monte Vista-Shannon (SW)	45	6.8	0.460.3
Great Valley 3 (N)	48	6.8	1.561
Point Reyes (NW)	52	6.8	0.360.2
Great Valley 8 (SE)	55	6.6	1.561
Sargent (S)	59	6.8	361.5
Ortigalita	60	6.9	160.5
Zayante-Vergeles	62	6.8	0.160.1

Source: Kleinfelder, 2012.
*Closest distance from the proposed project site to potential rupture

Liquefaction

Liquefaction is a phenomenon in which saturated, granular, cohesionless soils lose strength because of build-up of excess pore water pressure under cyclic loading such as induced by earthquakes. Soils most susceptible to liquefaction are loose, clean, uniformly graded, fine grained sands. Liquefaction can cause embankment displacement and/or building structural damage as a result of shallow foundation failures and/or large vertical and/or lateral displacements. As described earlier, soils at the project area consist of the Altamont Group, Lodo Series, and Rincon Series. The liquefaction potential of these soils is low (Kleinfelder, 2012).

Ground Lurching and Lateral Spreading

Ground lurching and lateral spreading of sloping ground surfaces are related to liquefaction. Based on their preliminary evaluation of the project area conditions, Kleinfelder judged that the risk associated with ground lurching and lateral spreading in the project area is relatively low.

4.8.2 REGULATORY SETTING

Geologic resources and geotechnical hazards are governed primarily by local jurisdictions. The conservation elements and seismic safety elements of city and county general plans contain policies for the protection of geologic features and avoidance of hazards.

The California Environmental Quality Act (CEQA) is the major environmental statute that guides the design and construction of projects on non-federal lands in California. This statute sets forth a specific process of environmental impact analysis and public review. In addition, the project sponsor must comply with other applicable state and local applicable statutes, regulations and policies. Relevant and potentially relevant statutes, regulations, and policies are discussed below.

STATE

Alquist-Priolo Earthquake Fault Zoning Act of 1972

Formerly the Special Studies Zoning Act, the Alquist-Priolo Earthquake Fault Zoning Act of 1972 regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. In accordance with this law, the California Geological Survey maps active faults and designates Earthquake Fault Zones along mapped faults. This Act groups faults into categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be "sufficiently active" and "well defined" by detailed site-specific geologic explorations in order to determine whether building setbacks should be established. Any project that involves the construction of buildings or structures for human occupancy is subject to review under the Alquist-Priolo Earthquake Fault Zoning Act, and any structures for human occupancy must be located at least 50 feet from any active fault.

Seismic Hazards Mapping Act (the Act) of 1990

In accordance with Public Resources Code, Chapter 7.8, Division 2, the California Department of Conservation, Division of Mines and Geology [now the California Geological Survey (CGS)] is directed to delineate Seismic Hazard Zones through the Seismic Hazards Zonation Program. The purpose of the Act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards, such as those associated with strong ground shaking, liquefaction, landslides, other ground failures, or other hazards caused by earthquakes. Cities, counties, and state agencies are directed to use seismic hazard zone maps developed by CGS in their land-use

planning and permitting processes. In accordance with the Seismic Hazards Mapping Act, site-specific geotechnical investigations must be performed prior to permitting most urban development projects within seismic hazard zones.

California Building Code (CBC 2010)

The State of California provides minimum standards for building design through the California Building Code (CBC). The CBC is based on the Uniform Building Code (UBC), which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis), and has been modified for conditions within California. In 2010, a revised version of the CBC took effect. In accordance with the CBC, a grading permit is required if more than 50 cubic yards of soil is moved during implementation of a project. Chapter 16 of the CBC contains definitions of seismic sources and the procedure used to calculate seismic forces on structures.

LOCAL

City of Pittsburg General Plan

The Health and Safety Element of the City General Plan contains several goals and policies with respect to geology and seismicity. Chapter 10.1, of the Health and Safety Element of the City General Plan includes the following policies that apply to the proposed project:

Policy 10-G-4	Mitigate potential seismic hazards, including landsliding and liquefaction, during the design and construction of a new development
Policy 10-P-8	During development review, ensure that new development on unstable slopes is designed to avoid potential soil creep and debris flow hazards. Avoid concentrating runoff within swales and gullies, particularly where cut-and-fill has occurred.
Policy 10-P-9	Ensure geotechnical studies prior to development approval in geologic hazard areas. Contract comprehensive geologic and engineering studies of critical structures regardless of location.
Policy 10-P-15	Develop standards for adequate setbacks from potentially active fault traces for structures identified for human occupancy. Allow roads to be built over potentially active faults only where alternatives are impractical.
Policy 10-P-17	Ensure detailed analysis and mitigation of seismic hazard risk for new development in unstable slope or potential liquefaction areas. Limit the location of critical facilities, such as hospitals, schools and police stations, in such areas.

Contra Costa County General Plan

The Safety Element of the Contra Costa County General Plan (County General Plan) provides several long-term goals and policies regarding seismic hazards in relation to development within the County. The following is a summary of goals and policies that are relevant to this proposed project:

Policy 10-1	Contra Costa County, as part of an area with high seismicity, shall recognize that a severe earthquake hazard exists and shall reflect this recognition in its development review and other programs.
Policy 10-17	Locate roads, particularly those which carry important utilities or large volumes of traffic, over active faults only where other alternatives are impractical.

Policy 10-c Require comprehensive geologic and engineering studies for any critical structure, whether or not it is located within a Special Studies Zone.

Policy 10-27 Approvals of public and private development projects in areas subject to slope failures shall be contingent on geologic and engineering studies which define and delineate potentially hazardous conditions and recommend adequate mitigation.

Policy 10-32 The County shall not accept dedication of public roads in unstable hillside areas, or allow construction of private roads there, which would require an excessive degree of maintenance and repair costs.

Policy 10-p Refer development proposals in areas of potential land instability or geologic hazards to a registered engineering geologist for review and recommendation.

4.8.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact on geology and soils if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault,
  - ii) Strong seismic ground shaking
  - iii) Seismic-related ground failure, including liquefaction
  - iv) Landslides
- Result in substantial soil erosion or the loss of topsoil
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water

POTENTIAL IMPACTS AND MITIGATION MEASURES

Seismic Impacts

♦ ***THE PROPOSED PROJECT COULD EXPOSE PEOPLE OR STRUCTURES TO POTENTIAL SUBSTANTIAL ADVERSE EFFECTS 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 OR BASED ON SUBSTANTIAL EVIDENCE OF A KNOWN FAULT AND STRONG SEISMIC GROUND SHAKING.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: There are no known active faults that have been mapped crossing the project site and the site is not located in an Alquist-Priolo Fault Zone as defined by the State Geologist. The project site is located in the greater San Francisco Bay Region, a seismically active area within California and the U.S. The Greenville-Marsh Creek fault lies about 3.5 miles to the southeast of the project area and is the closest fault to the proposed project. Other faults throughout the region (refer to Table 4.8-2, *Significant Faults*) have potential to cause strong ground shaking in the project area during a seismic event. The absence of a known active fault traces crossing the project site results in very low potential for ground surface rupture to occur as a result of fault movement. However, the project site would be susceptible to ground shaking due to the geologically-active nature of the greater San Francisco Bay Region. Conformance with the California Building Code (CBC), as well as adhere to standard engineering practices, would reduce the effects of seismic ground shaking. Therefore, impacts would be less than significant.

Mitigation Measure: No mitigation is required.

Level of Significance: Less than significant.

Soil Erosion Impacts

- ***THE PROJECT COULD RESULT IN SUBSTANTIAL SOIL EROSION OR THE LOSS OF TOPSOIL***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Project construction would involve grading and earth movement activities, which would increase the potential for erosion. If not properly stabilized during construction, the soils could be subject to increased soil loss and erosion by wind and storm water runoff. Upon completion of construction, cut slopes would be exposed to wind and storm events, in areas that had hillside vegetation. Within the project site, erosion is an ongoing process that would continue primarily within existing drainage channels during and following periods of rainfall. The soils within the project area are potentially subject to moderate to high rates of erosion. As discussed in Section 4.10, *Hydrology and Water Quality*, the proposed project would include a stormwater drainage system that would be configured to discharge toward logical stream crossings to maintain existing drainage patterns and minimize erosion potential. The culvert sizes would convey ample runoff without excessively erosive discharge velocities. In addition, the proposed project would result in the placement of rip rap in some drainage areas to further protect the slopes from erosion.

The proposed project would be required to obtain coverage under the NPDES General Permit issued by the SWRCB for stormwater discharge associated with construction activities. Compliance with the NPDES General Permit would require the preparation of a SWPPP, which would include BMPs that would reduce potential erosion or siltation impacts.

Implementation of an Erosion Control Plan (Mitigation Measure GS1) and Revegetation Plan (Mitigation Measure GS2) would protect newly exposed slopes and creek banks from wind and stormwater erosion during construction and operation of the proposed project. Implementation of Mitigation Measures WQ1 through WQ3 (refer to Section 4.10, *Hydrology and Water Quality*) would ensure that impacts associated with construction related soil erosion would be less than significant.

Mitigation Measures:

Implement Mitigation Measures WQ1 through WQ3, Section 4.10, *Hydrology and Water Quality*.

GS1 Prior to issuance of a grading permit and final project approval, the project sponsor shall submit an Erosion Control Plan to the City of Pittsburg Development Services Department for review and approval by the City Engineer. The Erosion Control Plan shall include measures to protect slopes that are anticipated to be susceptible to erosion by wind and rainfall. The plan shall also provide measures for the protection of creek banks where undercutting could occur during large volume flows.

GS2 Prior to approval of final design and issuance of a grading permit, the project sponsor shall submit final grading and revegetation plans to the City of Pittsburg Development Services Department for review and approval. The final grading plan shall include measures for terracing to control erosion on all slopes; however, slopes with greater than 3:1 inclination shall require additional protection measures. Drainage terraces shall be constructed at 30 to 50 foot intervals on slopes with greater than 3:1 inclination in order to aid the control of surface runoff. The revegetation plans shall ensure that all slopes are be planted with fast growing, deep rooted, low water tolerant plant species in order to curtail the effects of erosion.

Level of Significance After Mitigation: Less Than Significant Impact.

Unstable Soil Impacts

- ***THE PROPOSED PROJECT COULD 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 LANDSLIDES AND SUBSIDENCE.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis:

Landslides

Active and dormant landslides have been identified throughout the project area. The *Engineering Geologic and Geotechnical Feasibility Report: Four Proposed James Donlon Boulevard Extension Alternatives*, prepared by Kleinfelder in March 2012, maps the areas of slope wash, as well as active and dormant landslides. The *Supplemental Engineering Geologic and Geotechnical Report James Donlon Boulevard Alignment Extension Middle Alignment (C2-Low) Alternative*, prepared by Kleinfelder in September 2012, further investigates the areas requiring cut and fill slopes and provides engineering recommendations which have been incorporated into the design of the proposed project.

While the Supplemental Geotechnical Report confirms that the proposed project would cross areas of dormant landslides, the topography of the project area presents the potential for other landslides to occur in the future. Areas susceptible to landsliding may experience slippage during earthquake ground shaking, the magnitude of which would be influenced by the level of ground shaking and ground saturation induced by rainfall. Due to these project area conditions and the relatively steep nature of the topography, slope failure is a possibility. Cut slopes proposed higher or lower than the right-of-way are of particular concern. In addition, all bedrock formations mapped within the project area dip

northeastward, which makes them more susceptible to landslide. In areas where slopes would be steeper due to the bedrock formations, buttresses and 12-foot-wide drainage terraces and concrete v-ditches have been incorporated into the project design to minimize the landslide potential. In addition, the implementation of Mitigation Measures GS3 through GS6, would further reduce potentially significant slope stability impacts to a less than significant level.

Liquefaction and Lateral Spreading

As stated above, liquefaction is a phenomenon in which saturated, granular, cohesionless soils lose strength during ground shaking events, and soils become liquefiable. There are no reported records of liquefaction with 10 miles of the proposed project limits. Bedrock units underlie the majority of the project site; however, alluvial soils are present along the margins of five drainage courses that cross the proposed roadway alignment. Groundwater was not encountered in the 12 borings, ranging from 15 to 76 feet below ground surface, at the project site in 2007. Four borings were completed near Kirker Pass Road in preparation of the March 2012 *Engineering Geologic and Geotechnical Feasibility Report* (provided in Appendix E) and groundwater was encountered at 19 feet below ground surface. During the pit sampling, wet soils were generally encountered at depths greater than 15 feet below ground surface. However, less than one mile to the north, at Buchanan Road and Loveridge Road, groundwater depths have been reported at more than 50 feet below ground surface (Kleinfelder, March 2012 and September 2012).

The potential for liquefaction within the project site is considered low. Bedrock units underlie the majority of the area and the groundwater is relatively deep, ranging from 19 feet to more than 50 feet below ground surface. Implementation of Mitigation Measure would reduce potentially significant impacts associated with liquefaction to a less than significant level.

As previously discussed, lateral spreading typically occurs adjacent to free faces, such as slopes and creek channels. Considering the general topography of the terrain and the low potential of liquefaction, the potential for lateral spreading to occur on the project site would be low. However, the immediate area surrounding Kirker Creek presents the potential for lateral spreading where creek bed soils are up to 39 feet deep. Lateral spreading has the potential to affect bridges, overpasses, and other structures as vertical and horizontal ground movement can occur as a result. Implementation of Mitigation Measures, especially GS5, would reduce the potentially significant impacts associated with lateral spreading to a less than significant level.

Settlement and Fill

A substantial amount of cut and fill would be required in certain areas of the project. Approximately 2,165,000 cubic yards of grading would be required for the proposed project. Fill has the potential for movement and vertical settlement of one to two feet. Where canyon areas are filled, the edges of the fill may undergo extension while the central portion of the fill may undergo horizontal compression. Stream channel crossings also present soft, compressible soils, where weight of the heavy fill embankment could cause compression if weak materials are not entirely removed. The movement of fill materials has the potential to cause damage to improved surfaces, buried pipes, or other developed facilities. All proposed fill slopes would be supported on keyway excavations that extend into the underlying bedrock or firm soil. Settlement of deep fills could also be reduced by compacting the portion of the fill below a depth of 10 feet from finished grade to a minimum of 95 percent compaction. Implementation of Mitigation Measure GS6 would reduce any potentially significant impacts associated with settlement of fill to a less than significant level.

Mitigation Measures:

GS3 Prior to the issuance of any building or grading permit, the project sponsor shall submit grading plans to the City of Pittsburg Development Services Department for review and approval. The grading plans shall provide the following:

a. The grading plans shall provide details for the removal of any landslide deposits that underlie the roadway alignment. Where landslide deposits are found to underlie fill, these areas shall be overexcavated and replaced as engineered fill. In addition, an infield Certified Engineering Geologist shall evaluate landslide deposits that underlie cut areas of the alignment. The Certified Engineering Geologist shall evaluate grading operations to determine the needs, if any, for remediation after any cuts have been performed. In addition, the grading plans shall include details for buttressing and repair of landslides that could have an impact on the alignment. The grading plan shall also depict plans for debris benches and basins to collect landslide materials between the edge of the slope and the roadway if complete removal of the landslide material is not possible.

b. The grading plans shall demonstrate that any cut slopes are not steeper than that of the bedrock dip to prevent the bedrock dip from day lighting on the slope face. Where the bedding angle is considered adverse, or the soil exposed is either weak or sandy, it may be necessary to cut slope faces and subdrain them. In addition, cut and fill slopes shall be observed by a Certified Engineering Geologist during grading activity in order to evaluate the exposed bedrock dip, the nature of the exposed materials, and how that relates to the proposed gradient. Additional remediation of the slope faces may be needed based on the results of the insitu conditions as determined by the project Engineering Geologist.

c. Grading plans shall demonstrate that where fill is placed on hillside slopes steeper than 5:1, keyways and benches would be excavated into the exposed ground surface to provide support for the fill. The keyways and benches should extend into competent natural soil or bedrock. Horizontal benches should also be excavated into competent materials (typically at five foot vertical intervals as the fill placement progresses up the slope). The keyways shall also provide appropriate means for drainage.

d. The grading plans shall demonstrate that use of tuff/tuffaceous materials are used limitedly for construction fill under the roadway alignment. If tuff/tuffaceous materials are used as fill they shall not be allowed near the surface of any fill embankment. Additionally, the tuff/tuffaceous material should be mixed with substantial amounts of other soil and rock materials to dilute its adverse properties.

e. The grading plans shall include limited overexcavation and/or use of careful moisture conditioning and subgrade preparation of soils be implemented as a result of the presence of expansive soils at the project site.

GS4 During construction, the project construction manager shall ensure that grading activity in areas underlain by colluvial and slope wash deposits remove such deposits. Cuts into, or fills on top of, such deposits shall not be conducted because of the slope

failure and/or landslide risk. Deposits shall be removed from fill areas and placed back as engineered fill where exposed along proposed cut areas.

GS5 Prior to approval of final project design, the Certified Engineering Geologist shall provide a Supplemental Geotechnical Study which shall map in detail the soils surrounding the creek banks where culverts or bridges are required. The Certified Geotechnical Engineer shall further evaluate the soils and provide additional project design recommendations. The Supplemental Geotechnical Study shall further evaluate the soils surrounding creek banks where culverts or bridges may be required. The Supplemental Geotechnical Study must be signed by a California-registered professional engineer. The Supplemental Geotechnical Study shall provide further information regarding soil stability and subsurface recommendations, as recommended in the *Engineering Geologic and Geotechnical Feasibility Report: Four Proposed James Donlon Boulevard Extension Alternatives* (March 2012) and *Supplemental Engineering Geologic and Geotechnical Report James Donlon Boulevard Alignment Extension Middle Alignment (C2-Low) Alternative* (September 2012).

The project proponent shall determine the final bridge and culvert design based on the results of The Supplemental Geotechnical Study and implement recommended measures to minimize geologic hazards. The City of Pittsburg Development Services Department shall evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been minimized and avoided.

GS6 The construction manager shall ensure the following actions are carried out during all construction activities in order to limit settlement of fill. All soils with the potential for settlement shall be removed or surcharged prior to construction. The amount of material that will need to be overexcavated will vary by the soil type. Soils within and adjacent to creek beds would have the greatest potential for settlement. Upon completion of grading, and prior to the commencement of construction, the Certified Engineering Geologist shall inspect the soils within the alignment right-of-way and verify the potential for settlement has been adequately mitigated to prevent potentially significant impacts associated with soil settlement.

Level of Significance After Mitigation: Less Than Significant Impact.

Expansive Soil Impacts

- ***PARTS OF THE PROPOSED PROJECT WOULD BE LOCATED ON EXPANSIVE SOIL, CREATING SUBSTANTIAL RISKS TO LIFE OR PROPERTY.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: The surficial soils of the project site predominantly consist of clay and exhibit moderate to severe plasticity and expansion potential. These soils tend to shrink and swell with fluctuations in moisture content. Subgrade soils consist of potentially expansive clay and could cause differential movement of pavement, flatwork and shallow foundations if not mitigated in advance. In addition, the soil types are sensitive to changes in moisture content that could result in "workability" problems, increased difficulty during excavation, placement and compaction of fill in accordance with the proposed project requirements. The grading activities should be conducted during drier weather periods

when the surficial clay soils are sufficiently dry and firm. Implementation of Mitigation Measures GS7 would reduce potentially significant impacts associated with expansive soil to less than significant levels.

Mitigation Measures: Implement Mitigation Measures GS3 through GS6.

GS7 Due to the presence of expansive soils within the project area, the construction manager shall ensure that limited overexcavation and/or use of careful moisture conditioning and subgrade preparation of soils, as identified in the grading plans, is implemented during construction activities. As feasible, earthwork that involves the use of expansive soils shall occur during dry weather conditions.

Level of Significance After Mitigation: Less Than Significant Impact.

4.9 HAZARDS AND HAZARDOUS MATERIALS

4.9.1 ENVIRONMENTAL SETTING

Hazardous materials are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed of, or otherwise managed. Hazardous materials are grouped into four categories, based on their properties: toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), and reactive (causes explosions or generates toxic gases). Hazardous materials are commonly used in commercial, agricultural, and industrial applications, as well as in residential areas to a limited extent. A hazardous waste is any hazardous material that is discarded, abandoned, disposed, or is to be recycled. The same criteria that render a material hazardous also make a waste hazardous.

EXISTING CONDITIONS

The project area has historically been used for horse and cattle grazing and is currently undeveloped open space. North of the proposed roadway alignment are structures of the Thomas Ranch (e.g., barn and corrals) and residential development. South of the proposed roadway alignment is agricultural land and the Black Diamond Mines Regional Preserve. East of the proposed project is agricultural land, approved residential development, including Sky Ranch II Subdivision Project, existing residential development, and the closed GBF/Pittsburg Landfill. West of the proposed project is agricultural land and approved residential development, including the proposed Montreux Subdivision Project.

Wildfires

Vegetation within the project area is primarily composed of non-native grassland and small areas of oak savanna and riparian vegetation. Specifically, the project site contains nine biotic habitat/land use types, which include annual grassland, rock outcrop, oak savanna, urban, intermittent stream, ephemeral stream, ruderal, oak woodland, and native grassland. For further details regarding habitat types refer to Section 4.6, *Biological Resources*.

The behavior and characteristics of wildfires are dependent on a number of biophysical and anthropogenic (human-caused) factors. The biophysical variables are fuels (including composition, cover, and moisture content), weather conditions (particularly wind velocity and humidity), topography (slope and aspect), and ignitions (e.g., lightning). The anthropogenic variables are ignitions (e.g., arson, smoking, power lines) and management (wildfire prevention and suppression efforts).

Vegetation with low moisture content is more susceptible to ignitions and burns more readily than vegetation with higher moisture content. Grasses tend to ignite more easily, burn faster, and burn for a shorter duration than woody vegetation such as shrubs and trees. The presence of invasive annual grasses, however, can provide fuel connectivity in patchy desert shrublands that would otherwise provide inconsistent fuel for a wildland fire. Continuity of fuels helps sustain wildland fires. High winds provide oxygen to wildfires and can also blow glowing embers of vegetation far ahead of the front of a fire, allowing fires to jump fuel breaks in some cases. Conditions of low relative humidity will dry out fuels, increasing the likelihood of ignition. Finally, any steep slopes or slopes with exposure to wind will carry fires rapidly uphill. Fires that are extinguished in mountainous areas are often contained along ridgelines. According to the Contra Costa County General Plan, the project site is within two fire hazard areas, the "Local Responsibility Area" and the "Moderate Fire Hazard State Responsibility Area."

Fire Hazard Severity Zones (FHSZs) are areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors that have been mapped by the California Department of Forestry and Fire Protection (CAL FIRE) under the direction of (Public Resources Code (PRC) 4201-4204 and Government

Code 51175-89. FHSZs are ranked from moderate to very high and are categorized fire protection as within a Federal Responsibility Area (FRA) under the jurisdiction of a Federal agency, within a State Responsibility Area (SRA) under the jurisdiction of CAL FIRE, or within a Local Responsibility Area (LRA) under the jurisdiction of a local agency. The project site is located in an area with a "High" fire threat rating. The entire project site is within an SRA. CAL FIRE implements wildfire planning and protection for the SRA (CAL FIRE 2007).

Transmission Lines

There are several Pacific Gas and Electric (PG&E) transmission lines that traverse the project area. It would be necessary to relocate or raise three transmission towers in order to implement the proposed project. In addition, the project would require a source of electricity for proposed streetlights. Electricity would be provided by extending PG&E service to the proposed roadway.

Kinder Morgan has a ten-inch, high pressure, natural gas pipeline that traverses the project area. It would be necessary to lower this ten-inch natural gas pipeline in certain locations within the project area, in order to implement the proposed project.

Hazardous Materials

The closed GBF/Pittsburg Landfill is located 0.5 mile east of the proposed project on the northeast corner of James Donlon Boulevard and Sommersville Road. It consisted of a total of 88 acres and was closed in January 1992. The Pittsburg Landfill operated as a 25-acre municipal landfill beginning in 1946, while the GBF Landfill operated as a 63-acre Class I municipal landfill beginning in 1960. In 1974, the GBF Landfill was ordered by the Central Valley Regional Water Quality Control Board (RWQCB) to cease the Class I operations and remove all liquid hazardous wastes. The landfills were consolidated into one 88-acre landfill in 1987 and municipal waste was accepted until the landfill closure in 1992. The site was de-listed on the national priorities list by the U.S. Environmental Protection Agency (EPA) in October 2010. The landfill is separated from the proposed project site by Markley Creek.[1,2,3]

4.9.2 REGULATORY SETTING

FEDERAL

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) was established in 1970 to consolidate in one agency a variety of Federal research, monitoring, standard-setting, and enforcement activities to ensure environmental protection. The USEPA's mission is to protect human health and to safeguard the natural environment - air, water, and land - upon which life depends. The USEPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Where national standards are not met, the USEPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

[1] Environmental Data Resources, Inc. 2012. James Donlon Blvd. Extension Project Report. September 14, 2012.
[2] Department of Toxic Substance Control, EnviroStor. GBF/Pittsburg Dumps (07490038). Available at http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=07490038. Accessed 2 October 2012.
[3] California Department of Recycling and Recovery (CalRecycle). Facility/Site Summary Details: Contra Costa SLF (Pittsburg LF & GBF LF) (07-AA-0003). Available at http://www.calrecycle.ca.gov/SWFacilities/Directory/07-AA-0003/Detail/. Accessed 2 October 2012.

Federal Toxic Substances Control Act/Resource Conservation and Recovery Act (RCRA)/Hazardous and Solid Waste Act (HSWA). The Federal Toxic Substances Control Act (1976) and the RCRA of 1976 established a program administered by the USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the HSWA, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act (CERCLA). CERCLA, commonly known as Superfund, was enacted by Congress on December 11, 1980. This law (U.S. Code Title 42, Chapter 103) provides broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites; provides for liability of persons responsible for releases of hazardous waste at these sites; and, establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enables the revision of the National Contingency Plan (NCP). The NCP (Title 40, Code of Federal Regulation [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

Clean Water Act (CWA)/Spill, Prevention, Control, and Countermeasure (SPCC) Rule. The CWA (33 U.S.C. Section 1251 et seq., formally the Federal Water Pollution Control Act of 1972), was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. As part of the CWA, the USEPA oversees and enforces the Oil Pollution Prevention regulation contained in Title 40 of the CFR, Part 112 (Title 40 CFR, Part 112), which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend, and implement SPCC plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total above ground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "navigable waters" of the U.S.

Other Federal regulations overseen by the USEPA relevant to hazardous materials and environmental contamination include Title 40 CFR Chapter 1, Subchapter D – Water Programs and Subchapter I – Solid Wastes. Title 40 CFR Chapter 1, Subchapter D, Parts 116 and 117 designate hazardous substances under the CWA. Title 40 CFR Part 116 sets forth a determination of the reportable quantity for each substance that is designated as hazardous. Title 40 CFR Part 117 applies to quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the U.S.

Occupational Safety and Health Administration (OSHA)

OSHA's mission is to ensure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. OSHA staff establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in Title 29 CFR Part 1910.

STATE

Public Resources Code (PRC) 4292, Powerline Hazard Reduction

Public Resources Code (PRC) 4292 requires a 10-foot clearance of any tree branches or ground vegetation from around the base of power poles carrying more than 110 kV. The firebreak clearances required by PRC 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of PRC 4296.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

Hazardous Waste Control Act

The Hazardous Waste Control Act (HWCA) created the State hazardous waste management program, which is similar to, but more stringent than, the Federal RCRA program. The HWCA is implemented by regulations contained in Title 26 of the California Code of Regulations (CCR), which describes the following required aspects for the proper management of hazardous waste:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the HWCA and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with the California Department of Toxic Substances and Control (DTSC).

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program)

Senate Bill 1082, introduced by Senator Charles Calderon (D-Whittier) and passed in 1993, created the Unified Program, which requires the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a Certified Unified Program Agency (CUPA). The Program Elements consolidated under the Unified Program are:

- Hazardous Waste Generator and On-site Hazardous Waste Treatment Programs (a.k.a., Tiered Permitting);
- Aboveground Petroleum Storage Tank Spill Prevention Control and Countermeasure Plan (SPCC);

- Hazardous Materials Release Response Plans and Inventory Program (a.k.a. Hazardous Materials Disclosure or "Community-Right-To-Know");
- California Accidental Release Prevention (CalARP) Program;
- Underground Storage Tank (UST) Program; and
- Uniform Fire Code Plans and Inventory Requirements.

The Unified Program is intended to provide relief to businesses complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA.

California Environmental Protection Agency

The CalEPA was created in 1991, which unified California's environmental authority in a single cabinet-level agency and brought the California Air Resources Board (CARB), State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), California Department of Resources Recycling and Recovery (CalRecycle) - formerly the Integrated Waste Management Board (IWMB), DTSC, Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal/EPA "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Their mission is to restore, protect, and enhance the environment, to ensure public health, environmental quality, and economic vitality.

DTSC is a department of CalEPA and is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Department of Toxic Substance Control

DTSC is a department of CalEPA and is the primary agency in California that regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of the Federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Government Code Section 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, Department of Health Services (DHS) lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

California Office of Emergency Services (OES)

In order to protect the public health and safety and the environment, the California Office of Emergency Services (OES) is responsible for establishing and managing statewide standards for business and area plans relating to the handling and release or threatened release of hazardous materials. Basic information on

hazardous materials handled, used, stored, or disposed of (including location, type, quantity, and the health risks) needs to be available to firefighters, public safety officers, and regulatory agencies and needs to be included in business plans in order to prevent or mitigate the damage to the health and safety of persons and the environment from the release or threatened release of these materials into the workplace and environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code Article 1–Hazardous Materials Release Response and Inventory Program (Sections 25500 to 25520) and Article 2–Hazardous Materials Management (Sections 25531 to 25543.3).

CCR Title 19, Public Safety, Division 2, Office of Emergency Services, Chapter 4–Hazardous Material Release Reporting, Inventory, and Response Plans, Article 4 (Minimum Standards for Business Plans) establishes minimum statewide standards for Hazardous Materials Business Plans (HMBPs). These plans shall include the following: (1) a hazardous material inventory in accordance with Sections 2729.2 to 2729.7; (2) emergency response plans and procedures in accordance with Section 2731; and, (3) training program information in accordance with Section 2732. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state. Each business shall prepare a HMBP if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance;
- 55 gallons of a liquid;
- 200 cubic feet of compressed gas;
- A hazardous compressed gas in any amount; or,
- Hazardous waste in any quantity.

California Occupational Safety and Health Administration

California Occupational Safety and Health Administration (CalOSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. CalOSHA standards are generally more stringent than Federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

California Highway Patrol

A valid Hazardous Materials Transportation License, issued by the California Highway Patrol (CHP), is required by the laws and regulations of State of California Vehicle Code Section 3200.5 for transportation of either:

- Hazardous materials shipments for which the display of placards is required by State regulations; or,
- Hazardous materials shipments of more than 500 pounds, which would require placards if shipping greater amounts in the same manner.

Additional requirements on the transportation of explosives, inhalation hazards, and radioactive materials are enforced by the CHP under the authority of the State Vehicle Code. Transportation of explosives generally requires consistency with additional rules and regulations for routing, safe stopping distances, and inspection stops (Title 14, CCR, Chapter 6, Article 1, Sections 1150-1152.10). Inhalation hazards face similar, more restrictive rules and regulations (Title 13, CCR, Chapter 6, Article 2.5, Sections 1157-1157.8). Radioactive materials are restricted to specific safe routes for transportation of such materials.

LOCAL

Local regulatory agencies enforce many federal and state regulatory programs through the CUPA program. In the geographic area of the proposed project, the Contra Costa Health Services Department is the CUPA agency. The Contra Costa Health Services Hazardous Materials Programs are responsible for responding to emergencies and monitoring hazardous materials. This includes the safe and legal handling, storage, and disposal of hazardous waste; administering the California Accidental Release Prevention (CalARP) Program and Industrial Safety Ordinances (ISO); and protecting the public health from exposure to hazardous materials stored in underground storage tanks, including the protection of groundwater from contamination.

City of Pittsburg General Plan

The Health and Safety and Public Facility Elements of the City of Pittsburg General Plan (City General Plan) contain the following relevant goals and policies:

Goal 10-G-9	Minimize the risk to life and property from the generation, storage, and transportation of hazardous materials and waste by complying with all applicable State regulations.
Policy 10-P-31	Cooperate with other public agencies in the formation of a hazardous materials team, consisting of specially-trained personnel from all East County public safety agencies, to address the reduction, safe transport, and clean-up of hazardous materials.
Policy 10-P-34	Identify appropriate regional and local routes for transport of hazardous materials and wastes. Ensure that fire, police, and other emergency personnel are easily accessible for response to spill incidences on such routes.
Goal 11-G-8	Require development in areas of high fire hazard to be designed and constructed to minimize potential losses and maximize the ability of fire personnel to suppress fire incidents.
Policy 11-P-29	Ensure adequate road widths in new development for fire response trucks, per the subdivision regulations.

Contra Costa County General Plan

The Safety Element of the Contra Costa County General Plan (County General Plan) provides several long-term goals and policies regarding hazards and hazardous materials use in relation to development within the County. The following is a summary of goals and policies that are relevant to this proposed project:

Goal 10-I	To provide public protection from hazards associated with the use, transport, treatment and disposal of hazardous substances.
Policy 10-61	Hazardous waste releases from both private companies and from public agencies shall be identified and eliminated.
Policy 10-62	Storage of hazardous materials and wastes shall be strictly regulated.
Policy 10-63	Secondary containment and periodic examination shall be required for all storage of toxic materials.

Policy 10-64 Industrial facilities shall be constructed and operated in accordance with up-to-date safety and environmental protection standards.

Policy 10-65 Industries which store and process hazardous materials shall provide a buffer zone between the installation and the property boundaries sufficient to protect public safety. The adequacy of the buffer zone shall be determined by the County Planning Agency.

Policy 10-67 In order to provide for public safety, urban and suburban development should not take place in areas where they would be subject to safety hazards from oil and gas wells. Development near oil and gas wells should meet recognized safety standards.

Policy 10-68 When an emergency occurs in the transportation of hazardous materials, the County Office of Emergency Services shall be notified as soon as possible.

4.9.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to hazards and hazardous materials if it would result in any of the following.

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment
- 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, result in a safety hazard for people residing or working in the project area
- For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
- 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

AREAS OF NO PROJECT IMPACT

The following impacts either are not applicable to the proposed project or are not reasonably foreseeable:

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

No existing or proposed school is within 0.25 mile of the project site. The nearest schools are located more than 0.5 mile north of the proposed project site. Foothill Elementary School, 1200 Jenson Drive, is located approximately 0.6 mile north of the proposed project. Highlands Elementary School, 4141 Highland Street, is located approximately one mile north of the proposed project. The proposed project is not expected to emit or handle hazardous or acutely hazardous materials. Therefore, there are no impacts to existing or proposed schools as a result of this proposed project.

- 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, result in a safety hazard for people residing or working in the project area

The proposed project is not within an airport land use plan (ALUP) nor is it within two miles of a public airport or public use airport. The Buchanan Field Airport, a public airport located in Concord, is 8.25 miles west of the proposed project. All other airports are more than 15 miles from the proposed project site and include Travis Air Force Base in Fairfield to the north, Rio Vista Municipal Airport to the northeast, Byron Airport near Byron to the southeast, and Livermore Airport to the south.[4]

- For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area

The proposed project is not within the vicinity of a private airstrip. The Q Area Heliport is a private heliport located more than 6.5 miles northwest of the proposed project site. All other private airstrips are located more than 15 miles from the proposed project site and include Meadowlark Field Airport and PG&E Livermore Training Center Heliport in Livermore to the south, and Little Hands Airport in San Ramon to the southwest.[5]

- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

The proposed project would not impair or interfere with an adopted emergency response plan or emergency evacuation plan. The proposed project would provide a connection from Somersville Road to Kirker Pass Road, which would create an alternative to State Route 4 (SR 4) as an east-west route from Concord to Antioch. This would assist emergency preparedness and evacuation capabilities.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Located on a Listed Site Impacts

♦ ***BE LOCATED ON A SITE WHICH IS INCLUDED ON A LIST OF HAZARDOUS MATERIALS SITES COMPILED PURSUANT TO GOVERNMENT CODE SECTION 65962.5 AND, AS A RESULT, WOULD CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT.***

Level of Significance Before Mitigation: Potentially Significant Impact.

[4] AirNav. 2012. Airport Information as of September 20, 2012. Available at http://www.airnav.com/airports/get. Accessed 4 October 2012.
[5] AirNav. 2012. Airport Information as of September 20, 2012. Available at http://www.airnav.com/airports/get. Accessed 4 October 2012.

Impact Analysis: An EDR Report was prepared for the proposed project and the EnviroStor maintained by DTSC and Solid Waste Information System (SWIS), maintained by CalRecycle, database searches were conducted on October 2, 2012. The project site is not located on any site listed pursuant to Government Code Section 65962.5. A cell tower was identified as being located to the southwest of the proposed project.

One site, the GBF/Pittsburg Landfill, is located 0.5 mile east of the proposed project and is listed on the CORTESE and CERCLIS lists. The landfill site consists of two landfills; the 25-acre Pittsburg Landfill which began operation in 1946; and the 63-acre GBF Landfill which began operation in 1960. The GBF Landfill was a Class I landfill with ten ponds for evaporation and percolation of hazardous wastes. In 1974, the Central Valley RWQCB ordered the GBF Landfill to cease operating as a Class I landfill and remove all liquid hazardous wastes from the site. The residues and sludges from ten ponds and the buried hazardous wastes still remain within the GBF Landfill boundaries. Volatile organic compounds, industrial solvents, and trace metals have been found in the groundwater. In 1987 the two landfills were combined into one 88-acre landfill and the landfill was closed in 1992. Because of the contaminants, the USEPA placed the site on the National Priority List in February 1992; however, in October 2010, the USEPA delisted the site because of past and ongoing oversight of the DTSC's cleanup work. The GBF/Pittsburg Landfill is separated from the proposed project by Markley Creek, therefore, any groundwater contamination that may have gone beyond the landfill boundaries would have followed the groundwater gradient downstream with Markley Creek.[6,7,8]

Kinder Morgan has a ten-inch, high pressure, natural gas pipeline that traverses the project area. It would be necessary to lower this ten-inch natural gas pipeline in certain locations within the project area, in order to implement the proposed project. In addition, there are several PG&E transmission lines that traverse the project site. Relocating up to six transmission towers, within the existing PG&E easement and near the existing towers, would be required in order to construct the proposed James Donlon Boulevard Extension. The City is in discussions with PG&E regarding the transmission towers. With implementation of mitigation measures, hazards created as a result of utility relocation would be reduced to a less than significant impact.

***Mitigation Measures*:**

HAZ1 If during grading or soil excavation, evidence of petroleum products is discovered and appears to continue below the ground surface, construction activities shall stop immediately and sampling shall be performed to characterize the extent of contamination. If applicable, remediation shall include removal of soil and proper disposal at an approved facility.

HAZ2 If suspect materials or wastes of unknown origin are discovered during construction on the proposed project site, which is thought to include hazardous waste materials the following shall occur:

- All work shall immediately stop in the vicinity of the suspected contaminant;
- Project engineer of the implementing agency shall be notified;
- Area(s) shall be secured as directed by the Project Engineer;

[6] Environmental Data Resources, Inc. 2012. James Donlon Blvd. Extension Project Report. September 14, 2012.
[7] Department of Toxic Substance Control, EnviroStor. GBF/Pittsburg Dumps (07490038). Available at http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=07490038. Accessed 2 October 2012.
[8] California Department of Recycling and Recovery (CalRecycle). Facility/Site Summary Details: Contra Costa SLF (Pittsburg LF & GBF LF) (07-AA-0003). Available at http://www.calrecycle.ca.gov/SWFacilities/Directory/07-AA-0003/Detail/. Accessed 2 October 2012.

Notification shall be made to the appropriated agency's Hazardous Waste/Materials Coordinator.

HAZ3 At least 48 hours prior to commencement of excavation work, the project construction manager shall contact Underground Service Alert (USA) to verify the nature and location of existing underground utilities, and to avoid the unplanned disruption of pipes or service lines during construction activities.

HAZ4 At least two weeks prior to commencement of excavation work, the project construction manager shall contact Kinder Morgan regarding the high pressure pipeline and PG&E regarding the overhead utility lines and shall conduct the following:

a. Perform hand excavation potholing at a minimum of 50-foot intervals, in the presence of a Kinder Morgan representative, to verify the exact alignment of the pipeline.
b. Coordinate with Kinder Morgan to have a representative present when construction activities are conducted within 10 feet of the high pressure pipeline.
c. Provide Kinder Morgan and PG&E with a construction schedule and notify the utility companies of pre-construction conference dates and times.

Level of Significance After Mitigation: Less Than Significant Impact.

Transport Hazardous Materials Impacts

- ***THE PROPOSED PROJECT WOULD NOT CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIALS.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: The City of Pittsburg has designated roadways within the City that are acceptable for transport of hazardous materials, as identified in the City of Pittsburg General Plan, Health and Safety Element. The designated roadways within the City, that are acceptable for transport of hazardous materials are located within the industrial areas north of SR4 and include Loveridge Road, Pittsburg-Antioch Highway, Tenth Street/Willow Pass, and North Parkside Drive.

Construction of the proposed project would require the use of limited amounts of various petrochemicals, including fuels, lubricants, and solvents to operate and maintain equipment. There is a possibility of accidental release of these hazardous substances. The level of risk associated with an accidental release of hazardous substances is not considered significant because the volume of hazardous materials utilized during construction is small and their concentrations are low. The contractor would be required to use standard construction controls and safety procedures, which would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, state, and federal law.

The operation of the proposed James Donlon Boulevard would not introduce new sources of hazardous materials or hazardous waste. The proposed project would not be a designated route for transport of hazardous materials. Vehicular accidents resulting in hazardous materials spills (e.g., diesel and other fuels, or cleaning compounds and other chemical products being delivered to stores) could occur on the proposed roadway. This potential impact is already present on the existing east-west routes used by motorists, and the project would not increase risks beyond existing conditions.

There are several federal, state, and local regulatory agencies that oversee hazardous material transportation and enforce regulations related to incidental transport of hazardous materials throughout the state. Although the proposed project would not be a designated route for hazardous material transport, if accidental release of hazardous materials occurs during project operation, state and local governmental units would respond to such spills and initiate cleanup measures. In addition, the proposed project would divert traffic from Buchanan Road, which adjoins a large number of residences, to the more sparsely populated route, thereby reducing the number of people potentially exposed to such accidental releases. Based on the above factors, impacts would be less than significant.

***Mitigation Measures*:** No mitigation is required.

Level of Significance: Less Than Significant Impact.

Release of Hazardous Materials Impacts

- ***THE PROPOSED PROJECT COULD 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.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: No hazardous materials are known to have been released along the proposed roadway alignment. Horse and cattle grazing operations have taken place in the vicinity. Although not reasonably foreseeable, to reduce potential impacts from previously undiscovered contamination that might be encountered during construction of the extension, Mitigation Measure HAZ1 would be implemented to reduce impacts to a less than significant level.

Road construction would involve the use of such commonly-encountered hazardous materials as fuels, lubricants, solvents, and paints. During the short-term period of project construction, there is a possibility of accidental release of such substances, such as spilling petroleum-based fuels used for construction equipment, as discussed above. Compliance with local, state and federal regulations regarding the handling, use, and storage of these substances is part of the project, and contractors would be required to use established construction controls and safety procedures which would avoid and minimize the potential for accidental releases. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, state, and federal law. Therefore, impacts in this regard are considered less than significant.

Mitigation Measures: Implement Mitigation Measure HAZ1.

Level of Significance After Mitigation: Less Than Significant Impact.

- ***THE PROPOSED PROJECT COULD 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.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: The proposed project is located within two fire hazard areas, the "Local Responsibility Area" and the "Moderate Fire Hazard State Responsibility Area," as designated by the City General Plan. In addition, the project site is located in an area with a "High" fire threat rating. The entire project site is within an SRA. CAL FIRE implements wildfire planning and protection for the SRA (CAL FIRE 2007). In addition, portions of the proposed project construction area are located immediately south of existing residences.

Construction activities involving vehicles, heavy machinery, and personnel smoking at the proposed project site could result in the ignition of a wildfire. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire. Heated mufflers, explosives used during site preparation, equipment or tools that produce spark or flame, and improper disposal of cigarettes could potentially ignite surrounding vegetation.

Upon completion of construction, the roadway alignment would increase potential wildfire risks from such actions as cigarettes being thrown from vehicles or vehicles stopped on the shoulder, near unpaved areas. However, this risk would be less than significant for the following reasons:

- The road edges would be mowed
- The new road would provide access to fire suppression agencies
- While roadside fires are not uncommon, it is quite rare for roadside ignitions to become major wildfires due to the ability of fire suppression agencies to quickly access the fire

The California PRC contains provisions regulating the use of internal combustion engines. Application of these provisions to the proposed project, as required under Mitigation Measures HAZ5 through HAZ8, would reduce wildfire risks that could result from construction operations to less than significant levels.

Mitigation Measures:

HAZ5 Prior to issuance of any building or grading permits or other construction related activity, the City of Pittsburg Development Services Department shall verify that that the construction manager first clears away all flammable material within ten feet of construction operations. During any time of the year when burning permits are required no person shall use or operate any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices from which a spark, fire, or flame may originate, on property located on or near any forest-covered land, brush-covered land, or grass-covered land (PRC Section 4427).

HAZ6 Prior to issuance of any building or grading permits and/or commencement of other construction related activity, the City of Pittsburg Development Services Department shall review and approve plans and specifications for the project. The City of Pittsburg Development Services Department shall verify that the project sponsor has incorporated provisions for on-site firefighting purposes pursuant to Public Resources Code (PRC) Section 4428. Per PRC Section 4428, when construction activities occur between April 1 and December 1, appropriate firefighting tools must be provided in a location within the construction area at a point accessible in the event of a fire. A firefighting tool box(es) shall be accessible within the area(s) of construction and shall contain: one backpack pump-type fire extinguisher filled with water, two axes, two McLeod fire tools, and a sufficient number of shovels so that each construction crew member can be equipped to fight fire. In addition, all vehicles will be equipped with a minimum of one shovel.

HAZ7 Prior to issuance of any building or grading permits and/or commencement of other construction related activity, the City of Pittsburg Development Services Department shall perform an initial inspection, as well as subsequent inspections of project construction equipment. The inspections shall verify that spark arresters are installed and maintained on all equipment, or that the engine is constructed, equipped and maintained for the prevention of fire (PRC Section 4442).

HAZ8 Prior to issuance of any building or grading permits and/or commencement of other construction related activity, the City of Pittsburg Development Services Department shall verify the construction contractor has provided adequate fire-fighting capability at the site. Specifically, the project sponsor shall provide and maintain tools for firefighting purposes including one serviceable round point shovel, with an overall length of not less than 46 inches, or one serviceable fire extinguisher (PRC Section 4431).

HAZ9 Prior to issuance of any building or grading permits, the project sponsor shall submit a safety plan to the City of Pittsburg Development Services Department for review and approval. The safety plan shall incorporate measures to reduce risk of fire. The plan shall direct construction crews to park vehicles away from flammable material, such as dry grass or brush. Additionally, at the end of each workday, heavy equipment would be parked over non-flammable surfaces as well. The plan shall also stipulate a means of communication (e.g., cell phone, if coverage is adequate) to contact fire suppression assistance. Finally, the plan shall prohibit smoking by all construction personnel while working on-site.

Level of Significance After Mitigation: Less Than Significant Impact.

4.10 HYDROLOGY AND WATER QUALITY

This section is based on information contained in the City of Pittsburg General Plan (City General Plan), the preliminary design plans and geotechnical and biological studies prepared for the proposed project. These studies include: *Buchanan Bypass Project Study Report (now known as James Donlon Boulevard)* prepared by RBF Consulting (RBF) in 2003 and *James Donlon Boulevard Extension Technical Memorandum Report* prepared by RBF Consulting, A Baker Company (RBF) in December 2012 (see Appendix G); *Geological and Geotechnical Constraints Evaluation Report Proposed Buchanan Road Bypass Pittsburg, California,* September 2002; *Geological and Geotechnical Investigation Report: Proposed Buchannan Road Bypass Pittsburg, California,* January 2008, *Engineering Geologic and Geotechnical Feasibility Report: Four Proposed James Donlon Boulevard Extension Alternatives*, March 2012, and *Supplemental Engineering Geologic and Geotechnical Report James Donlon Boulevard Alignment Extension Middle Alignment (C2-Low) Alternative*, September 2012 (refer to Appendix E, *Geological and Geotechnical Resources*); and *James Donlon Boulevard Extension Planning Survey Report*, June 2008, and *East Contra Costa County HCP/NCCP Planning Survey Report for James Donlon Boulevard Extension*, November 2012 (refer to Appendix C, *Biological Resources*).

4.10.1 ENVIRONMENTAL SETTING

CLIMATE AND TOPOGRAPHY

The project area is located in unincorporated Contra Costa County, near the western limits of the City of Antioch and the southern limits of the City of Pittsburg. The region's climate characteristics reflect the general Mediterranean climate of central coastal regions of California. This climate regime is characterized by cool, wet winters and hot, dry summers. The rainy season generally occurs from the beginning of October through the end of April. Mean annual precipitation is approximately 15 to 17.5 inches per year in the project area. Actual rainfall totals vary strongly as a result of regional and global weather patterns such as periods of drought and the El Nino Southern Oscillation.

The project site is situated along the northern foothills of Mount Diablo generally along the northern end of elevated ridgelines bordering relatively flat alluvial plains underlying the City of Pittsburg. The project area has a topographic relief measuring approximately 387 feet with ground surface elevations varying from approximately 177 feet near the northeastern portion of the project area to approximately 564 feet along the southernmost section of the project area. Vegetation within the project area is composed of primarily annual grassland, rock outcrop, oak savanna, and intermittent and ephemeral streams, and ruderal vegetation. The project area is primarily undeveloped grazing land.

GEOLOGY AND SOILS

The majority of the soils found in the area consist of clay with medium to high expansive potential. These soils are potentially subject to moderate to high rates of erosion. On-site soils can be classified into three series or groups: the Altamont Group, Lodo Series, and Rincon Series (Kleinfelder, 2012; HT Harvey & Associates, 2012).

The northern portion of the project area consists of the Altamont Group, which is comprised of materials that have a high shrink and swell potential and are corrosive. This soil is characterized by high expansion potential and slow permeability. The outcrop and peak areas of the project area are underlain by soils of the Lodo Series. These materials are described as having a very thin veneer of soil covering rocky terrain. Their expansion and corrosion potentials are more moderate than the Altamont Group soils. Along the relatively flat areas surrounding the channels of Kirker Creek, the soils belong to the Rincon Series. These soils tend to be similar in their engineering characteristics to the Altamont Group Soils (Kleinfelder, 2012).

SITE HYDROLOGY

The project area is primarily undeveloped land used for cattle grazing. A total of six ephemeral and intermittent streams traverse the project area, which flow in a south to north direction, eventually flowing into Kirker Creek further downstream. The project area is located in the Kirker Creek watershed, which covers an area of approximately 11,300 acres in Contra Costa County; refer to Figure 4.10-1, *Watershed Boundaries*. The watershed encompasses much of the City of Pittsburg, a small part of the City of Antioch, and parts of unincorporated Contra Costa County, including the Black Diamond Mines Regional Preserve and the Dow Wetlands Preserve. Kirker Creek originates in the foothills of Mount Diablo and flows into the Sacramento-San Joaquin Delta and Suisun Bay at New York Slough, near Brown Island (Contra Costa Resource Conservation District [CCRCD], 2012).

GROUNDWATER

The project area is located in the Pittsburg Plain Groundwater Basin (Groundwater Basin). Located about 40 miles northeast of San Francisco, the Basin is surrounded by Suisun Bay to the north, the Tracy Groundwater Basin to the east and the Clayton Groundwater Basin to the west. The Groundwater Basin lies within the two major drainage basins of Kirker Creek and Willow Creek.

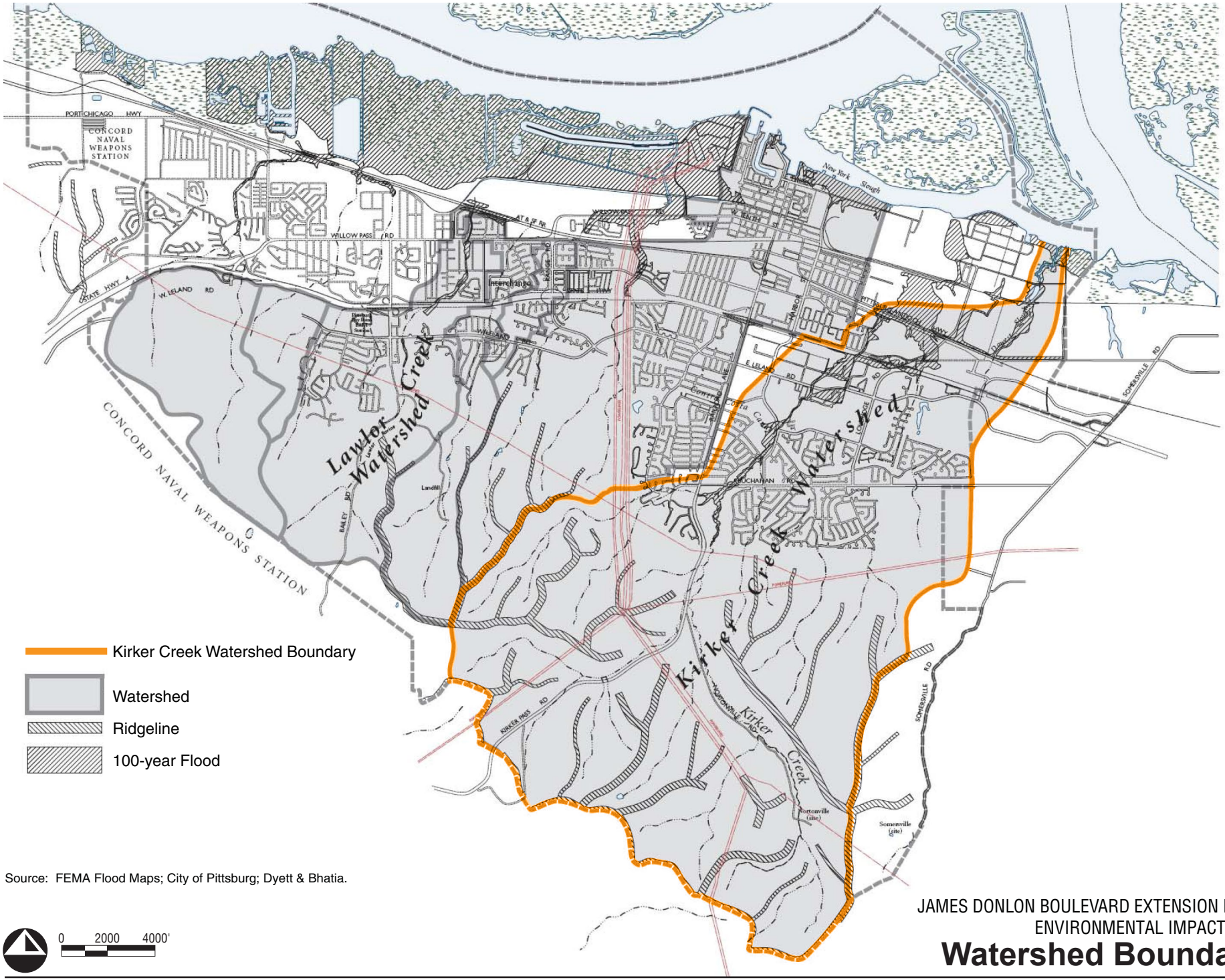
No groundwater was encountered during exploratory soil or rock core borings within the project area nor were any springs or seeps indicative of shallow groundwater observed during Kleinfelder's evaluation. Groundwater may be encountered along the drainage courses. Groundwater levels are expected to fluctuate depending on weather conditions and seasonal rainfall (Kleinfelder, 2012).

The Groundwater Basin has limited water quality information. Based on the Department of Water Resources (DWR) Bulletin 118, *Groundwater Basins of California: San Francisco Bay Hydrologic Region, Pittsburg Plain Groundwater Basin*, updated February 27, 2004, historic groundwater total dissolved solids (TDS) values ranging from 450 milligrams per liter (mg/l) to 5737 mg/l, with the average TDS for five wells being 1,821 milligrams per liter (mg/l). These levels are considered to be within the normal range.

FLOODING

The Federal Emergency Management Agency (FEMA) has classified Flood Zones for the project site. FEMA's Flood Insurance Rate Maps (FIRMs), Panel Numbers 06013C0307 and 06013C0326, indicate that the project site is designated as Flood Zone X.[1] According to FEMA, Flood Zone X is defined as areas determined to be outside the 0.2 percent annual chance floodplain (500-year floodplain). Thus, the project area is not within a FEMA-delineated 100-year flood hazard zone.

[1] Federal Emergency Management Agency. 2009. Flood Insurance Rate Map: Panels 06013C0307 and 06013C0326. Available at: https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1. Accessed 5 October 2012.



Source: FEMA Flood Maps; City of Pittsburg; Dyett & Bhatia.

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Watershed Boundaries

12/5/12 JN 130944-18838 MAS

Figure 4.10-1

4.10.2 REGULATORY SETTING

FEDERAL

Clean Water Act

In 1972, the Federal Water Pollution Control Act (later referred to as the Clean Water Act [CWA]) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and has given the United States Environmental Protection Agency (USEPA) the authority to implement pollution control programs. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). The project is within the jurisdiction of the San Francisco Bay RWQCB.

In addition, the CWA requires states to adopt water quality standards for receiving water bodies and to have those standards approved by the EPA. Water quality standards consist of designating beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply and fishing), along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of constituents, such as lead, suspended sediment, and fecal coliform bacteria, or narrative statements which represent the quality of water that supports a particular use. Given that California had not established a complete list of acceptable water quality criteria, EPA established numeric water quality criteria for certain toxic constituents in receiving waters with human health or aquatic life designated uses in the form of the California Toxics Rule.

Section 401, Water Quality Certification. Section 401 of the CWA requires that, prior to issuance of any federal permit or license, any activity, including river or stream crossing during road, pipeline, or transmission line construction, which may result in discharges into waters of the U.S., must be certified by the state, as administered by the RWQCB. This certification ensures that the proposed activity does not violate state and/or federal water quality standards.

Section 402, National Pollutant Discharge Elimination System (NPDES). Section 402 of the Clean Water Act authorizes the State Water Resources Control Board (SWRCB) to issue a NPDES General Construction Storm Water Permit (2009-0009-DWQ as amended by 2010-0014-DWQ), referred to as the "General Construction Permit." Construction activities can comply with and be covered under the General Construction Permit provided that they:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters.
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.
- Perform inspections of all BMPs.

For the project, NPDES regulations are administered by the San Francisco Bay RWQCB. Projects that disturb one or more acres, including the project, are required to obtain NPDES coverage under the Construction General Permits.

Section 404, Discharge of Dredged or Fill Materials. Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material in waters of the U.S., including wetlands. For purposes of section 404 of the CWA, the limits of non-tidal waters extend to the Ordinary High Water (OHW) line, defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics, such as natural line impressed on the bank, changes in the character of the soil, and presence of debris. When an application for a Section 404 permit is made the applicant must show it has:

- Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable;
- Minimized unavoidable impacts on waters of the U.S. and wetlands; and
- Provided mitigation for unavoidable impacts.

Section 404 of the CWA requires a permit for construction activities involving placement of any kind of fill material into waters of the U.S. or wetlands. A Water Quality Certification pursuant to Section 401 of the CWA is required for Section 404 permit actions. If applicable, construction would also require a request for Water Quality Certification (or waiver thereof) from the San Francisco Bay RWQCB.

Section 303, Water Quality Standards and Implementation Plans. Section 303(d) of the CWA (CWA, 33 USC 1250, et seq., at 1313(d)) requires states to identify "impaired" water bodies as those which do not meet water quality standards. States are required to compile this information in a list and submit the list to the USEPA for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, states are required to prioritize waters and watersheds for future development of Total Maximum Daily loads (TMDL) requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop TMDL requirements.

National Flood Insurance Program

The National Flood Insurance Program (NFIP), implemented by the Congress of the United States in 1968, enables participating communities to purchase flood insurance. Flood insurance rates are set according to flood-prone status of property as indicated by FIRM developed by FEMA. FIRMs identify the estimated limits of the 100 year floodplain for mapped watercourses, among other flood hazards. As a condition of participation in the NFIP, communities must adopt regulations for floodplain development intended to reduce flood damage for new development through such measures as flood proofing, elevation on fill, or floodplain avoidance. Contra Costa County adopted a Floodplain Management Ordinance in compliance with NFIP, which requires specific building improvements for structures located within a special hazard flood area.

STATE

California Porter-Cologne Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and each of the nine Regional Water Quality Control Boards (RWQCBs) power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the CWA. For the area in which the project would be sited, the applicable RWQCB is the San Francisco Bay Regional Water Quality Control Board (RWQCB). Under the Porter-Cologne Act, the SWRCB and RWQCBs have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The regional plans must conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its state water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste. The City of Pittsburg has adopted a City Resolution of Intention to prepare a groundwater management plan.

Streambed Alteration Agreement (California Fish and Game Code)

Section 1602 of the California Fish and Game Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the California Department of Fish and Wildlife (CDFW) in which there is, at any time, any existing fish or wildlife resources, or benefit for the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, and requires any person, state or local governmental agency, or public utility to notify the CDFW before beginning any activity that will:

- Substantially divert or obstruct the natural flow of any river, stream or lake;
- Substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

During final engineering and design of a project, if it is determined that any project-related actions would have the potential to necessitate a Lake or Streambed Alteration Agreement, then such an agreement would be prepared and implemented prior to construction of the project, thus maintaining compliance with Section 1602 of the California Fish and Game Code. A Lake or Streambed Alteration Agreement is required if the CDFW determines the activity could substantially adversely affect an existing fish and wildlife resource. The agreement includes measures to protect fish and wildlife resources while conducting the proposed project. The CDFW must comply with CEQA before it may issue a final Lake or Streambed Alteration Agreement; therefore, the CDFW must wait for the lead agency to fully comply with CEQA before it may sign the draft Lake or Streambed Alteration Agreement, thereby making it final.

California Water Code Section 13260

Under Porter-Cologne, California Water Code Section 13260 requires that any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system, must submit a report of waste discharge to the applicable RWQCB. Any actions related to the project that would be applicable to California Water Code Section 13260 would be reported to the San Francisco Bay RWQCB.

National Pollution Discharge Elimination System – General Construction Activities Stormwater Permit Requirements

The NPDES was established per 1972 amendments to the Federal Water Pollution Control Act, in order to control discharges of pollutants from point sources (Section 402). As described above, under "Federal," 1987 amendments to the Clean Water Act created a new section of the act devoted to storm water permitting (Section 402[p]), with individual states designated for administration and enforcement of the provisions of the Clean Water Act and the NPDES permit program. The SWRCB issues both General Construction Permits and individual permits under this program.

The NPDES General Construction Stormwater Permit, Water Quality Order 2009-0009-DWQ, as amended by 2010-0014-DWQ, contains requirements for post-construction stormwater management. The proposed project must include the implementation of long-term BMPs to address post-construction stormwater, particularly for impervious surface runoff, access road alignment, and proposed drainage crossings.

Projects disturbing more than one acre of land during construction are required to file a Notice of Intent (NOI) with the SWRCB to be covered under the State NPDES General Construction Permit for discharges of storm water associated with construction activity. The project proponent must control measures that are consistent with the State General Permit. A SWPPP must be developed and implemented for each site covered by the General Permit. A SWPPP describes BMPs the discharger will use to protect storm water runoff and reduce potential impacts to surface water quality through the construction period. The SWPPP must contain the following: a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment (SWRCB 2009). The area that would be disturbed under the proposed project exceeds one acre and therefore, the proposed project would be required to comply with the General Permit.

The RWQCBs for the San Francisco Bay Region and the Central Valley Region revised Provision C.3 in the NPDES general permit (NPDES No. CAS612008, Order No. R2-2009-0074 and CAS0883313, Order No. R5-2010-0102) governing discharges from the municipal storm drain systems of Contra Costa County and cities within the county. Under Provision C.3, project site designs must minimize the area of new roofs and paving. Where feasible, pervious surfaces should be used instead of paving so that runoff can percolate to the underlying soil. Runoff from impervious areas must be captured and treated. The Provision C.3 requirements apply to projects resulting in the creation or replacement of 10,000 square feet or more of impervious surface.

LOCAL

Contra Costa Clean Water Program

To comply with the Clean Water Act, Contra Costa County, 19 of its incorporated cities, and the Contra Costa County Flood Control and Water Conservation District together formed the Contra Costa Clean Water Program. The Contra Costa Clean Water Program initially obtained a Joint Municipal NPDES Permit from the SFBRWQCB in September 1993 and January 1994, respectively. Contra Costa County is covered under both the SFBRWQCB NPDES Permit Number CAS612008 (Order R2-2009-0074), issued October 14, 2009, and the Central Valley RWQCB NPDES Permit No. CAS0883313 (Order R5-2010-0102), issued September 23, 2010. The permits include a comprehensive plan to reduce the discharge of pollutants to the "maximum extent practicable."

The Contra Costa Clean Water Program provides guidance and training on the following:

- Adopting legal ordinances
- Conducting public education programs such as stenciling informational signs like "No Dumping Drains to Bay" on storm drain covers
- Instituting or enhancing programs such as street sweeping, storm drain maintenance
- Performing erosion control practices
- Identifying illicit pollutant discharges to the storm drain system, and requiring new development and industrial discharge controls. Typical stormwater protection measures are described below

- Implementation of stormwater provision C.3 requirements for new development and redevelopment of projects for stormwater treatment and flow control.

City of Pittsburg General Plan

The City General Plan contains several goals and policies regarding hydrology and water quality that are applicable to the proposed project:

Goal 9-G-4 Minimize the runoff and erosion caused by earth movement by requiring development to use best management practices (BMPs).

Goal 9-G-5 Preserve and enhance Pittsburg's creeks for their value in providing visual amenity, drainage capacity, and habitat value.

Goal 9-G-6 Preserve and protect the Contra Costa Canal from storm drainage and runoff contaminating the City's municipal water supply.

Policy 9-P-16 Establish development standards for new construction adjacent to riparian zones to reduce sedimentation and flooding. Standards should include:

- Requirements that low berms or other temporary structures such as protection fences be built between a construction site and riparian corridor to preclude sheet-flooding stormwater from entering the corridors during the construction period.
- Requirements for installation of storm sewers before construction occurs to collect stormwater runoff during construction

Policy 9-P-17 To prevent flood hazards in the Kirker Creek watershed, ensure that new development minimizes paved areas, retaining large blocks of undisturbed, naturally vegetated habitat to allow for water infiltration.

Additional flood control mitigation may include intermixing areas of pavement with the naturally vegetated infiltration sites to reduce the concentration of stormwater runoff from pavement and structures.

Policy 9-P-20 As a part of project review and approval, establish maintenance districts to ensure uniform maintenance for selected channels and creeks.

Policy 9-P-21 As a part of project review and CEQA documentation, require an assessment of downstream drainage (creeks and channels) and City storm-water facilities impacted by potential project runoff.

Contra Costa County General Plan

The following goals and policies are found in the Contra Costa County General Plan and are applicable to the proposed project:

Goal 8-U To maintain the ecology and hydrology of creeks and streams and provide an amenity to the public, while at the same time preventing flooding, erosion and danger to life and property.

Goal 8-W To provide alternative drainage system improvements which rely on increased retention capacity to lessen or eliminate the need for structural modifications to watercourses, whenever economically possible.

Policy 8-74 Preserve watersheds and groundwater recharge in areas by avoiding the placement of potential pollution sources in areas with high percolation rates.

Policy 8-75 Preserve and enhance the quality of surface and groundwater resources.

Policy 8-77 Provide development standards in recharge areas to maintain and protect the quality of groundwater supplies.

Policy 8-78 Where feasible, existing natural waterways shall be protected and preserved in their natural state, and channels which already are modified shall be restored. A natural waterway is defined as a waterway which can support its own environment of vegetation, fowl, fish and reptiles, and which appears natural.

Policy 8-79 Creeks and streams determined to be important and irreplaceable natural resources shall be retained in their natural state whenever possible to maintain water quality, wildlife diversity, aesthetic values, and recreation opportunities.

Policy 8-80 Wherever possible, remaining natural watercourses and their riparian zones shall be restored to improve their function as habitats.

4.10.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant hydrology and water quality impact if it 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 (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)
- 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 which would result in flooding on- or off-site
- Create or contribute runoff water that 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 flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map
- 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
- Inundation by seiche, tsunami, or mudflow

AREAS OF NO PROJECT IMPACT

The following impacts either are not applicable to the project or are not reasonably foreseeable:

- Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map

The proposed project is not within a 100-year floodplain. The proposed project does not propose development of any housing. No impacts would occur.

- 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

In addition; although the Suisun Bay and marsh area is located to the north of the proposed project, the water flows toward Suisun Bay. The proposed project is not located within an area that is subject to flooding due to failure of a levee or dam; therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death due to flooding as a result of the failure of a levee or dam. No impacts would occur.

- Inundation by seiche, tsunami, or mudflow

The proposed project is located approximately three miles south of the Sacramento-San Joaquin Delta and Suisun Bay at New York Slough. Due to the proposed project's location, south of the City of Pittsburg, and the existing topography, the proposed project would not have the potential to be inundated by seiche or tsunami. In addition, the proposed project site would not be susceptible to mudflows given the high clay content of the soils and the depth to groundwater in the area. Therefore, no impact would occur.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Water Quality/ Waste Discharge Impacts

◆ ***THE PROPOSED PROJECT COULD POTENTIALLY VIOLATE WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Development of the proposed project would result in a significant impact to hydrology and water quality if associated construction or operation activities would result in the violation of any water quality or waste discharge standards. Such violations could occur through the creation of erosion, sedimentation, and/or polluted runoff, through the accidental release of potentially hazardous materials required during construction or operational activities. Potential impacts associated with water quality or waste discharge violations are described below.

Construction

Earthwork and grading activities for the proposed project would be extensive given the area's topography. Grading activities may require the export of native soils and the import of engineered fill material. Approximately 2,165,000 cubic yards of grading would be required for the roadway. All grading and excavation activities would have the potential to cause water quality degradation resulting from soil disturbance. In addition, construction activities have the potential to cause soil instability resulting in erosion and sedimentation. Exposed and/or eroding soil could be transported in storm water flow or

runoff, ending in the drainages or Kirker Creek within the project site. The proposed project would result in the placement of rip rap in some drainage areas to protect the slopes from erosion.

During construction, any activity which results in the accidental release of hazardous or potentially hazardous materials could result in water quality degradation. Materials that could contribute to this impact include but are not limited to the following: lead-based paint flakes, diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, asphalt concrete, and other fluids utilized by construction vehicles and equipment. Motorized equipment could leak hazardous materials such as motor oil, transmission fluid, or antifreeze due to inadequate or improper maintenance, unnoticed or unrepaired damage, improper refueling, or operator error.

The project proponent would implement measures to minimize and contain erosion and sedimentation in accordance with the Pittsburg Municipal Code, Section 15.88, *Grading, Erosion and Sediment Control*, and Contra Costa County Ordinance Code, Title 7, Division 716, *Grading*. Because the proposed project would disturb more than one acre of land, the project proponent would be required to obtain and comply with the NPDES Construction General Permit. As required by this permit, the project proponent would develop a SWPPP prior to permit approval. The SWPPP would describe erosion control and stormwater treatment BMPs to be implemented during and following construction and provide a schedule for monitoring performance. These BMPs would serve to control point and non-point source pollutants in stormwater. The SWPPP would include BMPs for preventing the discharge of other non-point source pollutants besides sediment (such as paint, concrete, etc.) to downstream waters. In addition, implementation of Mitigation Measures WQ1 and WQ2 would reduce construction-related water quality impacts to less than significant.

Project Operation

After construction, non-point source pollutants would be the primary contributors to potential water quality degradation. Non-point source pollutants could be washed by rainwater from roadway areas into natural ephemeral drainages that connect to the City's storm water system, into Kirker Creek, and eventually emptying into the Sacramento-San Joaquin Delta/Suisun Bay and ultimately the San Francisco Bay. Potential non-point source pollutants include oil, grease and heavy metals from automobiles and petroleum hydrocarbons from fuels.

The proposed project would include a stormwater drainage system which would follow Caltrans Design Manual procedures and be configured to accommodate a 25-year design storm event. In accordance with the Contra Costa Clean Water Program, bio-retention facilities would be designed and implemented to address stormwater quality from the additional impervious surface area that would result from the proposed project. In addition, impacts would be further reduced with implementation of a Stormwater Control Plan, which would incorporate all aspects of the RWQCB's Provision C.3. The Stormwater Control Plan is based on a hierarchical approach (Levels I, II and III) as described below:

- Level I of the Stormwater Control Plan includes the incorporation of appropriate design elements that enhance the project's potential to limit water quality impacts and limit the amount of directly connected impervious areas and maximize pervious area.
- Level II of the Stormwater Control Plan focuses on source control. Source control capitalizes on the fact that it is generally more effective, in terms of both impact and cost, to prevent or limit the release of pollutants than it is to remove them from the environment.
- Level III of the Stormwater Control Plan incorporates treatment and flow control features that are designed to reduce constituents of concern once they have been introduced into stormwater runoff. Treatment control is generally considered necessary as a final element of water quality protection even when design elements and source control BMPs are maximized. The RWQCB requires 80

percent of average annual runoff be treated prior to discharge in receiving waters. Runoff must not exceed pre-project peak flows and durations.

A Stormwater Control Plan that would recommend a collection, treatment and disposal system for the proposed project has not yet been developed. Therefore, a mitigation measure would be required to ensure the preparation of a Stormwater Control Plan, and that the proposed project's treatment and disposal system meets applicable Provision C.3 requirements. Implementation of Mitigation Measure WQ3 would reduce potential impacts to less than significant.

Mitigation Measures:

WQ1 Prior to issuance of any building or grading permit, the project proponent shall comply with NPDES General Construction Activities Stormwater Permit Requirements established by the CWA including preparation of a SWPPP. The SWPPP shall identify specific types and sources of stormwater pollutants, determine the location and nature of potential impacts, and specify appropriate control measures to eliminate any potentially significant impacts to receiving water quality from stormwater runoff. In addition to complying with the standards established by the CWA for preparation of a SWPPP, the SWPPP shall also comply with the directions for preparing a SWPPP contained in the latest edition of the Guidelines for Construction Projects published by the SFBRWQCB.

WQ2 Prior to issuance of any building or grading permit, the project proponent shall submit to the City of Pittsburg Development Services Department a copy of the NOI and SWPPP sent to the State Water Resources Control Board.

WQ3 Prior to issuance of any building or grading permit for the proposed project, the project proponent shall submit a Stormwater Control Plan to the City of Pittsburg Development Services Department for the proposed project that meets applicable C.3 requirements.

Level of Significance After Mitigation: Less Than Significant Impact.

Groundwater Supply/Recharge Impacts

- ***THE PROPOSED PROJECT WOULD NOT 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.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: The proposed project would not involve any extraction of groundwater. However, implementation of the proposed project would result in the conversion of permeable surface to impermeable surface. However, in a regional perspective, the loss of impervious surface is considered minor given the amount of permeable surface available in the project area. In addition, the soils underlying the project site predominately consist of clay, indicating very low infiltration potential and, therefore, have a very low potential for groundwater recharge. The proposed project's impact on groundwater supply and recharge would be less than significant.

***Mitigation Measures*:** No mitigation is required.

Level of Significance: Less Than Significant Impact.

Erosion/Siltation Impacts

- ***THE PROPOSED PROJECT COULD POTENTIALLY 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.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: The proposed project would include approximately nine culverts and/or bridges, as necessary, to cross several drainage features, including Kirker Creek. Implementation of the proposed project would also result in an increase of impervious surface in the project area. The addition of culverts and the increase in impervious surface would potentially modify the project site's existing drainage pattern and would potentially increase runoff. Additionally, project construction would involve grading and earth movement activities, which would increase the potential for erosion or siltation. This erosion potential is considered to be moderate to high within the project site because of the presence of several drainage features and the proposed project's extensive grading; however, construction and operation of the proposed project would not alter the course of any drainages on or off the project site.

The proposed project would include a stormwater drainage system which would follow Caltrans Design Manual procedures and be configured to accommodate a 25-year design storm event. The stormwater drainage networks would be configured to discharge toward logical stream crossings to maintain existing drainage patterns and minimize erosion potential. The culvert sizes would be selected to convey the 100-year peak storm event runoff. This would convey ample runoff without excessively erosive discharge velocities. In addition, the proposed project would result in the placement of rip rap in some drainage areas to further protect the slopes from erosion.

The proposed project would comply with the goals and policies of the City General Plan and the County General Plan, as well as the City Municipal Code and the County Ordinance Code. Bio-retention facilities would be designed and implemented in accordance with the Contra Costa Clean Water Program to address stormwater quality from the additional impervious surface area that would result from the proposed project.

In addition, the proposed project would be required to obtain coverage under the NPDES General Permit issued by the SWRCB for stormwater discharge associated with construction activities. Compliance with the NPDES General Permit would require the preparation of a SWPPP, which would include BMPs that would reduce potential erosion or siltation impacts. Storm drainage networks in the project area would be configured to discharge toward logical stream crossings to maintain existing drainage patterns and minimize erosion potential. Detention basins would also be provided to meter drainage flow, and would also serve to meet the proposed project's water quality BMPs.

Impacts associated with the operational phase of the proposed project would be reduced through the implementation of Mitigation Measure WQ3, which recommends a collection, treatment and disposal system for the proposed project. In addition, Integrated Management Practices (IMPs) would be incorporated into the site design as part of the project's Stormwater Control Plan. These IMPs could include measures such as vegetated swales to capture and treat road drainage. IMPs would reduce stormwater runoff and result in less soil erosion or siltation being directed in to the stormwater drainage system. With implementation of Mitigation Measure WQ3, impact would be less than significant.

Mitigation Measures: Implement Mitigation Measure WQ3.

Level of Significance After Mitigation: Less Than Significant Impact.

On- or Off-site Flooding Impacts

- ***THE PROPOSED PROJECT WOULD ALTER THE EXISTING DRAINAGE PATTERN OF THE SITE OR AREA, INCLUDING THROUGH THE ALTERATION OF THE COURSE OF A STREAM OR RIVER, OR SUBSTANTIALLY INCREASE THE RATE OR AMOUNT OF SURFACE RUNOFF IN A MANNER WHICH WOULD RESULT IN FLOODING ON- OR OFF-SITE.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: As previously stated, implementation of the proposed project would result in the culverting of up to six ephemeral and intermittent streams and the increase of impermeable surfaces within the project site. In addition, overbank flooding does occur further downstream, between the Contra Costa Canal and SR 4 (RBF, 2012).

The proposed project would not directly alter the course of any drainages on or off the project site. As discussed above, the proposed project would include a stormwater drainage system which would follow Caltrans Design Manual procedures and be configured to accommodate a 25-year design storm event. The stormwater drainage networks would be configured to discharge toward logical stream crossings to maintain existing drainage patterns and minimize erosion potential. The culvert sizes would be selected to convey the 100-year peak storm event runoff, per the 100-year hydrograph computed at each creek crossing point (RBF 2012). This would convey ample runoff without excessively erosive discharge velocities. In addition, the proposed project would result in the placement of rip rap in some drainage areas to further protect the slopes from erosion. Bio-retention facilities would be designed and implemented in accordance with the Contra Costa Clean Water Program to address stormwater quality from the additional impervious surface area that would result from the proposed project. The bio-retention basins not only aid in water quality, but also distribute runoff water at a slower rate, thus reducing the potential for on- and off-site flooding due to increased runoff rates.

Mitigation Measures WQ3 requires a Stormwater Control Plan, which would limit peak flows and duration, thus further reducing the proposed project's potential impacts on surface water runoff. Thus, implementation of mitigation measures, in combination with the proposed project's stormwater drainage design features, would reduce on- or off-site flooding related impacts to less than significant.

Mitigation Measure: Implement Mitigation Measures WQ3.

Level of Significance: Less Than Significant Impact.

Stormwater Drainage System Impacts

- ***THE PROPOSED PROJECT COULD CREATE OR CONTRIBUTE RUNOFF WATER THAT WOULD EXCEED THE CAPACITY OF EXISTING OR PLANNED STORMWATER DRAINAGE SYSTEMS OR PROVIDE SUBSTANTIAL ADDITIONAL SOURCES OF POLLUTED RUNOFF.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis:

Drainage System Capacity

Implementation of the proposed project would result in an increase of impermeable surface, which may result in an increase in runoff. The proposed project would not directly alter the course of any drainages on or off the project site. As discussed above, the proposed project would include a stormwater drainage system which would follow Caltrans Design Manual procedures, configure the drainage network to discharge toward logical stream crossings, and size culverts to convey the 100-year peak storm event runoff, per the 100-year hydrograph computed at each creek crossing point (RBF, 2012). In addition, the bio-retention facilities would be designed and implemented in accordance with the Contra Costa Clean Water Program to address stormwater quality as well as increased runoff rates.

Mitigation Measures WQ3 requires a Stormwater Control Plan, which would limit peak flows and duration, thus further reducing the proposed project's potential impacts on surface water runoff. Thus, implementation of mitigation measures, in combination with the proposed project's stormwater drainage design features, would reduce the potential for runoff from the project to exceed existing or planned stormwater drainage systems and impacts to less than significant.

Polluted Runoff

The proposed project would introduce non-point source pollutants typical of urban settings associated with automobiles (rubber residue from tires, oil, grease, gasoline, and other automotive fuels). Implementation of the project's drainage design features, as well as Mitigation Measure WQ3, which requires a Stormwater Control Plan, would reduce the impact from the addition of polluted runoff from automotive sources to a less than significant level.

Mitigation Measures: Implement Mitigation Measures WQ3.

Level of Significance After Mitigation: Less Than Significant Impact.

Water Quality Impacts

- ***THE PROPOSED PROJECT WOULD NOT OTHERWISE SUBSTANTIALLY DEGRADE WATER QUALITY.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: The proposed project would not otherwise degrade water quality beyond the impacts discussed earlier in this section. Therefore, no further water quality impacts would result from project implementation.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

4.11 NOISE

Information in this section is based on the Contra Costa County General Plan, City of Pittsburg General Plan (City General Plan), City of Pittsburg Municipal Code, and traffic information contained in Section 4.13, *Transportation/Traffic*, of this Environmental Impact Report (EIR). Refer to Appendix H, *Noise Data*, for the assumptions utilized in this analysis.

4.11.1 ENVIRONMENTAL SETTING

NOISE CHARACTERISTICS AND MEASUREMENTS

Noise is typically described as any unwanted or objectionable sound. Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against sound frequencies in a manner approximating the sensitivity of the human ear.

The decibel scale is logarithmic. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range, similar to how the Richter scale measures earthquake magnitudes. In terms of human response to noise, a sound that is 10 dBA higher than another is perceived to be twice as loud; 20 dBA higher, four times as loud; and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are illustrated on Figure 4.11-1, *Sound Levels and Human Response*.

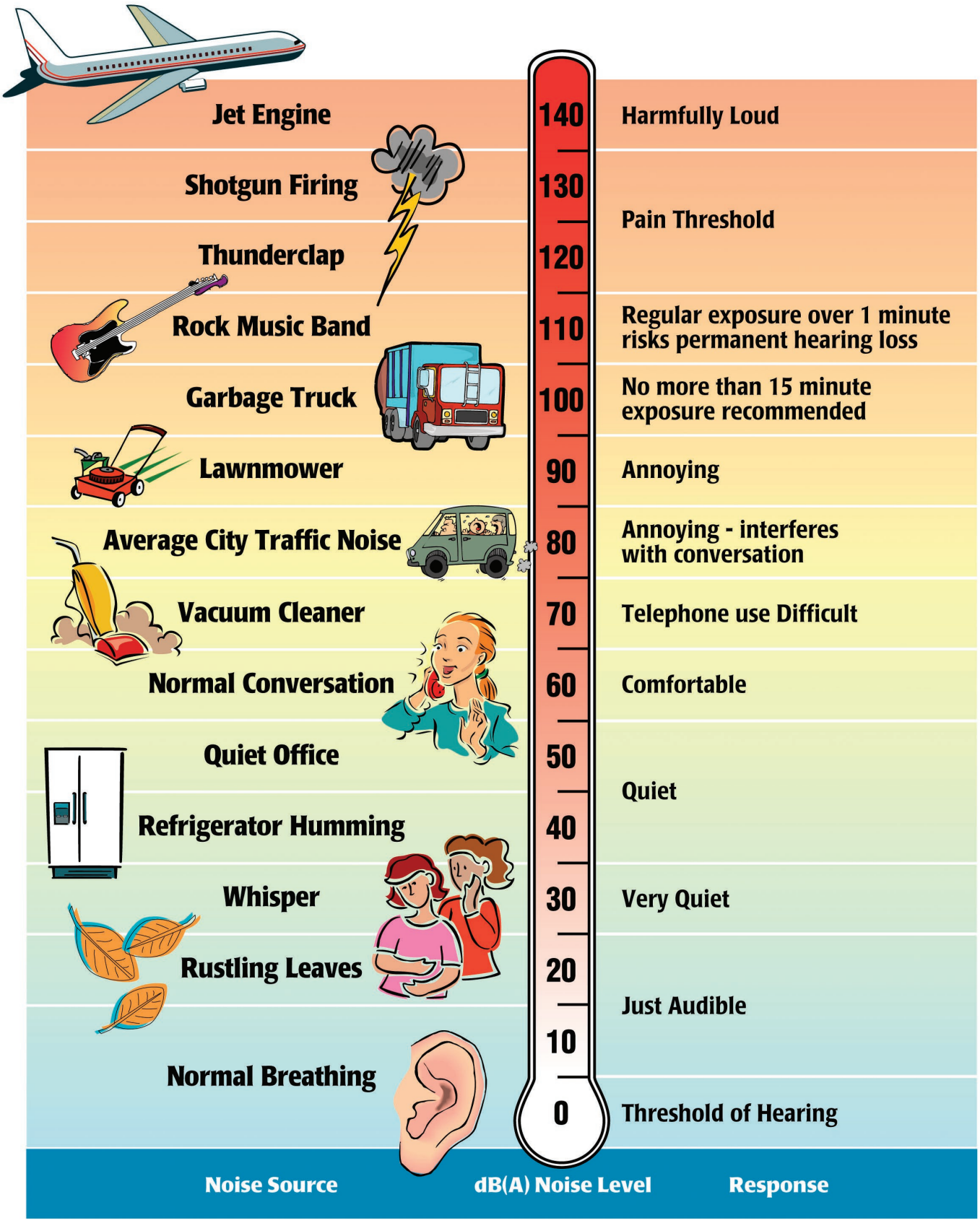
In most situations, a 3-dBA change in sound pressure level is considered a "just-detectable" difference. A 5-dBA change (either louder or quieter) is readily noticeable, and a 10-dBA change is a doubling (if louder) or a halving (if quieter) of the subjective loudness. Sound from a small localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (drops off) at a rate of 6 dBA for each doubling of the distance. This decrease, due to the geometric spreading of the energy over an ever-increasing area, is referred to as the *inverse square law*.

Noise Measurement Scales

Numerous methods have been developed to measure sound over a period of time. These methods include: (1) the community noise equivalent level (CNEL); (2) the equivalent sound level (Leq); and (3) the day/night average sound level (Ldn). These methods are described below in Table 4.11-1, *Noise Descriptors*.

Table 4.11-1
Noise Descriptors

Term	Definition
Decibel (dB)	The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measured sound to a reference pressure (20 micropascals).
A-Weighted Decibel (dBA)	A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
Equivalent Sound Level (L_{eq})	The sound level containing the same total energy as a time varying signal over a given time period. The L_{eq} is the value that expresses the time averaged total energy of a fluctuating sound level.
Maximum Sound Level (L_{max})	The highest individual sound level (dBA) occurring over a given time period.
Minimum Sound Level (L_{min})	The lowest individual sound level (dBA) occurring over a given time period.
Community Noise Equivalent Level (CNEL)	A rating of community noise exposure to all sources of sound that differentiates between daytime, evening and nighttime noise exposure. These adjustments are +5 dBA for the evening (7:00 PM to 10:00 PM) and +10 dBA for the night (10:00 PM to 7:00 AM).
Day/Night Average (L_{dn})	The L_{dn} is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the L_{eq}. The L_{dn} is calculated by averaging the L_{eq}'s for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 PM to 7:00 AM), by 10 dBA to account for the increased sensitivity of people to noises that occur at night.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent and 90 percent of a stated time period.
Source: Cyril M. Harris, *Handbook of Noise Control*, 1979.	



Source:

Melville C. Branch and R. Dale Beland, *Outdoor Noise in the Metropolitan Environment*, 1970.

Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA/ONAC 550/9-74-004)*, March 1974.

JAMES DONLON BOULEVARD EXTENSION EIR

Sound Levels and Human Response

Vibration Characteristics

Vibration is a unique form of noise. It is unique because its energy is carried through structures and the earth, whereas other noise is carried through the air. Thus, vibration is generally felt rather than heard. Some vibration effects can be caused by noise (e.g., the rattling of windows from passing trucks). The vibration phenomenon is related to the coupling of the acoustic energy at frequencies that are close to the resonant frequency of the material being vibrated. Typically, groundborne vibration generated by man-made activities attenuates rapidly as distance from the source of the vibration increases. Vibration, which spreads through the ground rapidly, diminishes in amplitude with distance from the source. The ground motion caused by vibration is measured as particle velocity in inches per second and, in the U.S., is referenced as vibration decibels (VdB).

The vibration velocity threshold for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration comes from sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is barely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity, to 100 VdB, which is the general threshold at which minor damage can occur to fragile buildings.

Health Effects of Noise

In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud, and 20 dBA higher four times as loud, and so forth. Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. The percentage of people claiming to be annoyed by noise generally increases with the environmental sound level. However, many factors also influence people's response to noise. The factors can include the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. Additionally, non-acoustical factors, such as the person's opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise, all influence people's response. As such, response to noise varies widely from one person to another and with any particular noise, individual responses will range from "not annoyed" to "highly annoyed."

When the noise level of an activity rises above 70 dBA, the chance of receiving a complaint is possible, and as the noise level rises, dissatisfaction among the public steadily increases. The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The effects of noise on the community can be organized into six broad categories:

- Noise-Induced Hearing Loss
- Interference with Communication
- Effects of Noise on Sleep
- Effects on Performance and Behavior
- Extra-Auditory Health Effects
- Annoyance

Although it often causes discomfort and sometimes pain, noise-induced hearing loss usually takes years to develop. Noise-induced hearing loss can impair the quality of life through a reduction in the ability to hear important sounds and to communicate with family and friends. Hearing loss is one of the most obvious and easily quantified effects of excessive exposure to noise. While the loss may be temporary at first, it becomes permanent after continued exposure. When combined with hearing loss associated with

aging, the amount of hearing loss directly caused by the environment is difficult to quantify. Although the major cause of noise-induced hearing loss is occupational, substantial damage can be caused by nonoccupational sources.

According to the U.S. Public Health Service, nearly ten million of the estimated 21 million Americans with hearing impairments owe their losses to noise exposure. Noise can mask important sounds and disrupt communication between individuals in a variety of settings. This process can cause anything from a slight irritation to a serious safety hazard, depending on the circumstance. Noise can disrupt face-to-face communication and telephone communication, and the enjoyment of music and television in the home. It can also disrupt effective communication between teachers and pupils in schools, and can cause fatigue and vocal strain in those who need to communicate in spite of the noise.

Interference with communication has proven to be one of the most important components of noise-related annoyance. Noise-induced sleep interference is one of the critical components of community annoyance. Sound level, frequency distribution, duration, repetition and variability can make it difficult to fall asleep and may cause momentary shifts in the natural sleep pattern, or level of sleep. It can produce short-term adverse effects on mood changes and job performance, with the possibility of more serious effects on health if it continues over long periods. Noise can cause adverse effects on task performance and behavior at work, and nonoccupational and social settings. These effects are the subject of some controversy, since the presence and degree of effects depend on a variety of intervening variables. Most research in this area has focused mainly on occupational settings, where noise levels must be sufficiently high and the task sufficiently complex for effects on performance to occur.

Recent research implicates that more moderate noise levels can produce disruptive after-effects, commonly manifested as a reduced tolerance for frustration, increased anxiety, decreased incidence of "helping" behavior and increased incidence of "hostile" behavior. Noise has been implicated in the development or exacerbation of a variety of health problems, ranging from hypertension to psychosis. As with other categories, quantifying these effects is difficult due to the amount of variables that need to be considered in each situation. As a biological stressor, noise can influence the entire physiological system. Most effects seem to be transitory, but with continued exposure some effects have been shown to be chronic in laboratory animals.

Annoyance can be viewed as the expression of negative feelings resulting from interference with activities, as well as the disruption of one's peace of mind and the enjoyment of one's environment. Field evaluations of community annoyance are useful for predicting the consequences of planned actions involving highways, airports, road traffic, railroads, or other noise sources. The consequences of noise-induced annoyance are privately held dissatisfaction, publicly expressed complaints to authorities, and potential adverse health effects, as discussed above. In a study conducted by the U.S. Department of Transportation, the effects of annoyance to the community were quantified. In areas where noise levels were consistently above 60 dBA CNEL, approximately nine percent of the community is highly annoyed. When levels exceed 65 dB CNEL, that percentage rises to 15 percent. Although evidence for the various effects of noise have differing levels of certainty, it is clear that noise can affect human health. Most of the effects are, to a varying degree, stress related. One can expect that the impacts of noise will increase over time, due to population growth, especially in urban areas, and the proliferation of noise sources, particularly those related to increased traffic.

NOISE SOURCES IN THE PROJECT AREA

Ambient Noise Measurements

In order to quantify existing ambient noise levels in the project area, noise measurements were conducted by RBF Consulting (RBF) on December 11, 2007. Existing noise levels in the project vicinity were sampled during off-peak traffic hours when traffic was flowing freely. All noise measurements for the study were performed using a Larson Davis Model 820 sound level meter. The monitoring equipment complies with applicable requirements of the American National Standards Institute for Type I (precision) sound level meters.

Ambient noise measurements were conducted, for 20-minutes each, to document existing noise levels at three representative sensitive receptor locations along the project alignment. Table 4.11-2, *Noise Measurement Results*, includes the results of these measurements. In areas with existing traffic in the project vicinity, these noise measurements were used to calibrate the noise model and to predict the noise levels at noise-sensitive land uses in the project area.

Table 4.11-2
Noise Measurement Results

Site No.	Location	Leq (dBA)	Time
1	Corner of James Donlon Boulevard and Sky Ranch II	44.4	11:20 AM
2	Border of Thomas Ranch Property and Existing Residential Subdivision, north of alignment	46.8	10:41 AM
3	End of Nortonville Road where it intersects with Kirker Pass Road, on western end of alignment	70.9	12:20 PM

Source: Noise Monitoring Survey conducted by RBF Consulting, December 11, 2007.

Mobile Noise Sources

The major sources of noise in Pittsburg and Contra Costa County include auto traffic on arterial streets and State Route 4 (SR 4). Noise generated by vehicular traffic in the City of Pittsburg is greatest along SR 4, producing noise levels exceeding 60 dBA over approximately 2,000 feet (more than one-third mile) both north and south of the highway. Local roadways, including Railroad Avenue, Buchanan Road, and Willow Pass Road, are also sources of traffic-generated noise. Traffic noise levels depend on the speed of traffic and the percentage of truck traffic.

To assess the potential for project-generated noise impacts, it is necessary to quantify the existing traffic-generated noise. Noise models were run using the Federal Highway Administration's (FHWA's) Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters. These parameters determine the projected impact of vehicular traffic noise and include the roadway cross-section (e.g., number of lanes), roadway width, average daily traffic (ADT), vehicle travel speed, percentages of auto and truck traffic, roadway grade, angle-of-view and site conditions ("hard" or "soft"). The model does not account for ambient noise levels (i.e., noise from adjacent land uses) or topographical differences between the roadway and adjacent land uses. Noise projections are based on modeled vehicular traffic as derived from Section 4.13, *Transportation/Traffic*.

A 25 to 45 mile per hour average vehicle speed was assumed for existing conditions based on empirical observations and posted maximum speeds along the adjacent roadways. Existing modeled traffic noise levels can be found in Table 4.11-3, *Existing Traffic Noise Levels*. The "Existing" conditions scenario represents "No Project" conditions based on traffic counts collected in 2007 and updated in 2011.

Table 4.11-3
Existing Traffic Noise Levels

Roadway Segment	Existing Conditions				
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)		
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour
Leland Road/Delta Fair Boulevard					
Railroad Avenue to Somersville Road	9,600	62.8	225	71	23
Buchannan Road					
Railroad Avenue to Somersville Road	18,900	64.5	326	103	33
Kirker Pass Road/ Railroad Avenue					
Clayton Road to SR 4	25,600	70.5	1315	416	131
Somersville Road					
SR 4 to James Donlon Boulevard	4,800	58.5	83	26	8
James Donlon Boulevard					
Somersville Road to Lone Tree Way	5,700	57.4	80	37	17
Ygnacio Valley Road					
Clayton Road to Cowell Road	33,000	65.9	312	145	67
Clayton Road					
Bailey Road to Treat Boulevard/Denkinger Road	23,300	66.4	546	173	55
Treat Boulevard					
Clayton Road to Oak Grove Road	24,000	67.8	747	236	75
ADT = average daily trips; dBA = A-weighted decibels					
Traffic modeling is based upon data provided by Fehr and Peers, September 2012.					

Stationary Noise Sources

The primary sources of stationary noise in the project area are residential activities (i.e., air conditioners, pool and spa equipment, landscape maintenance and conversations [normal to loud]) and urban-related or construction-related activities (i.e., mechanical equipment, hammering and construction equipment, and conversations). Noise associated with these sources may represent a single event noise occurrence, short-term, or long-term/continuous noise. For example, noise generated from construction-related activities, that occurred while the noise measurement were being taken, would cease once construction was complete.

Sensitive Receptors

Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities, and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours. The project site is immediately surrounded by open space, with residential land uses to the north. There are residential uses approximately 550 feet north of the western edge of the roadway and ranch housing and associated structures approximately 600 feet north of the middle of the roadway alignment. Table 4.11-4, *Sensitive Receptors*, describes the location of the sensitive receptors closest to the project site.

Table 4.11-4
Sensitive Receptors

Type	Name/Location	Distance from Project Site (feet)	Direction from Project Site
Schools	Foothill Elementary School 1200 Jensen Drive	3,250	north of eastern portion of roadway
	Highlands Elementary School/ Pittsburg Unified 4141 Harbor Street	4,650	north of center portion of roadway
Institutional	Come As You Are Ministry 4317 Thornhill Court	2,800	north of center portion of roadway
	New Life Christian Center 1166 Metten Avenue	3,430	north of center portion of roadway
	Church of the Nazarene 5305 Kirker Pass Road	1,850	north of western portion of roadway
Parks	Buchanan Park 4150 Harbor Street	4,380	north of center portion of roadway
	Highlands Park between Goldenhill Drive and Saint Paul Circle	3,960	north of center portion of roadway
	Markley Creek Park	1,700	east
	Woodland Hills Park	4,000	northwest
	Marchetti Park	4,900	northeast
Residential	Single Family Residential	550 - 1,200	north
	Single Family Residential	2,900	east
	Thomas Ranch property	600	north
	Single Family Housing/Ranch	1,400	south

Source: Google, maps.google.com, October 2012.

4.11.2 REGULATORY SETTING

STATE OF CALIFORNIA

California Government Code

California Government Code Section 65302(f) mandates that the legislative body of each county and city or town adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the California Department of Health Services, as shown in Table 4.11-5, *Land Use Compatibility Noise Guidelines*. Both Contra Costa County and the City of Pittsburg adhere to the guidelines depicted in Table 4.11-5.

Table 4.11-5
Land Use Compatibility Noise Guidelines

Land Use Category	Community Noise Exposure (CNEL)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 – 60	55 - 70	70-75	75-85
Residential - Multiple Family	50 – 65	60 - 70	70 - 75	70 – 85
Transient Lodging - Motel, Hotels	50 – 65	60 - 70	70 - 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 - 70	70 - 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 – 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 – 85
Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 - 75	72.5 - 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	NA	70 - 80	80 – 85
Office Buildings, Business Commercial and Professional	50 – 70	67.5 - 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 - 80	75 - 85	NA
CNEL = community noise equivalent level in A-weighted decibels (dBA); NA = not applicable.				
NORMALLY ACCEPTABLE: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. CONDITIONALLY ACCEPTABLE: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice. NORMALLY UNACCEPTABLE: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise-insulation features must be included in the design. CLEARLY UNACCEPTABLE: New construction or development should generally not be undertaken.				
Source: California Office of Planning and Research, *General Plan Guidelines*, October 2003.				

In evaluating land use compatibility, the guidelines classify noise levels as normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable for various land use types. For single-family residences, a normally acceptable exterior noise environment is up to 60 CNEL and conditionally acceptable is up to 70 CNEL.

LOCAL

City of Pittsburg General Plan

The Noise Element of the City of Pittsburg General Plan (City General Plan) contains the following policies with respect to excessive noise levels:

Policy 12-P-1 As part of development review, use Figure 23 (in the General Plan) to determine acceptable uses and installation requirements in noise-impacted areas.

Policy 12-P-3 Support implementation of State legislation that requires reduction of noise from motorcycles, automobiles, trucks, trains, and aircraft.

Policy 12-P-4	Require noise attenuation programs for new development exposed to noise above normally acceptable levels. Encourage noise attenuation programs that avoid visible sound walls.
Policy 12-P-8	Develop noise attenuation programs for mitigation of noise adjacent to existing residential areas, including such measures as wider setbacks, intense landscaping, hours of operation, and other techniques, for new development deemed to be noise generators.
Policy 12-P-9	Limit generation of loud noises on construction sites adjacent to existing development to normal business hours between 8:00 a.m. and 5:00 p.m.
Policy 12-P-10	Reduce the impact of truck traffic noise on residential areas by limiting such traffic to appropriate truck routes. Consider methods to restrict truck travel times in sensitive areas.

City of Pittsburg Municipal Code

The City has adopted a Noise Ordinance in order to regulate certain noise levels that are detrimental to the health and welfare of the citizenry. The Noise Ordinance does not establish noise level limits related to fixed noise sources or construction noise (Title 9 Public Peace, Safety and Morals, Chapter 9.44 Noise, §9.44.010). However, the ordinance prohibits the use of a pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other appliances between the hours of 10:00 PM and 7:00 AM. Additionally, section 18.82.040 (Noise) of the Pittsburg Municipal Code limits construction noise to 65 dB measured at the property line, except between the hours of 8:00 AM and 5:00 PM.

Contra Costa County General Plan

The Contra Costa County General Plan (County General Plan) Noise Element outlines the following goals and policies:

Goal 11-A	To improve the overall environment in the County by reducing annoying and physically harmful levels of noise for existing and future residents and for all land uses.
Goal 11-B	To maintain appropriate noise conditions in all areas of the County.
Goal 11-E	To recognize citizen concerns regarding excessive noise levels, and to utilize measures through which the concerns can be identified and mitigated.
Policy 11-7	Public projects shall be designed and constructed to minimize long-term noise impacts on existing residents.
Policy 11-8	Construction activities shall be concentrated during the hours of the day that are not noise-sesitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.
Policy 11-11	Noise impacts upon the natural environment, including impacts on wildlife, shall be evaluated and considered in review of development projects.

Contra Costa County does not have an ordinance specifically for addressing noise. Noise complaints within the unincorporated area of the county are addressed through application of peace disturbance sections of the County Code and application of generic nuisance ordinances of the County Code.

4.11.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant noise impact if it would:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise

Significance of Changes in Traffic Noise Levels

An off-site traffic noise impact typically occurs when there is a discernable increase in traffic and the resulting noise level exceeds an established noise standard. In community noise considerations, changes in noise levels greater than 3 dBA are often identified as substantial, while changes less than 1 dBA will not be discernible to local residents. In the range of 1 to 3 dBA, residents who are very sensitive to noise may perceive a slight change. In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dBA. This is based on a direct immediate comparison of two sound levels. In a community noise situation, however, noise exposures are over a long period of time and changes in noise levels occur over years (rather than the immediate comparison made in a laboratory situation). Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dBA, and 3 dBA is the most commonly accepted discernable difference. A 5 dBA change is generally recognized as a clearly discernable difference.

As traffic noise levels at sensitive uses likely approach or exceed the 65 CNEL standard, a 3.0 dBA increase as a result of the project is used as the increase threshold for the project. Thus, the project would result in a significant noise impact when a permanent increase in ambient noise levels of 3.0 dBA occur upon project implementation and the resulting noise level exceeds the applicable exterior standard at a noise sensitive use.

Vibration Thresholds

A technical discussion of construction activity-related vibration is provided in the Federal Transit Administration publication titled Transit Noise and Vibration Impacts Assessment (May 2006). As described therein, a ground-borne vibration level of 0.2 inch-per-second peak particle velocity (PPV) should be considered as damage threshold criterion for structures deemed "fragile," and a ground-borne

vibration level of 0.12 inch-per-second PPV should be considered as damage criterion for structures deemed "extremely fragile," such as historic buildings. With respect to structures deemed "well engineered," a ground-borne vibration level of 2.0 inch-per-second PPV should be considered as damage threshold criterion. The analysis has assumed a conservative threshold of 0.2 inch-per-second PPV.

AREAS OF NO PROJECT IMPACT

The following impacts are either not applicable to the proposed project or are not reasonably foreseeable:

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels

The proposed project is not within an airport land use plan (ALUP) nor is it within two miles of a public airport or public use airport. The Buchanan Field Airport, a public airport located in Concord, is 8.25 miles west of the proposed project. All other airports are more than 15 miles from the proposed project site and include Travis Air Force Base in Fairfield to the north, Rio Vista Municipal Airport to the northeast, Byron Airport near Byron to the southeast, and Livermore Airport to the south.[1] The proposed project is a roadway extension project and therefore would not result in people residing or working within the project area, beyond regular road maintenance. No impact would occur in this regard.

- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels

The proposed project is not within the vicinity of a private airstrip. The Q Area Heliport is a private heliport located more than 6.5 miles northwest of the proposed project site. All other private airstrips are located more than 15 miles from the proposed project site and include Meadowlark Field Airport and PG&E Livermore Training Center Heliport in Livermore to the south, and Little Hands Airport in San Ramon to the southwest.[2] The proposed project is a roadway extension project and therefore would not result in people residing or working within the project area, beyond regular road maintenance. No impact would occur in this regard.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Short-Term Construction Noise Impacts

♦ ***CONSTRUCTION NOISE COULD RESULT IN TEMPORARY IMPACTS TO NEARBY NOISE SENSITIVE RECEPTORS.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Excavation and grading activities along the proposed roadway alignment would result in short-term noise impacts during construction of the proposed project. Construction-related noise activities have the potential to temporarily exceed noise standards. However, these impacts would occur only during periods of construction and would end once construction is completed. The nearest existing noise-sensitive receptors are the residences situated to the north, south, and east. Open space is located to the west of the project site.

[1] AirNav. 2012. Airport Information as of September 20, 2012. Available at http://www.airnav.com/airports/get. Accessed 4 October 2012.
[2] AirNav. 2012. Airport Information as of September 20, 2012. Available at http://www.airnav.com/airports/get. Accessed 4 October 2012.

Roadway construction would be performed in phases, each of which requires specific equipment and consequently each phase has distinctive noise characteristics associated with it. Noise levels during construction would vary with each phase of the construction process. Despite the variety in the types and sizes of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise impacts ranges to be categorized by work phase. Table 4.11-6, *Typical Construction Equipment Noise Levels,* identifies the maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the equipment and a noise receptor. Typical maximum noise levels range up to 85 dBA L_{max} at 50 feet during the noisiest construction phases. The grading phase tends to generate the highest noise levels because earthmoving construction equipment tends to generate the greatest level of noise. Generally, site preparation has the shortest duration of all construction phases and activities that occur during this phase include earthmoving and soils compaction. Earthmoving equipment includes excavating machinery such as tractors, bulldozers, and front loaders, compactors, scrapers, and graders. Operating cycles for these types of construction equipment may be one or two minutes of full-power operation followed by three to four minutes at lower power settings.

Table 4.11-6
Typical Construction Equipment Noise Levels

Type of Equipment	Acoustical Use Factor[1]	Lmax at 50 feet (dBA)
Tractor	40	84
Dump Truck	40	76
Excavator	40	81
Grader	40	85
Loader	40	79
Paver	50	77
Roller	20	80
Scraper	40	84
Backhoe	40	78
Water Truck	40	74

Note:
1 – Acoustical Use Factor (percent): Estimates the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Source: Federal Highway Administration, *Roadway Construction Noise Measurement, (FHWA-HEP-05-054)*, January 2006.

For construction noise, a "substantial" noise increase can be defined as interference with activities during the day and night. One indicator that construction noise could interfere with daytime activities would be speech interference. As the City does not have quantitative guidelines for construction noise, the following criteria is utilized in the analysis to define relative construction related noise impacts:

- *Speech Interference Criteria*. The Speech Interference Level was designed to highlight or measure the degree to which background noise interferes with speech levels. Speech spoken with slightly more vocal effort can be understood well, when the noise level is 65 dBA. A typical building can reduce noise levels by 20 dBA with the windows closed.[3] This noise reduction could be maintained only on a temporary basis in some cases, since it assumes windows would remain closed at all times. Therefore, this analysis utilizes an interior level of 65 dBA as a criterion level for determining significance for construction related activities, in the absence of an adopted specific construction noise related threshold by any of the local jurisdictions in which the proposed project is located.

[3] United States Department of Housing and Urban Development, *The Noise Guidebook*, undated, page 14.

The anticipated short-term construction noise levels generated during clearing, grading, trenching, and paving activities are presented in Table 4.11-7, *Construction Average L_{eq} (dBA) Noise Levels by Receptor Distance and Construction Stage*. Construction activities would expose adjacent receptors to interior noise levels of:

Table 4.11-7
Construction Average Leq (dBA) Noise Levels by Receptor Distance and Construction Stage

Description	Receptor Locations		Estimated Exterior Construction Noise Level[3, 4]	Estimated Interior Construction Noise Level[3, 4]	Speech Interference Criteria	Exceed Criteria?
	Direction[1]	Distance[2]				
Phase 1						
Clearing	North	550 feet	65.4 dBA	45.4 dBA	65 dBA	*No*
	South	1,400 feet	57.3 dBA	37.3 dBA	65 dBA	*No*
	East	2,900 feet	51.0 dBA	31.0 dBA	65 dBA	*No*
Phase 2						
Grading/Excavation	North	550 feet	67.7 dBA	47.7 dBA	65 dBA	*No*
	South	1,400 feet	59.6 dBA	39.6 dBA	65 dBA	*No*
	East	2,900 feet	53.2 dBA	33.2 dBA	65 dBA	*No*
Phase 3						
Trenching	North	550 feet	66.8 dBA	46.8 dBA	65 dBA	*No*
	South	1,400 feet	58.7 dBA	38.7 dBA	65 dBA	*No*
	East	2,900 feet	52.3 dBA	52.3 dBA	65 dBA	*No*
Phase 4						
Paving	North	550 feet	63.2 dBA	43.2 dBA	65 dBA	*No*
	South	1,400 feet	55.1 dBA	35.1 dBA	65 dBA	*No*
	East	2,900 feet	48.7 dBA	28.7 dBA	65 dBA	*No*

Notes:
1 – Directly to the North, South, East, and West is open space. About 600 feet north of the roadway alignment is Thomas Ranch, north of this is a residential subdivision (this subdivision is between approximately 550 to 1,200 feet north of the roadway alignment). A ranching residential property lies approximately 1,400 feet southwest of the roadway alignment.
2 – Distance is from the nearest sensitive receptor to the center of the project site, which approximates the acoustical dispersal characteristics of an active small construction zone.
3 – A typical building can reduce noise levels by 20 dBA with the windows closed (United States Department of Housing and Urban Development, *The Noise Guidebook*, undated, page 14). This assumes all windows and doors are closed, thereby attenuating the exterior noise levels by 20 dBA.
4 – Derived from the Federal Highway Administration, *Roadway Construction Noise Model (FHWA-HEP-05-054)*, March 2008; refer to Appendix H of this Draft EIR.

- 45.4 dBA during the clearing phase;
- 47.7 dBA during the grading phase;
- 46.8 dBA during the trenching phase; and
- 43.2 dBA during paving phase.

As shown in Table 4.11-7, construction period noise levels are expected to range from 48.7 dBA to 67.7 dBA. Phase 2, or the grading phase, would be the noisiest construction phase with a range from 53.2 dBA to 67.7 dBA. Equipment, such as scrapers, loaders, and graders, would be used during this phase and would contribute to the noise levels during construction. Phases 1, 3, and 4 would generate similar construction noise levels and would range from 48.7 dBA to 66.8 dBA. Equipment used during these phases includes graders, dozers, tractors, pavers, rollers, trenchers, and water trucks.

The estimated construction noise level during the mass grading phase would not exceed the interior speech interference criteria (65 dBA) at the sensitive receptor locations. Section 18.82.040 (Noise) of the Pittsburg Municipal Code limits construction noise to 65 dB measured at the property line, except between the hours of 8:00 AM and 5:00 PM. Additionally, all construction activities for the proposed project would adhere to the City's Noise Ordinance, which prohibits the use of a pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other appliance between the hours of 10:00 PM and 7:00 AM. Implementation of Mitigation Measure NOI1 would require that all proposed project construction equipment be operated and maintained with noise reducing mufflers and all stationary construction equipment directed away from sensitive noise receptors. Mitigation Measure NOI1 would also require all construction activities for the proposed project to adhere to the City's Noise Ordinance, which limits construction hours between 8:00 a.m. and 5:00 p.m. and prohibits the use of loud impact equipment between the hours of 10:00 p.m. and 7:00 a.m. Compliance with the recommended mitigation and compliance with the City's Noise Ordinance would reduce impacts associated with construction-related noise exposure to a less than significant level.

Mitigation Measures:

NOI1 Prior to issuance of a grading permit, the project proponent shall provide evidence to the City of Pittsburg Development Services Department that is acceptable to demonstrate the project complies with the following:

- Construction contracts specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices.
- Property owners and occupants located within 550 feet of the project boundary shall be sent a notice, at least 15 days prior to commencement of construction of each phase, regarding the construction schedule of the proposed project. A sign, legible at a distance of 50 feet shall also be posted at the project construction site. All notices and signs shall be reviewed and approved by the City of Pittsburg Development Services Department and the City Engineer, prior to mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number where residents can inquire about the construction process and register complaints.
- If impact equipment (e.g., jack hammers, pavement breakers, and rock drills) is used during project construction, hydraulically or electric-powered equipment shall be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used (a muffler can lower noise levels from the exhaust by up to about 10 dBA).
- Construction haul routes shall be designed to avoid noise sensitive uses (e.g., residences, convalescent homes, etc.), to the extent feasible.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.
- Construction activities shall not take place outside of the allowable hours specified by the City's Municipal Code Section 18.82.040 (8:00 AM and 5:00 PM). Additionally, pursuant to Section 9.44.010 of the City's Municipal Code the use of a pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other appliances between the hours of 10:00 PM and 7:00 AM are prohibited.

Level of Significance After Mitigation: Less Than Significant Impact.

Construction-Related Vibration Impacts

- ***THE PROPOSED PROJECT COULD EXPOSE PERSONS TO OR GENERATE EXCESSIVE GROUNDBORNE VIBRATION OR GROUNDBORNE NOISE LEVELS.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: Proposed project construction can generate varying degrees of ground-borne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Ground-borne vibrations from construction activities rarely reach levels that damage structures.

The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.2 inch/second) appears to be conservative even for sustained pile driving. Pile driving levels often exceed 0.2 inch/second at distances of 50 feet, and 0.5 inch/ second at 25 feet without any apparent damage to buildings.

Construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. The typical vibration produced by construction equipment is illustrated in Table 4.11-8, *Typical Vibration Levels for Construction Equipment*.

Table 4.11-8
Typical Vibration Levels for Construction Equipment

Equipment	Reference peak particle velocity at 25 feet (inches/second)[1]	Approximate peak particle velocity at 100 feet (inches/second)[2]	Approximate peak particle velocity at 550 feet (inches/second)[2]
Large bulldozer	0.089	0.011	0.001
Loaded trucks	0.076	0.010	0.001
Small bulldozer	0.003	0.0004	0.00003
Jackhammer	0.035	0.004	0.0003
Vibratory compactor/roller	0.210	0.026	0.002
Typical Impact Pile Driver	0.644	0.081	0.006
Typical Sonic Pile Driver	0.170	0.021	0.002

Notes:
1. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, May 2006. Table 12-2.
2. Calculated using the following formula:
$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$
where: PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance
PPV (ref) = the reference vibration level in in/sec from Table 12-2 of the FTA *Transit Noise and Vibration Impact Assessment Guidelines*
D = the distance from the equipment to the receiver

As indicated in Table 4.11-8, based on the FTA data, vibration velocities from typical heavy construction equipment that would be used during project construction range from 0.003 to 0.644 inch-per-second peak particle velocity (PPV) at 25 feet from the source of activity. With regard to the proposed project, ground-borne vibration would be generated during site clearing and grading activities on-site and by off-site haul-truck travel facilitated by implementation of the project. Due to the geologic conditions beneath the project site, pile driving of caissons would be required for the proposed on-site structures which would also result in vibration. Typical impact pile drivers would result in vibration velocities of 0.644 inch-per-second PPV at 25 feet, 0.081 inch-per-second PPV at 100 feet, and 0.006 inch-per-second PPV at 550 feet. Typical sonic pile drivers result in lower vibration velocities.

The nearest sensitive land uses (residential uses) are located approximately 550 feet to the north of the project site boundaries, and more than 550 feet north of the nearest location of proposed pile driving. As demonstrated in Table 4.11-8, the anticipated vibration levels would not exceed the 0.2 inch-per-second PPV significance threshold during construction operations at the nearest receptors. It should be noted that 0.2 inch-per-second PPV is a conservative threshold, as that is the construction vibration damage criteria for non-engineered timber and masonry buildings.[4] Buildings within the project area would be better represented by the 0.5 inch-per-second PPV significance threshold (construction vibration damage criteria for a reinforced concrete, steel, or timber buildings).[5] Therefore, vibration impacts associated with construction are anticipated to be less than significant. Additionally, compliance with Municipal Code Section 9.44.010 would limit the hours of use for impact equipment and implementation of Mitigation Measure NOI1 would also reduce construction vibration impacts to nearby receptors.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

Permanent Ambient Noise Impacts

- ***IMPLEMENTATION OF THE PROPOSED ROADWAY ALIGNMENT COULD PERMANENTLY INCREASE AMBIENT NOISE LEVELS IN THE PROJECT VICINITY ABOVE LEVELS EXISTING WITHOUT THE ROADWAY.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: The proposed James Donlon Boulevard Extension would introduce vehicular traffic where no traffic currently exists and, thus, increase ambient noise levels at nearby sensitive receptors. Proposed project implementation would result in the construction of a 1.71-mile roadway extension from the western edge of the approved Sky Ranch II Subdivision to Kirker Pass Road. Potential long-term noise impacts associated with operations of the proposed roadway alignment would solely be generated from traffic noise. To determine noise impacts from off-site mobile sources that would result from the roadway alignment, noise associated with traffic under "Existing" conditions and "Existing Plus Project" conditions were compared. The results of this comparison are presented in Table 4.11-9, *Existing Plus Project Traffic Noise Scenarios*.

In Table 4.11-9, the noise level (dBA at 100 feet from centerline) depicts what would typically be heard 100 feet perpendicular to the roadway centerline. As indicated in Table 4.11-9 under the "Existing" scenario, noise levels at a distance of 100 feet from the centerline would range from approximately 58.5 dBA to 70.5 dBA. The highest noise levels under "Existing" conditions would occur along Kirker Pass Road/Railroad Avenue (between Clayton Road and SR 4). Under the "Existing Plus Project" scenario,

[4] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, May 2006. Table 12-3.
[5] Ibid.

noise levels at a distance of 100 feet from the centerline would range from approximately 61.3 dBA to 70.9 dBA. The highest noise levels under Existing Plus Project conditions would also occur along Kirker Pass Road/Railroad Avenue (between Clayton Road and SR 4). Table 4.11-9 also compares the "Existing" scenario to the "Existing Plus Project" scenario. The proposed project would increase noise levels on the surrounding roadways by a maximum of 5.1 dBA along James Donlon Boulevard (between Somersville Road and Lone Tree Way). However, the ultimate noise level would be 62.5 dBA, which is below the noise compatibility criteria of 65 dBA. Thus, noise levels resulting from the proposed project would be less than significant.

Table 4.11-9
Existing Plus Project Traffic Noise Scenarios

Roadway Segment	Existing		Existing Plus Project		Difference in dBA @ 100 feet from Roadway	Potentially Significant Impact?
	ADT	dBA @ 100 Feet from Roadway Centerline	ADT	dBA @ 100 Feet from Roadway Centerline		
Leland Road/Delta Fair Boulevard						
Railroad Avenue to Somersville Road	9,600	62.8	9,200	62.6	-0.2	No
Buchannan Road						
Railroad Avenue to Somersville Road	18,900	64.5	10,800	62.1	-2.4	No
Kirker Pass Road/ Railroad Avenue						
Clayton Road to SR 4	25,600	70.5	28,200	70.9	0.4	No
Somersville Road						
SR 4 to James Donlon Boulevard	4,800	58.5	9,300	61.3	2.8	No
James Donlon Boulevard						
Somersville Road to Lone Tree Way	5,700	57.4	18,200	62.5	5.1	No
Ygnacio Valley Road						
Clayton Road to Cowell Road	33,000	65.9	33,600	66.0	0.1	No
Clayton Road						
Bailey Road to Treat Boulevard/Denkinger Road	23,300	66.4	22,600	66.3	-0.1	No
Treat Boulevard						
Clayton Road to Oak Grove Road	24,000	67.8	24,500	67.9	0.1	No
James Donlon Extension						
Railroad Avenue to Somersville Road	N/A	N/A	21,900	63.2	N/A	No

ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level

Traffic modeling is based upon data provided by Fehr and Peers, September 2012.

Impacts to Receptors

As described above, the closest sensitive receptors would be located approximately 550 feet to the north of the proposed roadway alignment. As indicated in Table 4.11-9, traffic noise levels at 100 feet from the centerline of the proposed James Donlon Boulevard extension would be 66.4 dBA. Noise levels from the proposed alignment would continue to attenuate over the remainder of the distance to the sensitive receptors. As a result, the 65 dBA traffic noise contour would be located approximately 162 feet from the

roadway centerline and the 60 dBA traffic noise contour would be located approximately 513 feet from the roadway centerline (refer to Appendix H, *Noise Data*). As the closest sensitive receptors are located approximately 550 feet away, they would experience traffic noise levels below 60 dBA from the proposed roadway extension. Therefore, traffic noise impacts sensitive receptors would be less than significant.

Stationary Noise Impacts

Due to the scope and nature of the proposed roadway alignment, no long-term stationary noise impacts have been identified. Stationary noise sources are generally associated with commercial and industrial developments involving mechanical equipment, trash compactors, loading areas, parking areas, heating, and ventilation units. No noise generating stationary operations are anticipated to be implemented into the proposed project design. Therefore, the proposed roadway alignment would result in less than significant impacts.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

4.12 POPULATION AND HOUSING

4.12.1 ENVIRONMENTAL SETTING

CITY OF PITTSBURG

Population

The population of the City of Pittsburg (City) has grown significantly over the last few decades, from approximately 33,000 residents in 1980 to 56,800 residents in 2000, or an average rate of 2.7 percent per year.[1] By 2010, the City had a population of 63,264 persons.[2] The City's population growth is largely attributed to an influx of persons relocating to the region from outside the area. According to projections provided by the Association of Bay Area Governments (ABAG), Pittsburg is estimated to grow to approximately 78,100 residents by 2030.[3]

Housing

According to the City's Housing Element, from 2000 to 2008, approximately 2,500 new homes were added to Pittsburg's housing stock. According to ABAG, the City had a total of 21,126 housing units in 2010; 19,527 of which were occupied (including both owner- and renter-occupied dwellings).[4] The 2010 U.S. Census shows the majority of Pittsburg's residents (about 58.8 percent) lived in owner-occupied units, while the remainder (41.2 percent) lived in renter-occupied units, with an average of household size of 3.22 persons per household.[5]

Employment

According to the City General Plan Housing Element, there were approximately 18,300 jobs located in Pittsburg in 2005, the majority of which were manufacturing, wholesale, and transportation, followed by health, education and recreation jobs. It is anticipated that an additional 19,000 jobs will be added to the area by 2030. (City General Plan, Housing Element).

The City has a current labor force of approximately 30,900 persons. Unemployed person's total about 4,600 as of July 2012, and make up 14.8 percent of the total workforce population, this is above the state average of 10.9 percent. However, the City's unemployment rate has decreased from 2011, which had an unemployment rate of 17.1 percent[6].

Job/Housing Ratio

The City's job/employed residents ratio was approximately 0.54 when the City General Plan Housing Element was updated in 2009. The ideal jobs/employed ratio is 1.0. A ratio less than 1.0 indicates that most residents work outside of the City limits, adding to traffic congestion and economic leakage.

[1] City of Pittsburg Housing Element. City of Pittsburg, CA, June 2009.
[2] Association of Bay Area Governments (ABAG). *City of Pittsburg Bay Area Forecasts*, Census 2010. http://www.bayareacensus.ca.gov/cities/Pittsburg.htm. Accessed 5 September, 2012.
[3] City of Pittsburg Housing Element. City of Pittsburg, CA, June 2009.
[4] Association of Bay Area Governments (ABAG). *City of Pittsburg Bay Area Forecasts*. http://www.bayareacensus.ca.gov/cities/Pittsburg.htm. Accessed 5 September, 2012.
[5] U.S. Census Bureau, Profile of General Population and Housing Characteristics: 2010, 2010 Demographic Profile Data for City of Pittsburg, CA. http://factfinderr2.census.gov. Accessed 5 September, 2012.
[6] California Employment Development Department, Labor Force Data for Sub County Areas. www.laborformarketinfo.edd.ca.gov. Accessed September 5, 2012.

CONTRA COSTA COUNTY

Population

Contra Costa County was established in 1850, and since then various locations within the County have experienced rapid growth at different times. In 2000, the County population totaled 948,816 persons. By 2010, the population had increased by 101,584 persons, bringing the total population up to 1,049,025 (U.S. Census Bureau, 2010).[7] By the year 2030, the County-wide population is projected to reach 1,263,049.[8]

Housing

Contra Costa County encompasses a variety of housing sub-markets. According to the 2010 U.S. Census, approximately 67 percent of the occupied housing stock in Contra Costa County was owner-occupied, and approximately 33 percent was renter-occupied. Strong residential growth continued to be a common trend among the cities in Contra Costa County; from 2000 to 2008, approximately 41,600 new households were added.[9] According to the ABAG, the County had a total of 400,263 housing units in 2010; 375,364 of which were occupied (including both owner- and renter-occupied dwellings).[10] In 2010, the County had an average of 2.77 persons per household.[11]

Housing costs and sales prices of homes vary significantly within Contra Costa County. Generally, home prices are higher in the central sub-region of the County, while homes in the east and west sub-regions are more affordable (with the exception of a few communities such as Blackhawk).

Employment

The most recent labor data available (July 2012) indicates that Contra Costa County has a labor force totaling 530,500 persons. About 49,600 of those persons are unemployed, generating an unemployment rate of 9.4 percent, just under the state unemployment rate of 10.9 percent. This percentage represents a decrease from 2011, when the unemployment rate was at 10.9 percent[12].

According to the Contra Costa County General Plan (County General Plan), the County has one of the fastest growing work forces among Bay Area counties. The County's growth in its employment base is driven by the need to provide services to increasing local populations.

Job/Housing Ratio

In 2009, the County's jobs/employed residents ratio was 0.82. The ideal jobs/employed ratio is 1.0. A ratio less than 1.0 indicates that most residents work outside of the County, adding to traffic congestion and economic leakage.[13]

[7] U.S. Census Bureau. Profile of General Population and Housing Characteristics: 2010, 2010 Demographic Profile Data. Available at: http://factfinder2.census.gov. Accessed September 5, 2012.
[8] California Department of Finance. *Interim Projects of Population for California: State and Counties*. May 7, 2012. Available at http://www.dof.ca.gov/research/demographic/reports/projections/interim/view.php. Accessed on September 5, 2012.
[9] City of Pittsburg Housing Element. City of Pittsburg, CA. June 2009.
[10] Association of Bay Area Governments (ABAG). *Contra Costa County Forecasts*. http://www.bayareacensus.ca.gov/cities/Pittsburg.htm. Accessed 5 September, 2012.
[11] Ibid.
[12] California Employment Development Department, Labor Force Data for Contra Costa County. www.laborformarketinfo.edd.ca.gov. Accessed September 5, 2012.
[13] City of Pittsburg. *General Plan Housing Element*. June 2009.

4.12.2 REGULATORY SETTING

LOCAL

City of Pittsburg General Plan

The following goals are listed in the Housing Element of the City of Pittsburg General Plan (*General Plan)*:

Goal G-1	Foster development of a variety of housing types, densities and prices to balance the City's housing stock and meet the City's regional fair share housing needs for peoples of all income levels.
Goal G-2	Promote the expansion of our affordable housing stock, including that which accommodates special needs households.
Goal G-3	Eliminate housing discrimination.
Goal G-4	Improve and preserve the existing affordable housing stock, where feasible and appropriate.
Goal G-5	Enhance the visual quality of Pittsburg's residential neighborhoods.

Contra Costa County General Plan

The following goals are set forth in the Housing Element of the Contra Costa County General Plan:

Goal 1	Maintain and improve the quality of the existing housing stock and residential neighborhoods in Contra Costa County.
Goal 2	Preserve the existing affordable housing stock in Contra Costa County.
Goal 3	Increase supply of housing with a priority on the development of affordable housing.
Goal 4	Increase the supply of appropriate and supportive housing for special needs populations.
Goal 5	Improve housing affordability for both renters and homeowners.
Goal 6	Provide adequate sites through appropriate land use and zoning designations to accommodate the County's share of regional housing needs.
Goal 7	Mitigate potential governmental constraints to housing development and affordability.
Goal 8	Promote equal opportunity for all residents to reside in the housing of their choice.

4.12.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact on population and housing if it would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere

AREAS OF NO PROJECT IMPACT

The following impacts are either not applicable to the project or are not reasonably foreseeable:

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

The proposed project would not require the removal or displacement of any structures or their inhabitants; therefore, no housing would be displaced, and the proposed project would not require construction of replacement housing elsewhere. Since no structures would be impacted by the proposed project, no inhabitants would be displaced. Therefore, the proposed project would have no impact in this regard.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Population Growth Impacts

♦ ***THE PROPOSED PROJECT COULD INDIRECTLY INDUCE POPULATION GROWTH BY EXPANDING TRANSPORTATION CAPACITY AND POTENTIALLY FACILITATING ACCESS TO CURRENTLY UNDEVELOPED AREAS.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: The majority of the project area is privately owned and has been used for cattle grazing for more than 100 years. The proposed project area has single-family residential homes located to the north, the approved Sky Ranch II Subdivision located to the east, and undeveloped agricultural and open space to the south. The property west of the project area, across Kirker Pass Road, is undeveloped; however, the City is currently processing an application to subdivide the approximately 148-acre site into 380 single-family residential lots.

The proposed project is located within the City's Sphere of Influence and the City's Urban Limit Line, as established by voter approved Measure P. The land use designation under the City's General Plan includes Hillside Low Density Residential. In addition, the project area was pre-zoned Open Space (OS) District and Hillside Planned District (HPD) District by Measure P. The proposed project would amend the City's General Plan land use designations for APNs 089-050-056 and 089-020-011 from Hillside Low Density Residential to Open Space. The proposed project would also amend the Measure P pre-zone of a

portion of APN 089-050-056 from HPD District to pre-zone Open Space (OS) District with the option to provide an Agricultural Preserve Overlay.

Construction of the proposed James Donlon Boulevard extension would provide an alternate transportation route for an area of Contra Costa County that is experiencing significant traffic congestion. Access to James Donlon Boulevard would only be provided at Kirker Pass Road on the west and the existing intersection with Ventura Drive on the east, both existing roadways with existing development. No other access points would be provided for the proposed James Donlon Boulevard extension.

The change from Hillside Low Density Residential to Open Space land use designation allows for resource conservation and agricultural and resource management, which is not to exceed one housing unit per 20 acres, or one housing unit per each existing parcel. Therefore, the proposed project would reduce the amount of allowable development within the project area, thus reducing the potential for indirect population growth. The pre-zone to Open Space (OS) District, with the option to provide an Agricultural Preserve Overlay, would reduce the amount of allowable development within the project area. In addition the existing ranch would be retained and cattle grazing would continue. The construction of the proposed roadway would not result in direct population growth as it does not propose construction of new homes or businesses, nor would it extend any utilities necessary for housing or business growth such as water, sewer, natural gas, or electricity. Therefore, the proposed project is not expected to indirectly induce population growth. Impacts are considered less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than Significant Impact.

4.13 TRANSPORTATION/TRAFFIC

This section of the Environmental Impact Report (EIR) presents the analysis and findings of the traffic impact study conducted by Fehr & Peers in August 2012 for the proposed project. This section documents the existing and future traffic conditions associated with the proposed project. Traffic forecasts and operations are analyzed for Near-Term (2015) and Cumulative conditions to determine the potential impacts of the proposed project. As part of the analysis, traffic conditions have been analyzed under the following scenarios:

- **Existing (2007) Conditions:** This scenario is based on existing traffic counts.[1]
- **Near-Term (2015) No Project Conditions:** This scenario is based on year 2015 traffic volume forecasts, and assumes that a portion of the James Donlon Boulevard Extension from Somersville Road to Ventura Drive would be constructed as a four-lane arterial as part of the residential developments planned in the area.
- **Near-Term (2015) With Project Conditions:** This scenario is based on year 2015 traffic volume forecasts and assumes that the James Donlon Boulevard Extension would be constructed as a two-lane expressway between Ventura Drive and Kirker Pass Road.
- **Cumulative (2030) No Project Conditions:** This scenario is based on year 2030 traffic volume forecasts, and assumes that a portion of the James Donlon Boulevard Extension from Somersville Road to Ventura Drive would be constructed as a four-lane arterial as part of the residential developments planned in the area.
- **Cumulative (2030) With Project Conditions:** This scenario is based on year 2030 traffic volume forecasts and assumes that the James Donlon Boulevard Extension would be constructed as a two-lane expressway between Ventura Drive and Kirker Pass Road.

In order to limit the amount of commute traffic between the cities of Pittsburg and Concord, the City of Concord currently meters AM peak period traffic on westbound Kirker Pass Road at Myrtle Drive to a maximum of 1,700 vehicles per hour. Both Near-Term (2015) and Cumulative scenarios assume that the traffic metering would continue at the same rate.

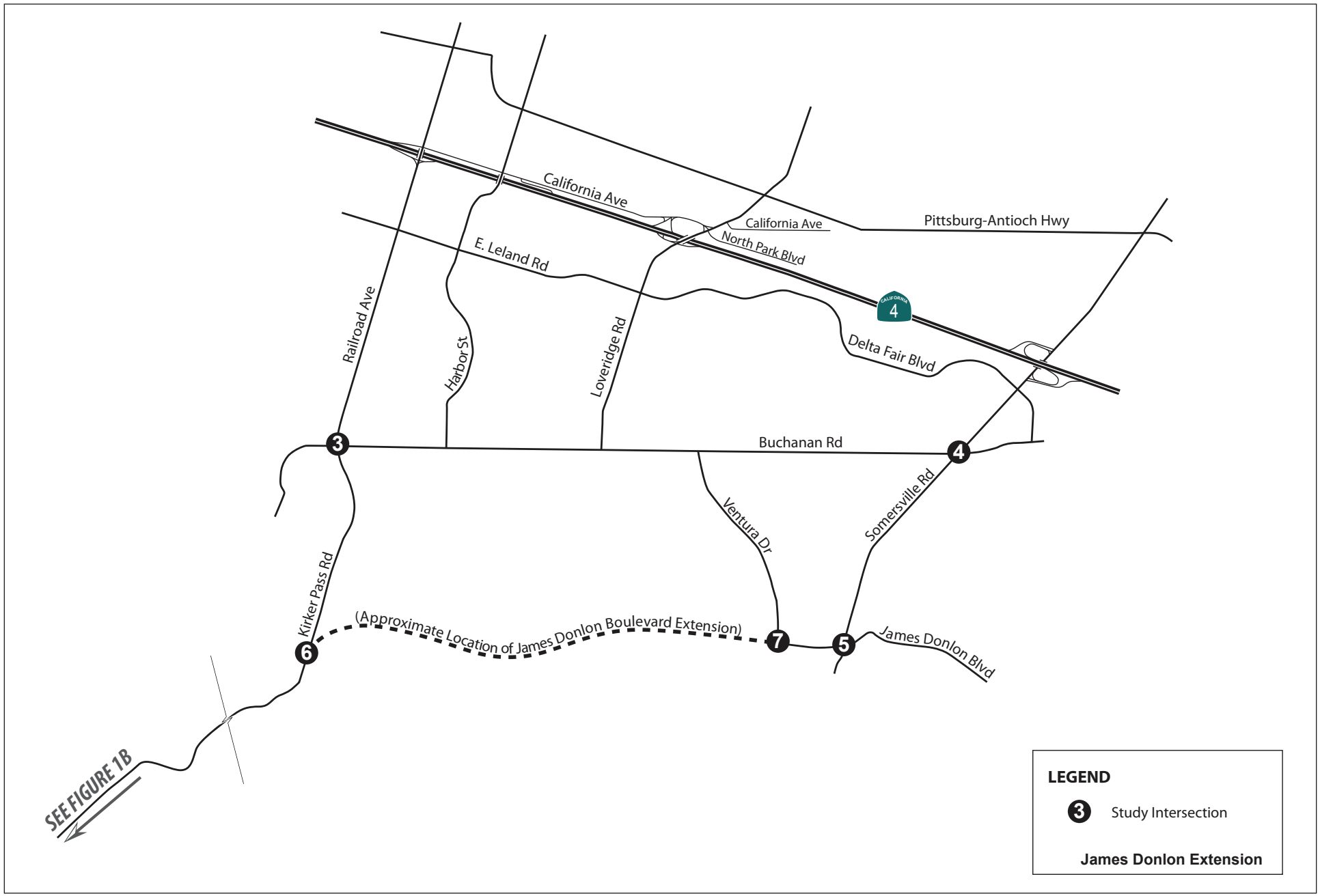
4.13.1 ENVIRONMENTAL SETTING

Figures 4.13-1a and 4.13-1b, *Project Study Area*, show the location of the proposed project and study intersections. The proposed James Donlon Boulevard Extension is located immediately south of the City of Pittsburg.

As part of this analysis, intersection operations at the following intersections were evaluated:

1. Kirker Pass Road / Concord Boulevard
2. Kirker Pass Road / Myrtle Drive
3. Buchanan Road / Kirker Pass Road / Railroad Avenue
4. Buchanan Road / Somersville Road
5. James Donlon Boulevard / Somersville Road

[1] Existing traffic counts used for this analysis were collected in 2007. However, additional counts were collected in November 2011 to determine the validity of the 2007 traffic counts. The 2011 traffic volumes are similar or slightly below the 2007 traffic volumes. Therefore, the Existing Conditions analysis based on 2007 data presented in this DEIR conservatively represents current conditions and is valid. See Appendix I for more detail.



Source: Fehr & Peers, 2012.

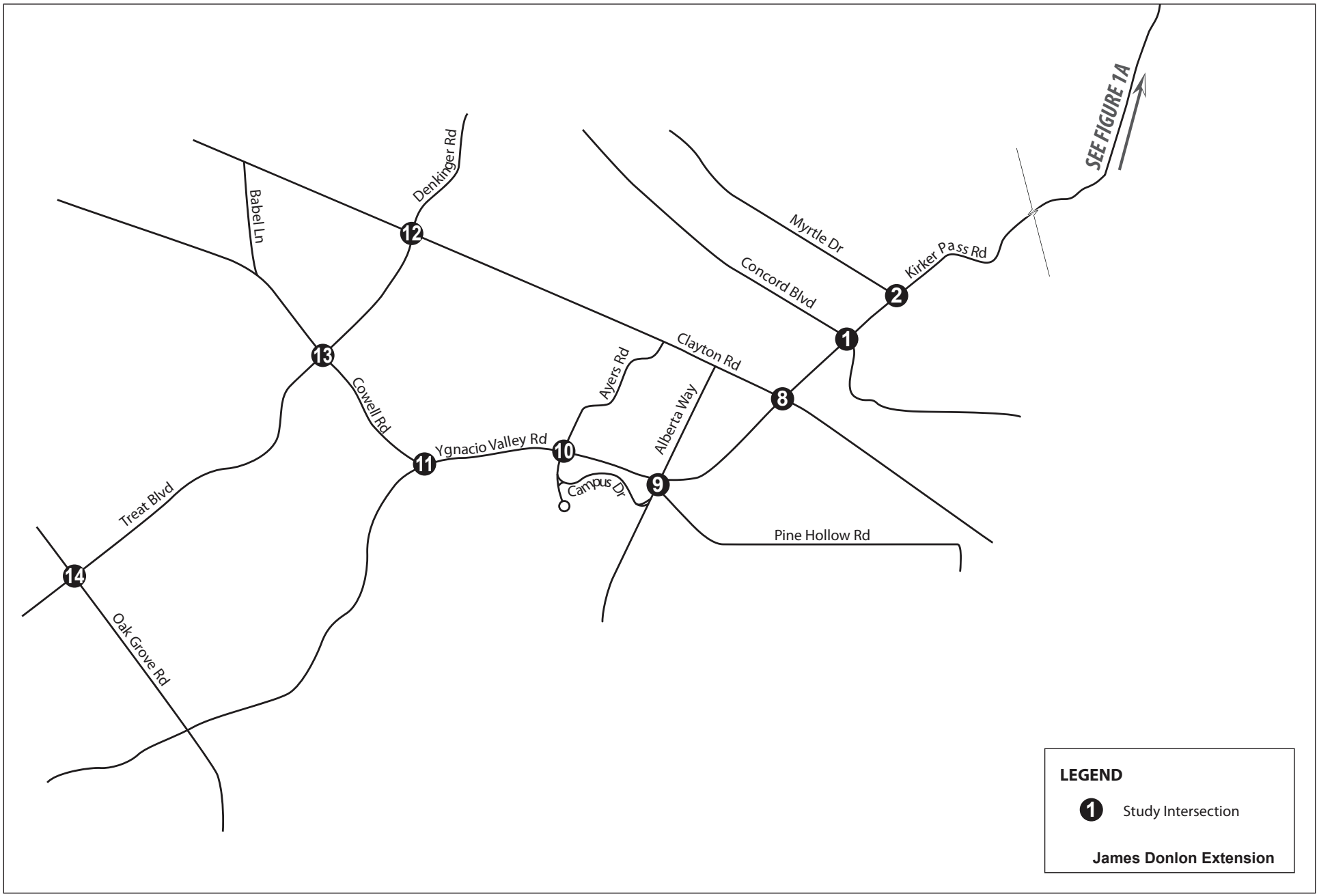
not to scale

11/28/12 JN 35-100129-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Project Study Area

Figure 4.13-1a



Source: Fehr & Peers, 2012.

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JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Project Study Area

Figure 4.13-1b

6. James Donlon Boulevard Extension / Kirker Pass Road (future scenarios only)
7. James Donlon Boulevard Extension / Ventura Drive (future scenarios only)
8. Kirker Pass Road / Ygnacio Valley Road / Clayton Road
9. Ygnacio Valley Road / Alberta Way / Pine Hollow Drive
10. Ygnacio Valley Road / Ayers Road / Campus Drive
11. Ygnacio Valley Road / Cowell Road
12. Treat Boulevard / Denkinger Road / Clayton Road
13. Treat Boulevard / Cowell Road
14. Treat Boulevard / Oak Grove Road

In addition, operations on the following roadway segments were analyzed using Delay Index (DI) as required by the *East County Action Plan for Routes of Regional Significance* (Contra Costa Transportation Authority, 2009).

- State Route 4 (SR 4) between Bailey Road and Loveridge Road
- SR 4 between Loveridge Road and Hillcrest Avenue

ANALYSIS METHODS

Traffic Volume Forecasts

The 2015 and 2030 traffic volume forecasts used in the operations analysis were developed using the Contra Costa Transportation Authority (CCTA) Decennial Update Countywide Travel Demand Model. Land use reflected the latest (spring 2007) updates to the model. These updates reflect an extensive countywide land use review completed by CCTA and local jurisdictions in 2006-07 to create a set of land use data consistent with Association of Bay Area Governments' (ABAG) *Projections 2005*. Both Near-Term (2015) and Cumulative scenarios assumed that a series of planned and funded roadway improvements in the City of Pittsburg and eastern Contra Costa County will be completed by 2015 and 2030, respectively.[2]

Major roadway improvements assumed to be completed for the Near-Term (2015) conditions analysis include:

- Completion of the SR 4 Bypass as a six-lane freeway between State Route 160 (SR 160) and Laurel Road, a four-lane freeway between Laurel Road and Lone Tree Way, and a two-lane expressway between Lone Tree Way and Vasco Road, with ramps connecting the SR 4 Bypass with existing SR 4 but no ramps connecting the SR 4 Bypass with SR 160[3]
- Widening of the SR 4 freeway to provide three mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction west of Hillcrest Avenue, and three mixed-flow lanes in each direction between Hillcrest Avenue and the SR 4 Bypass

[2] The land use database in the CCTA model has been updated since the completion of the 2007 analysis to reflect the more recently published ABAG *Projections 2009*. The more recent forecasts extend five more years to 2035; however, compared to the 2030 forecasts based on *Projections 2005* and used in this analysis, the more recent CCTA model shows less growth in traffic volumes than the older model used in this EIR. Therefore, the 2015 and 2035 forecasts based on *Projections 2005* and presented in this EIR represent conservative conditions and remain valid. See Appendix I for more detail.

[3] Although this facility was opened in January 2008, it is reflected in future analyses only because existing (2007) traffic counts were collected prior to its opening. The 2011 traffic volumes are similar or slightly below the 2007 traffic volumes. Therefore, the Existing Conditions analysis based on 2007 data presented in this EIR conservatively represents current conditions and remains valid.

- Widening of California Avenue to a four-lane arterial between Loveridge Road and Harbor Street
- At the Treat Boulevard / Denkinger Road / Clayton Road intersection (intersection #12), modifying the northbound Treat Boulevard approach from one left-turn lane, one shared left-through lane, one through lane, and one right-turn lane to two left-turn lanes, two through lanes, and one right-turn lane. This intersection signal would also be modified to provide eight-phase operations.

Major roadway improvements assumed to be completed for the Cumulative (2030) conditions analysis include, in addition to the above:

- Completion of the ramps connecting the SR 4 Bypass with SR 160
- Widening of California Avenue to a four-lane arterial between Harbor Street and Railroad Avenue
- Widening of Pittsburg-Antioch Highway to a four-lane arterial between Somersville Road and Loveridge Road
- Widening of Somersville Road to a four-lane arterial between Buchanan Road and James Donlon Boulevard
- Widening of Ygnacio Valley Road to a six-lane arterial between Clayton Road and Cowell Road

The CCTA model was executed for years 2005, 2015 and 2030 and the results were used to develop intersection turning movement volumes through the "Furnessing" technique as described in CCTA's Technical Procedures in June 2006. "Furnessing" is an iterative process which develops future turning movement volumes by applying the difference between the base model volumes and the existing intersection counts to future model approach and departure volumes.

For both 2015 and 2030, the model was run under both "No Project" and "With Project" conditions. The only difference between the two runs for each year was that the "With Project" conditions included the addition of the James Donlon Boulevard Extension as a two-lane expressway between Ventura Drive and Kirker Pass Road.

Intersection Operations Analysis

Study intersection operations were evaluated using level of service (LOS) calculations. As required for compliance with the County's Congestion Management and Growth Management programs, the analysis method outlined in *Technical Procedures Update* prepared by the CCTA in July 2006, known as CCTALOS, was utilized to analyze all signalized study intersections.[4] To augment this analysis, the Transportation Research Board's 2000 *Highway Capacity Manual* (HCM) method and Synchro software were also used to analyze intersection operations at unsignalized study intersections and for some of the signalized intersections. This type of supplemental analysis is explicitly allowed in CCTA's *Technical Procedures* as the two methods are different in estimating intersection LOS. Both methods are described in more detail below.

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). LOS is a description of a transportation facility's operation, ranging from LOS A, indicating free-flow traffic conditions with little

[4] CCTA adopted new Technical Procedures for their Growth Management Program in January 2013. The new procedures utilize the HCM method to determine intersection LOS. However, these new procedures also allow for any studies started prior to January 2013 to continue to use the methods outlined in the *Technical Procedures Update* from July 2006. Therefore, the CCTALOS remains appropriate for this project.

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.

Signalized Intersections

At each signalized study intersection among intersections 1 through 7, as defined above, traffic conditions were evaluated using the CCTALOS and HCM methods. At intersections 8 through 14, as described above, only the CCTALOS method was used. 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 4.13-1, *Signalized Intersection LOS Criteria*, summarizes the relationship between the V/C ratio, delay, and LOS for signalized intersections.

Table 4.13-1
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.

Sources: *Technical Procedures,* Contra Costa Transportation Authority, 1997, *Highway Capacity Manual*, Transportation Research Board, 2000.

Unsignalized Intersections

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the method outlined in Chapter 17 of the Transportation Research Board's 2000 HCM was used. This method estimates the worst-approach total delay (measured in seconds per vehicle) experienced by motorists traveling through an intersection. 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 4.13-2*, Unsignalized Intersection LOS Criteria*, summarizes the relationship between the delay and LOS for unsignalized intersections. Traffix software was used to calculate HCM-based LOS for unsignalized intersections.

Table 4.13-2
Unsignalized Intersection LOS Criteria

LOS	HCM Average Control Delay per Vehicle (seconds)	Description
A	≤ 10.0	No delay for stop-controlled approaches.
B	10.1 to 15.0	Operations with minor delay.
C	15.1 to 25.0	Operations with moderate delay.
D	25.1 to 35.0	Operations with long delays for some movements.
E	35.1 to 50.0	Operations with high delays and long queues.
F	> 50.0	Operations with extreme congestion, with very high delays and long queues.
Source: *Highway Capacity Manual*, Transportation Research Board, 2000.		

Delay Index and Travel Speed

The *East County Action Plan* and the *Central County Action Plan* (CCTA, 2009) establish Multimodal Transportation Service Objectives (MTSOs) for routes of regional significance in eastern and central Contra Costa County, respectively. The routes selected for analysis include roadways in both the City of Pittsburg and the City of Concord, which are included in the *East County Action Plan* and the *Central County Action Plan*, respectively.

One MTSO used to measure freeway operations in both plans is peak hour Delay Index (DI). A DI is defined as the ratio of the peak hour congested travel time to free-flow travel time on each roadway segment. For example, a DI of 2.0 means that it takes twice as long to travel a particular segment during the peak commute hour than during non-commute hours when traffic moves at free-flow speeds.

Objectives for relevant routes include a DI of 2.5 for the SR 4 freeway in the East County.

EXISTING ROADWAY SYSTEM

The following major roadways provide vehicular access in the study area:

Pittsburg-Antioch Highway is a two-lane undivided arterial that runs east-west between Somersville Road and Harbor Street.

State Route 4 (SR 4) is an east-west freeway that serves as the main access between eastern Contra Costa County and Interstate 680 (I-680) and Interstate 80 (I-80) to the west. SR 4 provides three mixed-flow lanes and one HOV lane in each direction west of Loveridge Road and two mixed-flow lanes in each direction to the east. In 2010, SR 4 had an average daily traffic (ADT) volume of about 115,000 vehicles between the Railroad Avenue and Loveridge Road interchanges.

West Leland Road/East Leland Road/Delta Fair Boulevard is a four-lane east-west divided arterial between Somersville Road and Bailey Road just south of SR 4.

Buchanan Road is a two-lane east-west arterial that connects Contra Loma Boulevard in Antioch to Railroad Avenue in Pittsburg. Buchanan Road had an ADT of about 21,400 vehicles between Loveridge Road and Meadows Avenue in 2006.

Railroad Avenue/Kirker Pass Road/Ygnacio Valley Road is a four-to six-lane divided arterial that is north-south within Pittsburg, northeast-southwest in part of Concord, and east-west through most of Concord and Walnut Creek, terminating at I-680 in Walnut Creek. The roadway is called Railroad Avenue within the City of Pittsburg, Kirker Pass Road between Pittsburg and Concord and through part of Concord, and Ygnacio Valley Road through most of Concord and through Walnut Creek. Railroad Avenue had an ADT of about 14,200 vehicles between Buchanan Road and Atlantic Avenue in 2006 and Kirker Pass Road an ADT of about 21,300 between the Pittsburg City Limit and Buchanan Road in 1997.

Somersville Road is a north-south arterial that extends between the Pittsburg-Antioch Highway and the area south of James Donlon Boulevard. Somersville Road is a four- to six-lane divided arterial north of Buchanan Road and narrows to a two-lane undivided arterial south of Buchanan Road. Somersville Road had an ADT of about 29,100 vehicles within the Pittsburg City Limit in 2000.

James Donlon Boulevard is a four-lane divided arterial that extends east-west between Lone Tree Way in Antioch and Somersville Road.

Myrtle Drive is a two-lane northwest-southeast minor arterial within Concord between Bailey Road and Kirker Pass Road, parallel to Concord Boulevard. The Myrtle Drive /Kirker Pass Road intersection marks the point where the city of Concord meters incoming (southwest-bound) traffic to about 1,700 vehicles per hour during the AM peak period.

Concord Boulevard is a four-lane arterial that extends east-west in downtown Concord, and turns to run northwest-southeast in eastern Concord. It intersects Kirker Pass Road and terminates about a mile southeast at Clayton Road.

Treat Boulevard is a four-lane arterial that extends northeast-southwest through Concord and Walnut Creek. It extends between Clayton Road in Concord at the northeast end, and I-680 in Walnut Creek.

Clayton Road is a four-lane arterial that extends northwest-southeast through Concord, between downtown Concord, Ygnacio Valley Road, and the City of Clayton to the southeast.

This study assumes Kirker Pass Road / Ygnacio Valley Road and Treat Boulevard as east-west roadways, and all roadways crossing them, including Clayton Road, as north-south roadways.

Traffic Data Collection

Peak period intersection turning movement counts were conducted from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM during June 2007 and November 2007, while local schools were in normal session, at the 12 existing study intersections.

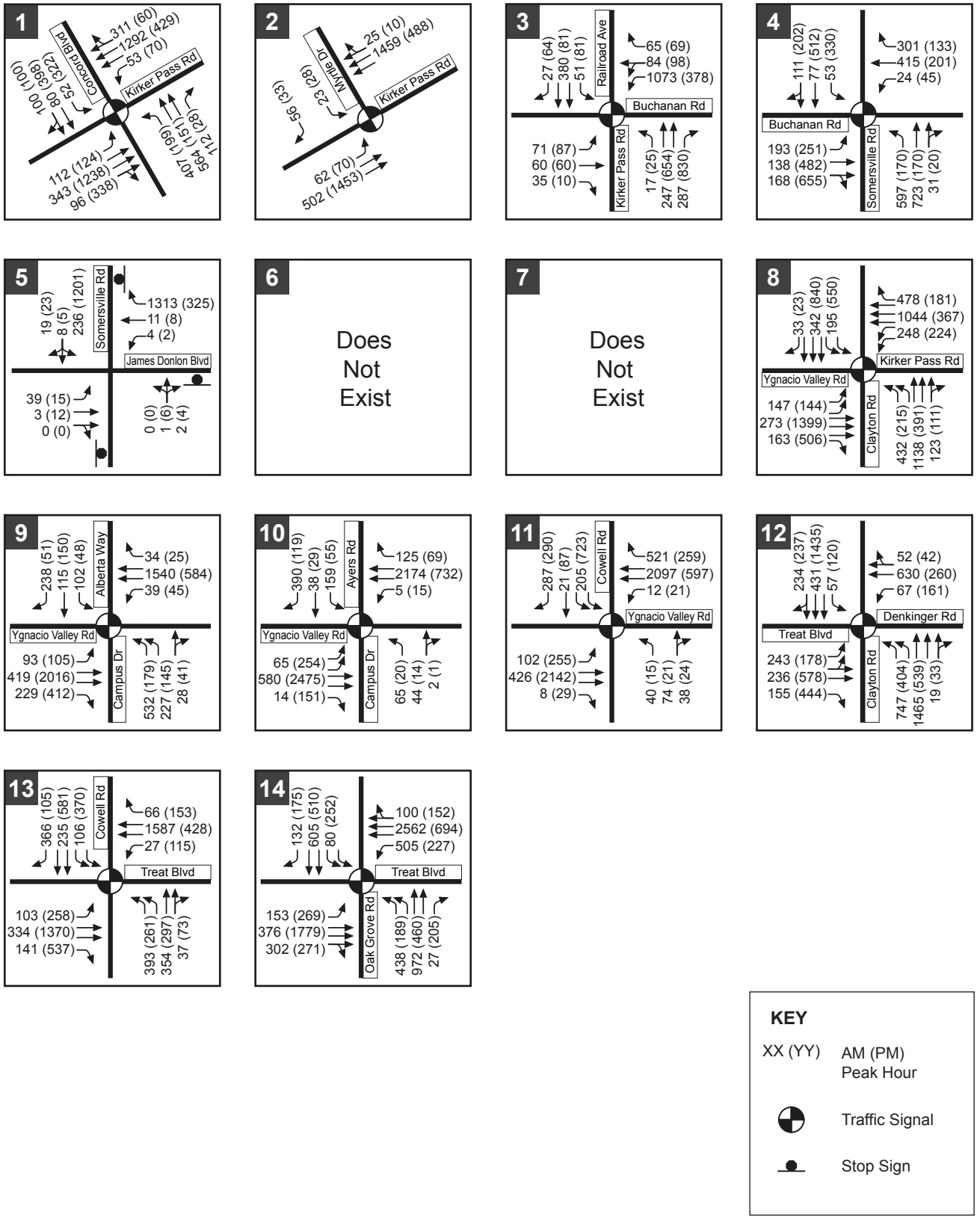
Based on the collected counts, the weekday morning peak hour generally occurs between 7:00 AM and 8:00 AM, and the evening peak hour generally occurs between 5:00 PM and 6:00 PM. Figure 4.13-2, *Existing Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control*, presents the existing intersection peak hour turning movements, intersection lane configurations, and traffic controls. The detailed count sheets are provided in Appendix I.

Intersection Operations Analysis

Intersection operations were evaluated for the weekday AM and PM peak hours at the 12 existing study intersections. Tables 4.13-3, *Existing Conditions Intersection Peak Hour Summary (CCTALOS)*, and 4.13-4, *Existing Conditions Intersection Peak Hour LOS Summary (HCM)*, summarize the analysis results using CCTALOS and HCM methods, respectively. The detailed intersection LOS calculation worksheets are presented in Appendix I.

The East-Central Traffic Management Study was completed by CCTA in August 2001 and adopted by Contra Costa County and cities of Antioch, Pittsburg, Concord, and Walnut Creek. The study recommends control point metering at the following intersections to reduce congestion and improve traffic operations at downstream intersections: westbound Buchanan Road at Meadows Avenue, westbound James Donlon Boulevard Extension at Ventura Drive, southbound Kirker Pass Road at Nortonville Road and Myrtle Drive, and westbound Ygnacio Valley Road at Oak Grove Road. Metering is currently implemented at the two locations in Central County (i.e., Kirker Pass Road at Myrtle Drive and Ygnacio Valley Road at Oak Grove Road). The analysis presented in this EIR accounts for the current metering at the intersections in Central County.

As shown in Tables 4.13-3 and 4.13-4, most study intersections operate at LOS D or better during both AM and PM peak hours. Using the CCTALOS method, the Ygnacio Valley Road / Ayers Road and Treat Boulevard / Oak Grove Road intersections operate at LOS E during the AM peak hour, and the Ygnacio Valley Road / Cowell Road intersection operates at LOS E during the PM peak hour. Using the HCM method, the unsignalized James Donlon Boulevard / Somersville Road intersection operates at LOS F during both AM and PM peak hours, and the Buchanan Road / Somersville Road intersection operates below LOS "mid-D," which is a deficient LOS according to the City of Pittsburg General Plan, during the AM peak hour.



Source: Fehr & Peers, 2012.

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Existing Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

11/28/12 JN 130944-18838 MAS

Figure 4.13-2

Table 4.13-3
Existing Conditions
Intersection Peak Hour Summary (CCTALOS)

Intersection	Control	Peak Hour	V/C Ratio1	LOS
1. Kirker Pass Road / Concord Boulevard	Signal	AM PM	0.70 0.65	B B
2. Kirker Pass Road / Myrtle Drive	Signal	AM PM	0.34 0.44	A A
3. Buchanan Road / Kirker Pass Road / Railroad Avenue	Signal	AM PM	0.55 0.64	A B
4. Buchanan Road / Somersville Road	Signal	AM PM	0.80 0.74	C C
8. Kirker Pass Road / Ygnacio Valley Road / Clayton Road	Signal	AM PM	0.59 0.64	A B
9. Ygnacio Valley Road / Alberta Way / Pine Hollow Drive	Signal	AM PM	0.79 0.79	C C
10. Ygnacio Valley Road / Ayers Road / Campus Drive	Signal	AM PM	**0.94** 0.80	E C
11. Ygnacio Valley Road / Cowell Road	Signal	AM PM	0.83 **0.93**	D E
12. Treat Boulevard / Denkinger Road / Clayton Road	Signal	AM PM	0.70 0.75	C C
13. Treat Boulevard / Cowell Road	Signal	AM PM	0.83 0.75	D C
14. Treat Boulevard / Oak Grove Road	Signal	AM PM	**0.96** 0.78	E C

Source: Fehr & Peers, 2012.
Bold indicates intersection operating at deficient level of service. Intersections 6 and 7 are future intersections resulting from the proposed project and are not analyzed under existing conditions.
1. Volume-to-capacity ratio (V/C) determined for all signalized intersections using the CCTALOS method.

Table 4.13-4
Existing Conditions
Intersection Peak Hour LOS Summary (HCM)

Intersection	Control	Peak Hour	Delay (Seconds)1	LOS
1. Kirker Pass Road / Concord Boulevard	Signal	AM PM	52 48	D D
2. Kirker Pass Road / Myrtle Drive	Signal	AM PM	39 37	D D
3. Buchanan Road / Kirker Pass Road / Railroad Avenue	Signal	AM PM	26 24	C C
4. Buchanan Road / Somersville Road	Signal	AM PM	50 40	D D
5. James Donlon Boulevard / Somersville Road	Side-Street Stop-controlled	AM PM	>60 (WB) >60 (EB)	F F

Intersection	Control	Peak Hour	Delay (Seconds)1	LOS
Source: Fehr & Peers, 2012. **Bold** indicates intersection operating at deficient level of service. Intersections 6 and 7 are future intersections resulting from the proposed project and are not analyzed under existing conditions. 1. Average intersection for signalized and unsignalized intersections is calculated using the 2000 *Highway Capacity Manual* (HCM) methods. For side-street stop-controlled intersections, delay for worst approach (in seconds per vehicle) is presented.				

As shown in Tables 4.13-3 and 4.13-4, the CCTALOS and HCM methods can sometimes produce different results. The primary reason is that the CCTALOS method analyzes each intersection independently and calculates LOS based on the theoretical capacity of each movement at the intersection, while LOS in the HCM method is based on the delay experienced by each vehicle depending on physical and operational characteristics of the intersection including signal timing and phasing. For example, the Kirker Pass Road / Myrtle Drive intersection during the AM peak hour operates at LOS A using the CCTALOS method, and LOS D using the HCM method. Unlike the CCTALOS method, the HCM method accounts for the delay caused by the metering of the westbound traffic into City of Concord.

DELAY INDEX

Existing operations along freeways were evaluated for the weekday AM and PM peak hours using the Delay Index measure described earlier. Traffic operations along routes of regional significance are periodically monitored and reported by CCTA as part of its Congestion Management Program (CMP). The most recent monitoring is documented in the *Traffic Service Objective Monitoring Report* (CCTA, 2007). As shown in Table 4.13-5 (Existing Conditions Delay Index Summary), SR 4 currently satisfies the MTSO.

Table 4.13- 5
Existing Conditions
Delay Index Summary

Roadway Segment	Peak Hour	TSO	Delay Index	
			Eastbound	Westbound
SR 4 between Bailey Road and Loveridge Road	AM PM	2.5 2.5	N/A 1.2	1.7 N/A
SR 4 between Loveridge Road and Hillcrest Avenue	AM PM	2.5 2.5	N/A 1.4	1.4 N/A
Source: *Traffic Service Objective Monitoring Report* (CCTA, 2007) Results in **bold** represent segments exceeding established MTSO N/A = delay index not reported by CCTA.				

TRANSIT

Tri-Delta Transit serves Eastern Contra Costa County, including the cities of Pittsburg and Antioch. The County Connection serves western and central Contra Costa County, including the City of Concord. Within the project study area, Tri-Delta Transit operates Routes 380 and 390 along parts of Buchanan Road. Route 380 passes through the Buchanan Road / Railroad Avenue intersection, and Route 390 passes through the Buchanan Road / Somersville Road intersection. Routes 380 and 390 provide service between the Pittsburg / Bay Point BART Station and the cities of Brentwood and Antioch, respectively.

In addition, County Connection, the transit service operator in central Contra Costa County, operates Route 93X along the entire lengths of Buchanan Road and Kirker Pass Road, Routes 10 and 314 along Clayton Road, and Route 15 along Treat Boulevard. Route 93X operates between the Walnut Creek BART Station and the Hillcrest Park and Ride lot in Antioch; Routes 10 and 314 operate between the

eastern Concord / Clayton area and the Concord BART station; and Route 15 operates between northeast Concord and the Pleasant Hill BART station.

PEDESTRIAN AND BICYCLE SYSTEMS

According to Caltrans guidelines, bicycle facilities are generally divided into three categories:

- **Class I Bikeway (Bike Path)** – A completely separate facility designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.
- **Class II Bikeway (Bike Lane)** – A striped lane designated for the use of bicycles on a street or highway. Vehicle parking and vehicle/pedestrian cross-flow are permitted at designated locations.
- **Class III Bikeway (Bike Route)** – A route designated by signs or pavement marking for bicyclists within the vehicular travel lane (i.e. shared use) of a roadway.

In Pittsburg, Buchanan Road provides Class II lanes. Class III bike routes also exist on Kirker Pass Road between Railroad Avenue and the southern Pittsburg city limits, with no plans for modification.
In Concord, several Class I bike facilities currently exist, providing some connections between different areas of the City. The *City of Concord Trails Master Plan* proposes several new Class III bike routes throughout the City, including the entire length of Concord Boulevard, Ayers Drive, Cowell Road, and Ygnacio Valley Road between Alberta Way and Cowell Road. Combined with the existing facilities, these routes would provide a citywide bike network.

The *2009 Contra Costa Countywide Bicycle and Pedestrian Plan* proposes to provide Class II bicycle lanes on Kirker Pass Road in Unincorporated Contra Costa County between Pittsburg and Concord City limits.

Most streets in Pittsburg and Concord provide sidewalks on both sides with signals and crosswalks at signalized intersections to accommodate pedestrian circulation. All major streets in the Pittsburg section of the study area have pedestrian facilities, with the exception of Kirker Pass Road between the Pittsburg and Concord city limits, which is largely rural and undeveloped. In the Concord section of the study area, Clayton Road and Cowell Road provide continuous pedestrian facilities, but sidewalks are intermittent along Treat Boulevard, and Ygnacio Valley Road does not provide any sidewalks between Cowell Road and Clayton Road.

4.13.2 REGULATORY SETTING

STATE

California Department of Transportation

The California Department of Transportation (Caltrans) has jurisdiction over State highways. Caltrans enforces safety accommodations for vehicular and non-vehicular traffic as well as sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance" (California Code of Regulations [CCR],

Title 14, § 15382, 2010). According to State CEQA Guidelines, a project results in a significant impact if the project would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- 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.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

LOCAL

City of Pittsburg General Plan

The Traffic and Circulation Element of the City of Pittsburg General Plan (City General Plan) includes the following goals and policies pertinent to consideration of the proposed James Donlon Boulevard Extension:

Levels of Service

Goal 7-G-1 Achieve service level standards for roadway intersections that are based on the roadway's classification and location shown in Figure 7-2 (in the General Plan).

Policy 7-P-8 Ensure that all non-Regional Routes within the City (not designated as Routes of Regional Significance in Figure 7-2 in the General Plan) maintain the following traffic levels of service (LOS) standards based on their location in rural, semi-rural, suburban, urban, or downtown areas, as designated in Figure 7-2 (in the General Plan).

- Rural – LOS low C (peak hour volume to capacity [V/C] ratio less than or equal to 0.74)
- Semi-Rural – LOS high C (peak hour V/C ratio 0.75 to 0.79)
- Suburban– LOS low D (peak hour V/C ratio 0.80 to 0.84)
- Urban – LOS high D (peak hour V/C ratio 0.85 to 0.89)
- Downtown (CBD) – LOS high D (peak hour V/C ratio 0.85 to 0.89)

Goal 7-G-5 Provide adequate capacity of arterial roadways to meet LOS standards and to avoid traffic diversion to local roadways or the freeway.

Goal 7-P-6 Design roadway improvements and evaluate development proposals based on Level of Service standards set forth in Goal 7-G-1.

Circulation and Access

Goal 7-G-6 Locate high traffic-generating uses so that they have direct access or immediate access to arterial roadways.

Policy 7-P-21 Design local residential streets and implement traffic control measures to keep traffic below 5,000 vehicles per day, where possible.

Policy 7-P-22 Avoid adding traffic to roadways carrying volumes above the standards, and consider traffic control measures where perceived nuisance is severe.

Implementation of Improvements

Goal 7-G-7 Complete arterial roadway improvements required to mitigate traffic impacts of an approved project before the project is fully occupied. Arterial improvements should be completed by creating funding sources, which include but are not limited to Traffic Mitigation Fees, Development Agreements, and Assessment Districts.

Policy 7-P-1 Require mitigation for development proposals that are not part of the Traffic Mitigation Fee Program which contribute more than one percent of the volume to an existing roadway or intersections with inadequate capacity to meet cumulative demand.

Policy 7-P-2 Use the adopted Regional and Local Transportation Impact Mitigation Fee ordinances to ensure that all new development pays an equitable pro-rata share of the cost of transportation improvements. Review the Traffic Impact Mitigation Fee schedule annually and update every five years at a minimum.

Bicycles and Pedestrians

Policy 7-P-33 Require mitigation for development proposals which result in potential conflicts, or fail to provide adequate access, for pedestrians and bicycles.

Policy 7-P-34 As part of development approval, ensure that safe and contiguous routes for pedestrians and bicyclists are provided within new development projects.

Policy 7-P-38 Develop a series of continuous pedestrian systems within Downtown and residential neighborhoods, connecting major activity centers and trails with City and County open space areas.

Policy 7-P-43 Provide adequate roadway width dedications for bicycle lanes, paths, and routes.

Policy 7-P-52 Require that new arterial and collector streets accommodate bicyclists.

City of Antioch General Plan

The City of Antioch borders the Pittsburg area to the east. Two of the study intersections evaluated in this EIR, Buchanan Road / Somersville Road and James Donlon Boulevard / Somersville Road, are located in Antioch. Section 3.4.1 of the City of Antioch General Plan states that development projects that may impact regional routes are required to comply with adopted Action Plans. Since Buchanan Road, Somersville Road and James Donlon Boulevard are all officially designated as Routes of Regional Significance in the Antioch General Plan, the East County Action Plan can be used to determine the MTSOs along these routes.

City of Concord General Plan

The City of Concord borders the Pittsburg area to the south. Nine of the study intersections evaluated in this EIR are located in Concord. The Growth Management and Transportation and Circulation Elements of the Concord 2030 Urban Area General Plan include the following policies pertinent to consideration of the proposed James Donlon Boulevard Extension:

Policy GM-1.3.1 The following standards apply to signalized intersections on Basic Routes (all roads not indicated as Routes of Regional Significance):

- Rural – LOS low C (V/C ratio 0.70 to 0.74)
- Semi-Rural – LOS high C (V/C ratio 0.75 to 0.79)
- Suburban– LOS low D (V/C ratio 0.80 to 0.84)
- Urban – LOS high D (V/C ratio 0.85 to 0.89)
- Downtown (CBD) – LOS low E (V/C ratio 0.90 to 0.94)

Since the above classifications refer to areas of the community rather than streets passing through such areas, the City of Concord has also established the following LOS standards dependent upon the largest street at each intersection:

- Collector – LOS high C (V/C ratio 0.75 to 0.79)
- Minor Arterial – LOS low D (V/C ratio 0.80 to 0.84)
- Major Arterial – LOS high D (V/C ratio 0.85 to 0.89)

Although Kirker Pass Road / Ygnacio Valley Road, Clayton Road, and Treat Boulevard are all indicated as Routes of Regional Significance, there are no MTSOs in the Central County Action Plan related to intersection LOS along those facilities. Since these roads are best described as major arterials, the MTSO applied to the intersections along these roads in Concord is LOS high D.

Contra Costa County General Plan

The segment of Kirker Pass Road between the Cities of Pittsburg and Concord is in Contra Costa County. The Growth Management Element of the Contra Costa County General 2005-2020 established the same LOS standard for signalized intersections along Basic Routes as previously described in City of Concord and City of Pittsburg General Plans.

Contra Costa Transportation Authority (CCTA)

The first Congestion Management Program (CMP) for Contra Costa County was adopted in 1991 and has been updated every two years. The most recent update is the 2009 CMP. The CMP is administered by

the Contra Costa Transportation Authority (CCTA). The CMP specifies that the transportation system within the County be monitored biennially for compliance with LOS standards. The LOS standard for the County CMP facilities has been set at LOS E for all roadways except those that were operating at LOS F when the first CMP was prepared. The CMP transportation system includes all of the state routes in the County and other Routes of Regional Significance.

The 2009 update of the Countywide Comprehensive Transportation Plan includes Action Plans for each sub-area within Contra Costa County. These Action Plans include planned improvements and MTSOs for Routes of Regional Significance. The following MTSOs are applicable in the study area:

East County

The current *East County Action Plan* establishes the following roads near the project area as Routes of Regional Significance:

- SR 4
- Railroad Avenue
- Leland Road / Delta Fair Boulevard
- Buchanan Road
- Somersville Road
- James Donlon Boulevard
- Kirker Pass Road
- Proposed James Donlon Boulevard Extension

The action plan sets forth MTSOs for these routes:

- For SR 4, the MTSOs include a maximum Delay Index of 2.5.
- For signalized intersections along all roads above, the MTSOs include a Level of Service Mid-D or better (traffic no greater than 85 percent of design capacity).

Central County

The current *Central County Action Plan* establishes the following roads near the project site as Routes of Regional Significance:

- I-680 - the MTSOs include a maximum Delay Index of 4.0.
- SR 242 - the MTSOs include a maximum Delay Index of 3.0.
- SR 4 - the MTSOs include a maximum Delay Index of 5.0.
- Kirker Pass Road / Ygnacio Valley Road - the MTSOs include an average stopped delay (i.e., number of signal cycles to clear) of:
  - Three signal cycles at the Kirker Pass Road / Ygnacio Valley Road / Clayton Road intersection.
  - Four cycles at the Ygnacio Valley Road / Alberta Way / Pine Hollow Drive intersection.
  - Five cycles at the Ygnacio Valley Road / Cowell Road intersection.
- Clayton Road - the MTSOs include an average stopped delay of three signal cycles at the Kirker Pass Road / Ygnacio Valley Road / Clayton Road and Treat Boulevard / Denkinger Road / Clayton Road intersections.

- Treat Boulevard - the MTSOs include an average stopped delay of:
  - Three signal cycles at the Treat Boulevard / Denkinger Road / Clayton Road intersection
  - Five cycles at the Treat Boulevard / Cowell Road and Treat Boulevard / Oak Grove Road intersections.

4.13.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

Based on the adopted policies of CCTA, Contra Costa County, the cities of Pittsburg, Antioch, and Concord, and Appendix G of the State CEQA Guidelines, a significant traffic impact would occur if the addition of project-related traffic would result in any of the effects listed below:

- Operations of a signalized study intersection to decline from an acceptable level to an unacceptable level; refer to Table 4.13-6, *Study Intersection LOS Thresholds*
- 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 intersection delay of more than 5 seconds
- 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)
- Operations of a roadway segment to exceed the established Delay Index standard
- Deterioration in a roadway segment that already exceeds the established Delay Index standard by increasing the roadway volume by more than one percent
- Substantially increased hazards or congestion due to a design feature (e.g., sharp curves) or incompatible uses (e.g., farm equipment)
- Inadequate emergency access
- Conflicts with adopted alternative transportation policies, plans, or programs

Table 4.13-6
Study Intersection LOS Thresholds

Study Location	LOS Threshold	Source
Signalized intersections along Major Arterials in Concord • Kirker Pass Road / Concord Boulevard • Kirker Pass Road / Myrtle Drive • Kirker Pass Road / Ygnacio Valley Road / Clayton Road • Ygnacio Valley Road / Alberta Way / Pine Hollow Drive • Ygnacio Valley Road / Ayers Road / Campus Drive • Ygnacio Valley Road / Cowell Road • Treat Boulevard / Denkinger Road / Clayton Road • Treat Boulevard / Cowell Road • Treat Boulevard / Oak Grove Road	LOS D (Avg. Delay = 55 sec. or V/C = 0.89)	*City of Concord General Plan*

Study Location	LOS Threshold	Source
Intersections along other Routes of Regional Significance in East County • Buchanan Road / Kirker Pass Road / Railroad Avenue • Buchanan Road / Somersville Road • James Donlon Boulevard / Somersville Road • James Donlon Boulevard Extension / Kirker Pass Road • James Donlon Boulevard Extension / Ventura Drive	LOS mid-D (Avg. Delay = 45 sec. V/C = 0.85)	*East County Action Plan for Routes of Regional Significance(August 2009)*[1]

Sources: CCTA, City of Pittsburg, City of Antioch, and City of Concord, 2007

1. According to the 2009 East County Action Plan, intersections along select arterials in East County are subject to Traffic Management Program (TMP) strategies such as single-point metering to improve overall traffic flow. During TMP operation periods, the V/C-based MTSOs would not apply and other performance measures may be used to evaluate traffic operations. However, these performance measures have not been established. Based on the East-Central Traffic Management Study, the only study intersection in East County subject to future TMP would be the proposed James Donlon Boulevard Extension/Venture Drive intersection.

AREAS OF NO PROJECT IMPACT

The following impacts either are not applicable to the proposed project or are not reasonably foreseeable:

- The proposed project would result in inadequate emergency access.

The proposed project would not impair or interfere with an emergency access. The proposed project would provide a connection from Somersville Road to Kirker Pass Road, which would create an alternative to SR 4 as an east-west route from Concord to Antioch. This would assist emergency preparedness and evacuation capabilities. In addition, the proposed project would provide access to the surrounding open space for fire suppression agencies only. Therefore, the proposed project would have no impact on emergency access.

- The proposed project would conflict with adopted transportation policies, plans, or programs.

The proposed project was previously referred to as the Buchanan Road Bypass in various planning documents, including the City General Plan, the County General Plan, and the East Contra Costa Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP). The City General Plan identifies the proposed project as a "Route of Regional Significance" and shows it in four Land Use Element figures (City General Plan Figure 2-3, Planning Boundaries, Figure 2-4, Planning Subareas, Figure 2-4h, Woodlands, and Figure 2-4o, Black Diamond). The County General Plan identifies the proposed project and shows it in one figure (Figure 4-3, *Routes of Regional Significance*). The proposed project would provide an additional east-west connection through the region, is identified within several existing plans, and therefore, would not conflict with adopted transportation policies, plans, or programs. The proposed project would help to improve east-west movement through the area.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Near-Term (2015) Traffic Impacts

♦ ***THE PROPOSED PROJECT COULD RESULT IN A DECLINE OF THE LEVEL OF SERVICE TO UNACCEPTABLE LEVELS AT INTERSECTIONS WITHIN THE STUDY AREA.***

Level of Significance: Less Than Significant Impact.

Impact Analysis:

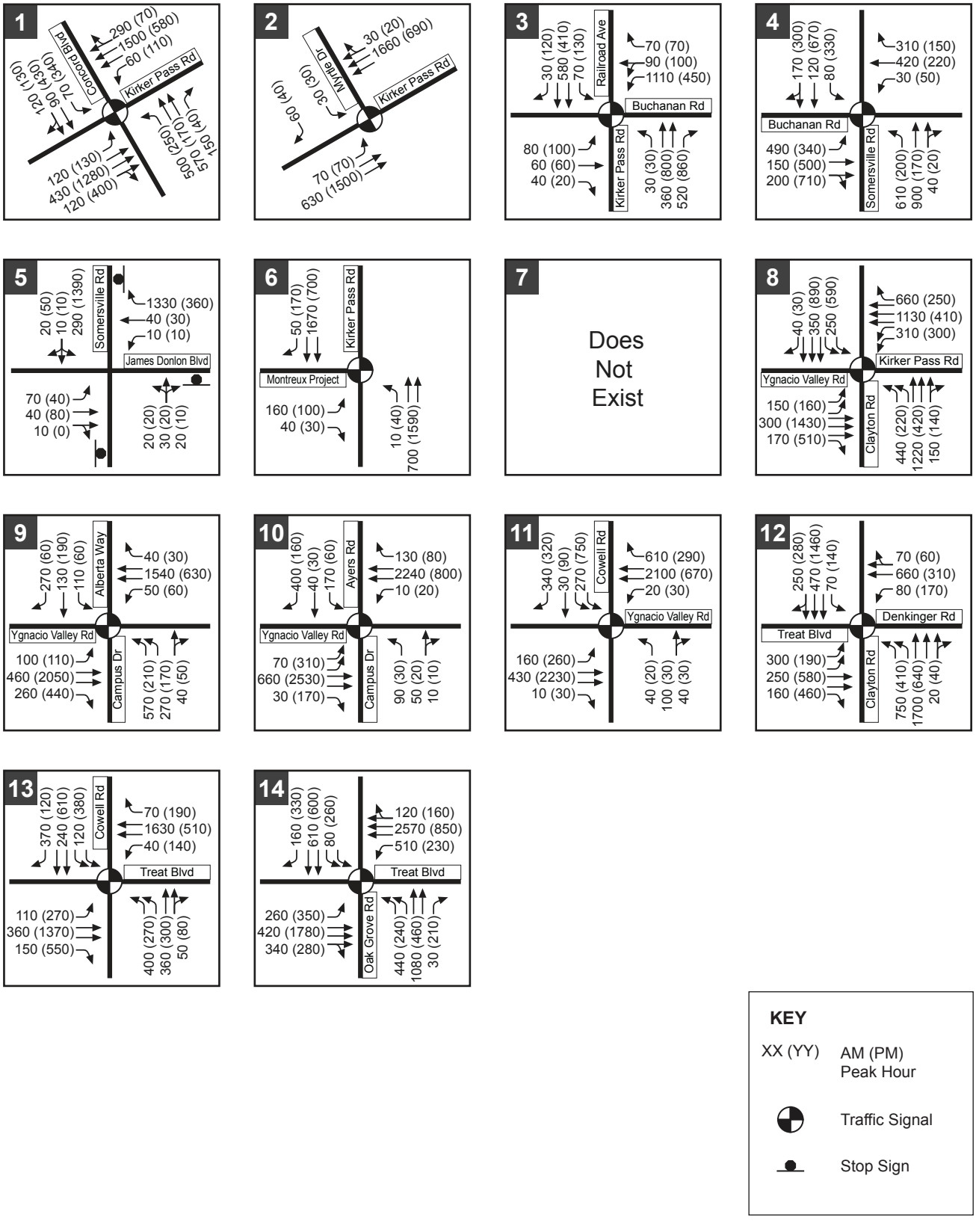
Near-Term (2015) No Project conditions

This scenario is based on year 2015 traffic volume forecasts, and assumes that the portion of the James Donlon Boulevard Extension between Somersville Road and Ventura Drive would be constructed as a four-lane arterial as part of the residential developments planned in the area. This scenario also includes the planned improvements described earlier in this section.

The CCTA Travel Demand Model was executed with the above inputs. The model results were "Furnessed," and were used to estimate AM and PM peak hour intersection volumes under the Near-Term (2015) No Project conditions. The resulting volumes are shown on Figure 4.13-3, *Near Term (2015) No Project Conditions, Peak Hour Intersection Volumes, Land Configurations and Traffic Control*. Generally, the Near-Term (2015) No Project volumes are higher than existing volumes, due to the overall growth in eastern and central Contra Costa County. Although the widened SR 4 freeway would have adequate capacity for most of the east-west growth, traffic on other east-west arterials, such as Buchanan Road, would also increase.

Intersection Operations

Based on the 2015 volumes and intersection configurations presented in Figure 4.13-3, *Near Term (2015) No Project Conditions Peak Hour Intersection Volumes, Land Configurations and Traffic Control*, AM and PM peak hour operations were analyzed at the study intersections. Tables 4.13-7, *Near-Term (2015) Conditions Intersection Peak Hour LOS Summary (CCTALOS)*, and 4.13-8, *Near-Term (2015) Conditions Intersection Peak Hour LOS Summary (HCM)*, summarize the analysis results for the Near-Term (2015) No Project and Near-Term (2015) With Project conditions using CCTALOS and HCM methods, respectively. The detailed intersection LOS calculation worksheets are presented in Appendix I.



Source: Fehr & Peers, 2012.

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Near Term (2015) No Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

11/28/12 JN 130944-18838 MAS

Figure 4.13-3

Table 4.13-7
Near-Term (2015) Conditions
Intersection Peak Hour LOS Summary (CCTALOS)

Intersection	Control	Peak Hour	No Project		With Project	
			V/C Ratio[1]	LOS	V/C Ratio[1]	LOS
1. Kirker Pass Road / Concord Boulevard	Signal	AM	0.81	D	0.82	D
		PM	0.73	C	0.76	C
2. Kirker Pass Road / Myrtle Drive	Signal	AM	0.39	A	0.39	A
		PM	0.45	A	0.49	A
3. Buchanan Road / Kirker Pass Road / Railroad Avenue	Signal	AM	0.64	B	0.37	A
		PM	0.69	B	0.40	A
4. Buchanan Road / Somersville Road	Signal	AM	**1.02**	F	0.63	B
		PM	**0.88**	D	0.54	A
5. James Donlon Boulevard / Somersville Road	SSSS/ Signal [2]	AM	n/a	n/a	0.51	A
		PM			0.70	B
6. James Donlon Boulevard Extension / Kirker Pass Road	Signal	AM	0.58	A	0.57	A
		PM	0.52	A	0.61	B
7. James Donlon Boulevard Extension / Ventura Drive	Signal	AM	n/a	n/a	0.41	A
		PM			0.41	A
8. Kirker Pass Road / Ygnacio Valley Road / Clayton Road	Signal	AM	0.73	C	0.75	C
		PM	0.70	B	0.72	C
9. Ygnacio Valley Road / Alberta Way / Pine Hollow Drive	Signal	AM	0.82	D	0.83	D
		PM	0.84	D	0.85	D
10. Ygnacio Valley Road / Ayers Road / Campus Drive	Signal	AM	**0.98**	E	**0.99**	E
		PM	0.83	D	0.84	D
11. Ygnacio Valley Road / Cowell Road	Signal	AM	**0.91**	E	**0.92**	E
		PM	**0.98**	E	**0.99**	E
12. Treat Boulevard / Denkinger Road / Clayton Road	Signal	AM	0.72	C	0.73	C
		PM	0.77	C	0.77	C
13. Treat Boulevard / Cowell Road	Signal	AM	0.85	D	0.86	D
		PM	0.78	C	0.78	C
14. Treat Boulevard / Oak Grove Road	Signal	AM	**1.06**	F	**1.06**	F
		PM	0.82	D	0.82	D

Source: Fehr & Peers, 2012.
Bold indicates intersection operating at deficient level of service.
1. Volume-to-capacity ratio (V/C) determined for all signalized intersections using the CCTALOS method.
2. Intersection is side-street stop-controlled under Near-Term (2015) No Project conditions and signalized under Near-Term (2015) With Project conditions.

Table 4.13-8
Near-Term (2015) No Project Conditions
Intersection Peak Hour LOS Summary (HCM)

Intersection	Control	Peak Hour	No Project		With Project	
			Delay (Seconds)[1]	LOS	Delay (Seconds)[1]	LOS
1. Kirker Pass Road / Concord Boulevard	Signal	AM	55	E	55	E
		PM	52	D	53	D
2. Kirker Pass Road / Myrtle Drive	Signal	AM	41	D	41	D
		PM	35	C	38	D
3. Buchanan Road / Kirker Pass Road / Railroad Avenue	Signal	AM	30	C	18	B
		PM	25	C	21	C
4. Buchanan Road / Somersville Road	Signal	AM	73	E	35	C
		PM	57	E	29	C
5. James Donlon Boulevard / Somersville Road	SSSS/ Signal [2]	AM	>60 (WB)	F	18	B
		PM	>60 (EB)	F	27	C
6. James Donlon Boulevard Extension / Kirker Pass Road	Signal	AM	9.3	A	21	C
		PM	6.6	A	17	B
7. James Donlon Boulevard Extension / Ventura Drive	Signal	AM	n/a	n/a	24	C
		PM			15	B

Source: Fehr & Peers, 2008.
Bold indicates intersection operating at deficient level of service.
1. 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, delay for worst approach (in seconds per vehicle) is presented.
2. Intersection is side-street stop-controlled under Near-Term (2015) No Project conditions and signalized under Near-Term (2015) With Project conditions.

As shown in Tables 4.13-7 and 4.13-8, five intersections would operate at a deficient level under the Near-Term (2015) No Project conditions. However, most of those intersections operate at similarly deficient levels under Existing conditions. The following intersections would operate at deficient levels under Near-Term (2015) No Project conditions:

- The Kirker Pass Road/Concord Boulevard intersection would operate at LOS E during the AM based on the HCM method.
- The Buchanan Road/Somersville Road intersection would operate at LOS F during the AM peak hour and LOS high D during the PM peak hour based on the CCTALOS method, and LOS E during both AM and PM peak hours based on the HCM method.
- The unsignalized James Donlon Boulevard/Somersville Road intersection would continue to operate at LOS F during both AM and PM peak hours.
- The Ygnacio Valley Road/Ayers Road/Campus Drive intersection would continue to operate at LOS E during the AM peak hour.
- The Ygnacio Valley Road/Cowell Road intersection would degrade to LOS E during the AM peak hour and continue to operate at LOS E during the PM peak hour.
- The Treat Boulevard/Oak Grove Road intersection would degrade from LOS E to LOS F during the AM peak hour.

NEAR-TERM (2015) WITH PROJECT CONDITIONS

The Near-Term (2015) With Project conditions is based on year 2015 traffic volume forecasts, and assumes that the entire proposed James Donlon Boulevard Extension from Somersville Road to Kirker Pass Road would be constructed as described in Chapter 3, *Project Description*.

The CCTA Travel Demand Model was executed with the inputs discussed above. The model results were "Furnessed," and were used to estimate AM and PM peak hour intersection volumes under the Near-Term (2015) With Project scenario. The resulting volumes are shown on Figure 4.13-4, *Near Term (2015) With Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control*. In comparison to the Near-Term (2015) No Project conditions, the completion of the proposed James Donlon Boulevard Extension would decrease traffic volumes on other parallel roadways, such as Buchanan Road and SR 4, especially during the peak hours: westbound in the AM peak hour and eastbound in the PM peak hour. The metering at the Kirker Pass Road / Myrtle Drive intersection during the AM peak hours would continue to limit the amount of traffic that would enter the City of Concord.

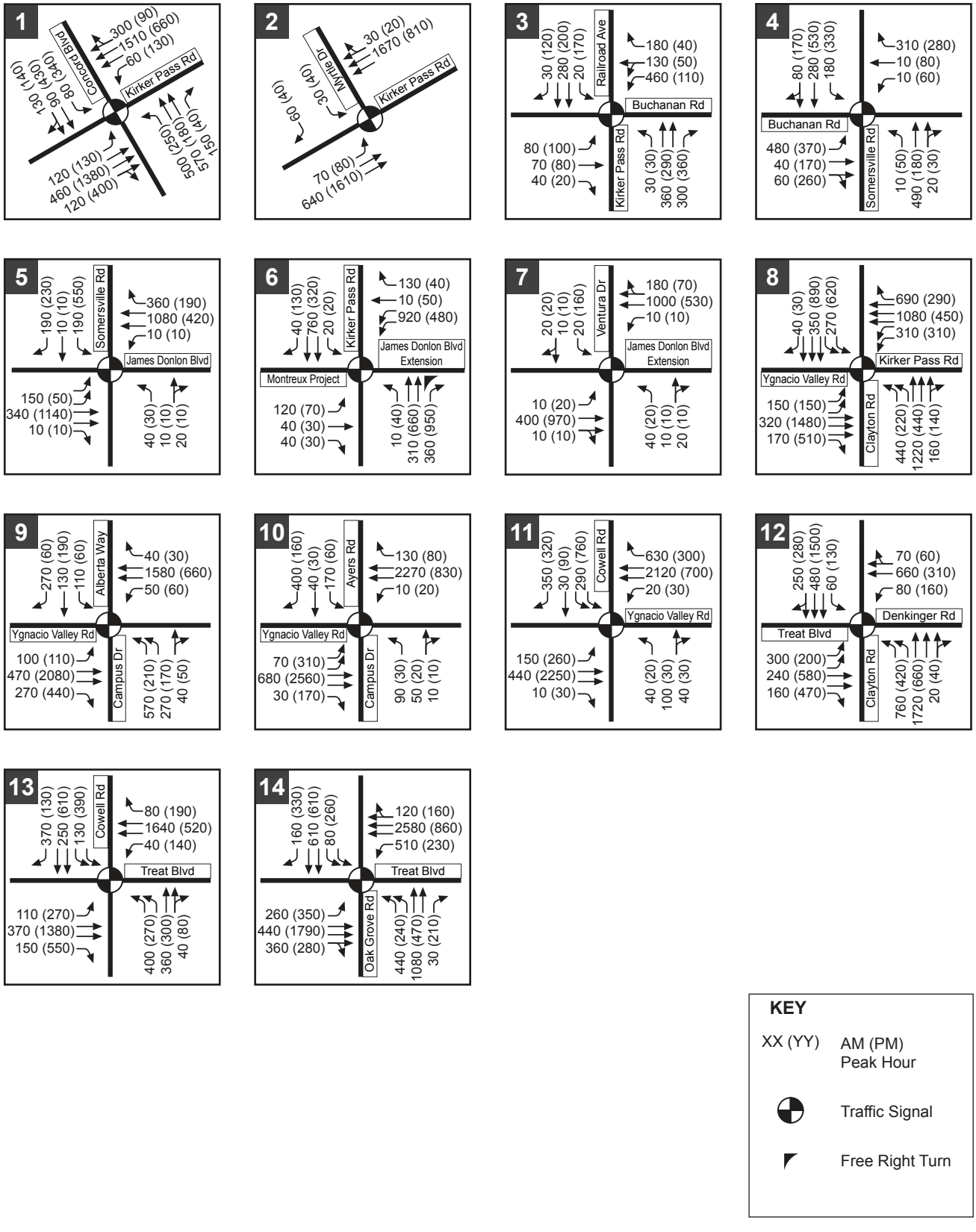
Intersection Operations

Based on volumes and intersection configurations presented in Figure 4.13-4, AM and PM peak hour operations were analyzed at the study intersections. Table 4.13-7 , *Near-Term (2015) Conditions Intersection Peak Hour LOS Summary (CCTALOS)*, and Table 4.13-8, *Near-Term (2015) Conditions Intersection Peak Hour LOS Summary (HCM)*, provided above, summarize the analysis results for the Near-Term (2015) No Project and Near-Term (2015) With Project conditions using CCTALOS and HCM methods, respectively. The detailed intersection LOS calculation worksheets are presented in Appendix I.

As shown in Tables 4.13-7 and 4.13-8, operations at the existing Pittsburg intersections would improve as a result of the project. The Buchanan Road / Somersville Road intersection would improve from a deficient LOS to an acceptable LOS during both AM and PM peak hours as traffic would divert from Buchanan Road to the James Donlon Boulevard Extension. The intersections at either end of the James Donlon Boulevard Extension would operate acceptably.

As shown in Tables 4.13-7 and 4.13-8, the Kirker Pass Road / Concord Boulevard intersection would continue to operate at unacceptable LOS E under Near-Term (2015) With Project conditions. However, the proposed project would not increase average intersection delay by more than five seconds. Therefore, the proposed project would not cause an impact at this intersection under Near-Term (2015) conditions.

As shown in Tables 4.13-7 and 4.13-8, the Ygnacio Valley Road / Ayers Road / Campus Drive, and the Treat Boulevard / Oak Grove Road intersections during the AM peak hour, and the Ygnacio Valley Road / Cowell Road intersection during both AM and PM peak hours, would continue to operate at unacceptable LOS E or LOS F under Near-Term (2015) With Project conditions. However, the proposed project would not increase the V/C ratio at these intersections by more than 0.01. Thus, the proposed project would not cause any impacts at the study intersections under Near-Term (2015) conditions.



Source: Fehr & Peers, 2012.

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Near Term (2015) With Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

11/28/12 JN 130944-18838 MAS

Figure 4.13-4

Conclusion

Under Near-Term (2015) No Project Conditions, the Buchanan Road / Somersville Road intersection would operate at LOS F during the AM peak hour and LOS high-D during the PM peak hour based on the CCTALOS method, and LOS E during both AM and PM peak hours based on the HCM method. These all exceed the MTSO of LOS mid-D established in the *East County Action Plan for Routes of Regional Significance*. Implementation of the proposed James Donlon Boulevard Extension would divert traffic from Buchanan Road and reduce congestion at the Buchanan Road / Somersville Road intersection, improving intersection operations to LOS mid-D or better during both AM and PM peak hour based on either CCTALOS or HCM methods. Thus impacts related to intersection delays as a result of the proposed project are considered less than significant.

***Mitigation Measure*:** No mitigation is required.

Level of Significance: Less Than Significant Impact.

- ***THE PROPOSED PROJECT WOULD REDUCE THE DELAY INDEX TO UNACCEPTABLE LEVELS ON ROADWAY SEGMENETS WITHIN THE STUDY AREA.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: Year 2015 operations along routes of regional significance were evaluated using the DI measure. The DI was calculated using results from the CCTA model. As shown in Table 4.13-9, *Near-Term (2015) Conditions Delay Index Summary*, all of the freeway segments satisfy their MTSO under Near-Term (2015) No Project and Near-Term (2015) With Project conditions.

Table 4.13-9
Near-Term (2015) Conditions
Delay Index Summary

Roadway Segment	Peak Hour	TSO	No Project		With Project	
			Eastbound	Westbound	Eastbound	Westbound
SR 4 between Bailey Road and Loveridge Road	AM	2.5	1.0	2.4	1.0	2.1
	PM	2.5	1.6	1.1	1.6	1.1
SR 4 between Loveridge Road and Hillcrest Avenue	AM	2.5	1.0	1.9	1.0	1.4
	PM	2.5	1.9	1.0	1.8	1.0

Source: Fehr & Peers, 2008.
Results in **bold** represent segments exceeding established MTSO

Because the proposed James Donlon Boulevard Extension would provide additional east-west capacity through a congested area, traffic volumes along parallel roadways are expected to decrease with implementation of the proposed project, especially during peak hours (westbound during the AM peak hour and eastbound during the PM peak hour). For example, the DI along westbound SR 4 between Bailey Road and Loveridge Road would decrease from 2.4 under Near-Term (2015) No Project conditions to 2.1 under Near-Term (2015) With Project conditions during the AM peak hour. Therefore, impacts related to DI would beneficial.

***Mitigation Measure*:** No mitigation is required.

Level of Significance: Beneficial impact.

Cumulative (2030) Traffic Impacts

- ***THE PROPOSED PROJECT WOULD CAUSE A SIGNIFICANT IMPACT AT INTERSECTIONS IN THE STUDY AREA UNDER CUMULATIVE (2030) CONDITIONS.***

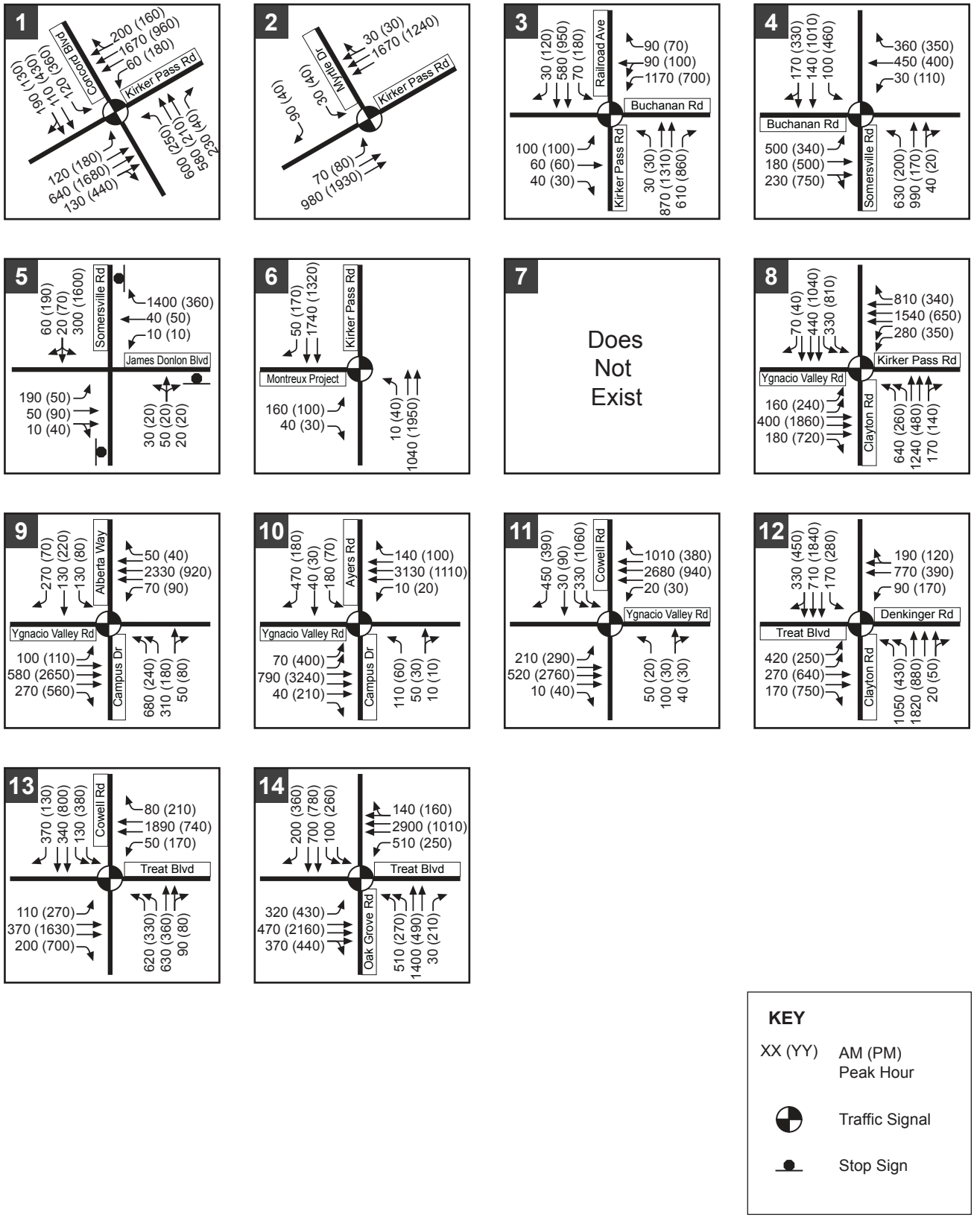
Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Cumulative (2030) conditions are based on year 2030 traffic volume forecasts, and assumes that the portion of the James Donlon Boulevard Extension between Somersville Road and Ventura Drive would be constructed as a four-lane arterial as part of the Sky Ranch II planned development. This scenario also includes the planned and funded roadways improvements listed previously, in this section.

Cumulative (2030) No Project Conditions
The CCTA Travel Demand Model was executed, the model results were "Furnessed," and were used to estimate AM and PM peak hour intersection volumes under Cumulative (2030) No Project conditions. The resulting volumes are shown on Figure 4.13-5, *Cumulative (2030) No Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control*. Generally, the Cumulative (2030) No Project volumes are higher than both existing and Near-Term (2015) volumes on all study roadways, due to the overall growth in eastern and central Contra Costa County.

Intersection Operations

Based on the Cumulative (2030) No Project conditions volumes and intersection configurations presented on Figure 4.13-5, AM and PM peak hour operations were analyzed at the study intersections. Tables 4.13-10, *Cumulative (2030) Conditions Intersection Peak Hour LOS (CCTALOS)*, and 4.13-11, *Cumulative (2030) Conditions Intersection Peak Hour LOS (HCM)*, summarize the analysis results for the Cumulative (2030) No Project and Cumulative (2030) With Project conditions using CCTALOS and HCM methods, respectively. The detailed intersection LOS calculation worksheets are presented in Appendix I.



Source: Fehr & Peers, 2012.

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Cumulative (2030) No Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

Figure 4.13-5

Table 4.13-10
Cumulative (2030) Conditions
Intersection Peak Hour LOS Summary (CCTALOS)

Intersection	Control	Peak Hour	No Project		With Project	
			V/C Ratio[1]	LOS	V/C Ratio[1]	LOS
1. Kirker Pass Road / Concord Boulevard	Signal	AM	0.93	E	0.93	E
		PM	0.86	D	0.88	D
2. Kirker Pass Road / Myrtle Drive	Signal	AM	0.39	A	0.39	A
		PM	0.58	A	0.62	B
3. Buchanan Road / Kirker Pass Road / Railroad Avenue	Signal	AM	0.79	C	0.60	A
		PM	0.83	D	0.50	A
4. Buchanan Road / Somersville Road	Signal	AM	1.06	F	0.81	D
		PM	1.05	F	0.71	C
5. James Donlon Boulevard / Somersville Road	SSSS/ Signal [2]	AM	n/a	n/a	0.60	A
		PM			0.85	D
6. James Donlon Boulevard Extension / Kirker Pass Road	Signal	AM	0.61	B	0.57	C
		PM	0.63	B	0.69	B
7. James Donlon Boulevard Extension / Ventura Drive	Signal	AM	n/a	n/a	0.51	A
		PM			0.49	A
8. Kirker Pass Road / Ygnacio Valley Road / Clayton Road	Signal	AM	0.83	D	0.81	D
		PM	0.89	D	0.93	E
9. Ygnacio Valley Road / Alberta Way / Pine Hollow Drive	Signal	AM	0.86	D	0.87	D
		PM	0.80	D	0.83	D
10. Ygnacio Valley Road / Ayers Road / Campus Drive	Signal	AM	0.98	E	0.99	E
		PM	0.73	C	0.75	C
11. Ygnacio Valley Road / Cowell Road	Signal	AM	0.86	D	0.88	D
		PM	0.97	E	0.99	E
12. Treat Boulevard / Denkinger Road / Clayton Road	Signal	AM	0.99	E	0.99	E
		PM	1.02	F	1.02	F
13. Treat Boulevard / Cowell Road	Signal	AM	1.00	F	1.01	F
		PM	0.95	E	0.96	E
14. Treat Boulevard / Oak Grove Road	Signal	AM	1.27	F	1.27	F
		PM	1.00	F	1.01	F

Source: Fehr & Peers, 2008.
Bold indicates intersection operating at deficient level of service.
1. Volume-to-capacity ratio (V/C) determined for all signalized intersections using the CCTALOS method.
2. Intersection is side-street stop-controlled under Near-Term (2015) No Project conditions and signalized under Near-Term (2015) With Project conditions.

Table 4.13-11
Cumulative (2030) Conditions
Intersection Peak Hour LOS Summary (HCM)

Intersection	Control	Peak Hour	No Project		With Project	
			Delay (Seconds)[1]	LOS	Delay (Seconds)[1]	LOS
1. Kirker Pass Road / Concord Boulevard	Signal	AM	64	E	64	E
		PM	62	E	62	E
2. Kirker Pass Road / Myrtle Drive	Signal	AM	40	D	40	D
		PM	45	D	48	D
3. Buchanan Road / Kirker Pass Road / Railroad Avenue	Signal	AM	38	D	24	C
		PM	42	D	22	C
4. Buchanan Road / Somersville Road	Signal	AM	81	F	53	D
		PM	95	F	38	D
5. James Donlon Boulevard / Somersville Road	SSSS/ Signal [2]	AM	>60 (WB)	F	24	C
		PM	>60 (EB)	F	41	D
6. James Donlon Boulevard Extension / Kirker Pass Road	Signal	AM	9	A	22	C
		PM	7	A	23	C
7. James Donlon Boulevard Extension / Ventura Drive	Signal	AM	n/a	n/a	19	B
		PM			17	B

Source: Fehr & Peers, 2008.
Bold indicates intersection operating at deficient level of service.
1. 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, delay for worst approach (in seconds per vehicle) is presented.
2. Intersection is side-street stop-controlled under Near-Term (2015) No Project conditions and signalized under Near-Term (2015) With Project conditions.

As shown in Tables 4.13-10 and 4.13-11, several intersections would operate at a deficient LOS under Cumulative (2030) No Project conditions. Due to the planned widening of Ygnacio Valley Road to six lanes between 2015 and 2030, operations would improve at some intersections under Cumulative (2030) No Project conditions as compared to Near-Term (2015) No Project conditions. The following intersections would operate at unacceptable LOS under Cumulative (2030) No Project conditions:

- The Kirker Pass Road/Concord Boulevard intersection would operate at LOS E during the AM peak hour based on the CCTALOS method, and at LOS E during both peak hours based on the HCM method.
- The Buchanan Road/Somersville Road intersection would operate at LOS F during both AM and PM peak hours based on the CCTALOS method, and LOS F during both AM and PM peak hours based on the HCM method.
- The unsignalized James Donlon Boulevard/Somersville Road intersection would continue to operate at LOS F during both AM and PM peak hours.
- The Ygnacio Valley Road/Ayers Road/Campus Drive intersection would continue to operate at LOS E during the AM peak hour.
- The Ygnacio Valley Road/Cowell Road intersection would operate at LOS E during the PM peak hour.
- The Treat Boulevard/Denkinger Road/Clayton Road intersection would degrade to LOS E during the AM peak hour and LOS F during the PM peak hour.
- The Treat Boulevard/Cowell Road intersection would degrade to LOS F during the AM peak hour and LOS E during the PM peak hour.

- The Treat Boulevard/Oak Grove Road intersection would operate at LOS F during both AM and PM peak hours.

Cumulative (2030) With Project Conditions

The CCTA Travel Demand Model was executed, the model results were "Furnessed," and were used to estimate AM and PM peak hour intersection volumes under the Cumulative (2030) With Project conditions. The resulting volumes are shown on Figure 4.13-6, *Cumulative (2030) With Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control*. In comparison to the Cumulative (2030) No Project conditions, the completion of the proposed James Donlon Boulevard Extension would decrease traffic volumes on other parallel roadways, such as Buchanan Road and SR 4, especially during peak hours (westbound in the AM peak hour and eastbound in the PM peak hour).

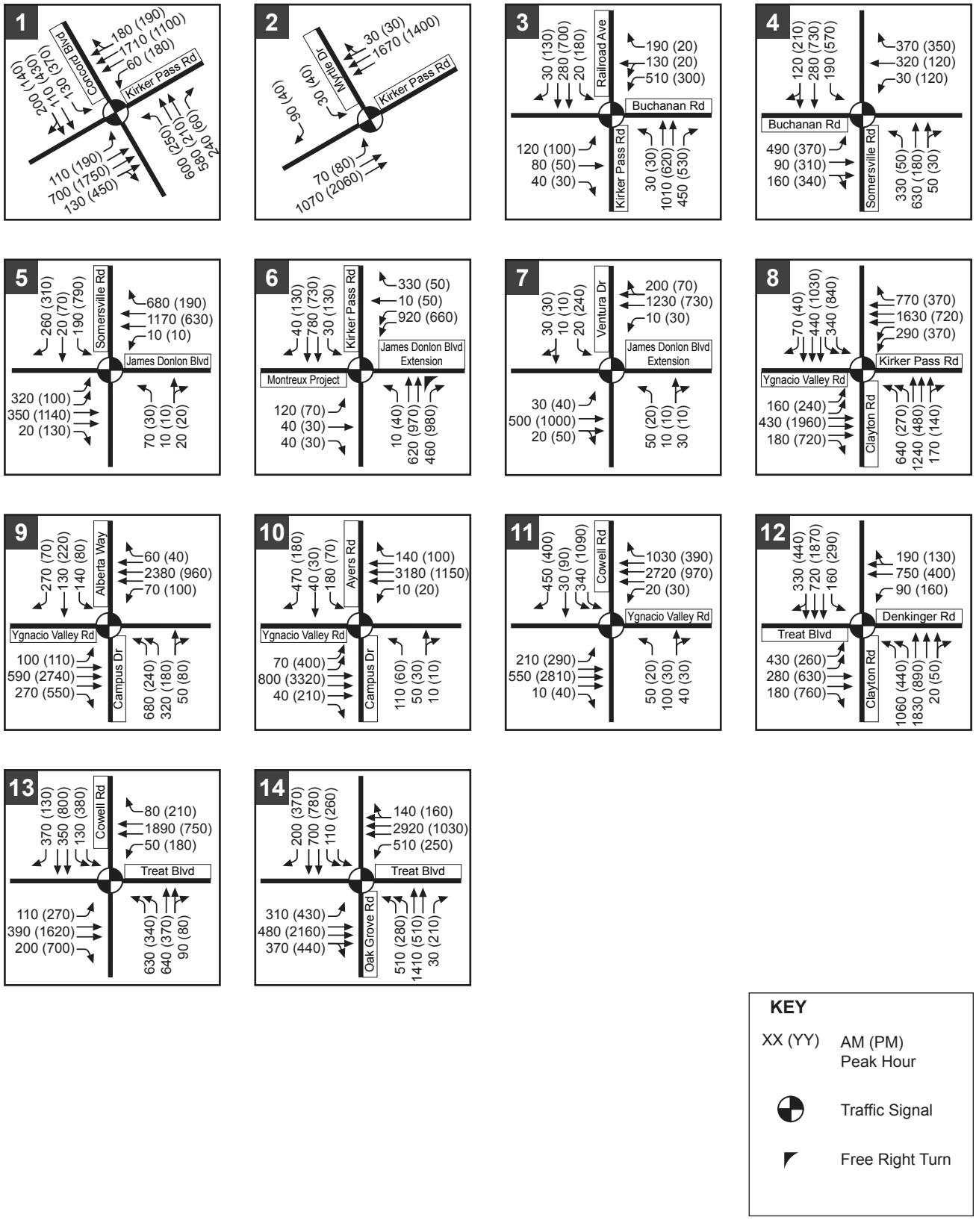
Intersection Operations

Based on volumes and intersection configurations presented on Figure 4.13-6, AM and PM peak hour operations were analyzed at the study intersections. Tables 4.13-10 and 4.13-11 summarize the analysis results for the Cumulative (2030) conditions, under both the No Project and With Project scenarios using CCTALOS and HCM, respectively. The detailed intersection LOS calculation worksheets are presented in Appendix I.

As shown in Tables 4.13-10 and 4.13-11, operations at the existing Pittsburg intersections would improve as a result of the proposed project. The Buchanan Road / Somersville Road intersection would improve from an unacceptable LOS to an acceptable LOS during both AM and PM peak hours because traffic would divert from Buchanan Road to the proposed James Donlon Boulevard extension. The intersections at either end of the proposed James Donlon Boulevard Extension would also operate at acceptable LOS.

As shown in Tables 4.13-10 and 4.13-11, several intersections would operate at unacceptable LOS under Cumulative (2030) With Project conditions.

The **Kirker Pass Road/Concord Boulevard** intersection would operate at LOS E during the AM peak hour based on the CCTALOS methods, and at LOS E during both peak hours based on the HCM method under both Cumulative (2030) No Project and Cumulative (2030) With Project conditions. The proposed project would not increase the V/C ratio at this intersection by more than 0.01 based on the CCTALOS method, nor would it increase average delay by more than 5 seconds based on the HCM method. Thus, the proposed project would not cause a significant impact at this intersection under Cumulative conditions.



Source: Fehr & Peers, 2012.

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Cumulative (2030) With Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

11/28/12 JN 130944-18838 MAS

Figure 4.13-6

The **Kirker Pass Road/Ygnacio Valley Road/Clayton Road** intersection would degrade from LOS D (V/C = 0.88) during the PM peak hour based on the CCTALOS method for Cumulative (2030) No Project conditions to LOS E (V = 0.93) during the PM peak hour. This exceeds the LOS threshold established by the City of Concord. The proposed project would cause a significant impact at this intersection under Cumulative (2030) With Project conditions.

The **Ygnacio Valley Road/Ayers Road/Campus** Drive intersection would operate at LOS E during the AM peak hour under both Cumulative (2030) No Project and Cumulative (2030) With Project conditions. The proposed project would not increase the V/C ratio by more than 0.01. Therefore, the proposed project would not cause a significant impact at this intersection under Cumulative (2030) conditions.

The **Ygnacio Valley Road/Cowell Road** intersection would operate at LOS E during the PM peak hour under both Cumulative (2030) No Project and Cumulative (2030) With Project conditions based on the CCTALOS method. The V/C ratio is 0.97 under Cumulative (2030) No Project conditions, while the V/C ratio is 0.99 under Cumulative (2030) With Project conditions. The proposed project would, therefore, increase the V/C ratio by more than 0.01. The proposed project would cause a significant impact at this intersection under Cumulative (2030) With Project conditions.

The **Treat Boulevard/Denkinger Road/Clayton Road** intersection would operate at LOS E during the AM peak hour and LOS F during the PM peak hour under both Cumulative (2030) No Project and Cumulative (2030) With Project conditions. The proposed project would not increase the V/C ratio by more than 0.01 during either AM or PM peak hours. Thus, the proposed project would not cause a significant impact at this intersection under Cumulative (2030) conditions.

The **Treat Boulevard/Cowell Road** intersection would operate at LOS F during the AM peak hour and LOS E during the PM peak hour under both Cumulative (2030) No Project and Cumulative (2030) With Project conditions. The proposed project would not increase the V/C ratio by more than 0.01 during either AM or PM peak hours. Thus, the proposed project would not cause a significant impact at this intersection under Cumulative (2030) conditions.

The **Treat Boulevard/Oak Grove Road** intersection would operate at LOS F during both AM and PM peak hours under both Cumulative (2030) No Project and Cumulative (2030) With Project conditions. The proposed project would not increase the V/C ratio by more than 0.01 during either AM or PM peak hours. Thus, the proposed project would not cause a significant impact at this intersection under Cumulative (2030) conditions.

Incorporation of Mitigation Measures

Currently, the area surrounding the Kirker Pass Road / Ygnacio Valley Road / Clayton Road intersection is built-out with little or no right-of-way available for improvements. Therefore, it is unlikely that any capacity enhancing improvements, such as roadway widening, can be implemented at this intersection. The SR 4 Integrated Corridor Analysis published by CCTA (July 2012) recommends capacity enhancing improvements on SR 4 which include constructing an additional mixed-flow lane on eastbound SR 4 from SR 242 through the San Marco Boulevard Interchange to be added to the Comprehensive Transportation Project List and the Countywide Transportation Plan.

The CCTA Travel Demand Model was used to determine the affects of this proposed SR 4 improvement on travel patterns in the study area and if it would mitigate the significant impact at Kirker Pass Road / Ygnacio Valley Road / Clayton Road intersection or cause secondary impacts.

Based on the model results, the additional freeway capacity would divert PM peak hour traffic traveling from Central County to East County using Kirker Pass Road to SR 4. The proposed improvement would not have noticeable effects on travel patterns during the AM peak hour, even with the additional capacity on eastbound SR 4 and the control point metering in place on Ygnacio Valley Road, Kirker Pass Road, Buchanan Road, and the proposed James Donlon Boulevard extension.

Table 4.13-12, *Cumulative (2030) Mitigated Conditions Intersection Peak Hour LOS (CCTALOS)*, and Table 4.13-13, *Cumulative (2030) Mitigated Conditions Intersection Peak Hour LOS (HCM)*, summarize the analysis results for the Cumulative (2030) conditions using CCTALOS and HCM methods, respectively. The detailed intersection LOS calculation worksheets are presented in Appendix I.

Table 4.13-12
Cumulative (2030) Mitigated Conditions
Intersection Peak Hour LOS Summary (CCTALOS)

Intersection	Control	Peak Hour	No Project		With Project		With Project and Mitigated[2]	
			V/C Ratio[1]	LOS	V/C Ratio[1]	LOS	V/C Ratio[1]	LOS
1. Kirker Pass Road / Concord Boulevard	Signal	AM	0.93	E	0.93	E	0.93	E
		PM	0.86	D	0.88	D	0.86	D
2. Kirker Pass Road / Myrtle Drive	Signal	AM	0.39	A	0.39	A	0.39	A
		PM	0.58	A	0.62	B	0.59	A
3. Buchanan Road / Kirker Pass Road / Railroad Avenue	Signal	AM	0.79	C	0.60	A	0.60	A
		PM	0.83	D	0.50	A	0.47	A
4. Buchanan Road / Somersville Road	Signal	AM	1.06	F	0.81	D	0.81	D
		PM	1.05	F	0.71	C	0.76	C
5. James Donlon Boulevard / Somersville Road	SSSS/ Signal [3]	AM	n/a	n/a	0.60	A	0.60	A
		PM			0.85	D	0.85	D
6. James Donlon Boulevard Extension / Kirker Pass Road	Signal	AM	0.61	B	0.57	C	0.57	C
		PM	0.63	B	0.69	B	0.70	C
7. James Donlon Boulevard Extension / Ventura Drive	Signal	AM	n/a	n/a	0.51	A	0.51	A
		PM			0.49	A	0.50	A
8. Kirker Pass Road / Ygnacio Valley Road / Clayton Road	Signal	AM	0.83	D	0.81	D	0.81	D
		PM	0.89	D	0.93	E	0.90	D
9. Ygnacio Valley Road / Alberta Way / Pine Hollow Drive	Signal	AM	0.86	D	0.87	D	0.87	D
		PM	0.80	D	0.83	D	0.82	D
10. Ygnacio Valley Road / Ayers Road / Campus Drive	Signal	AM	0.98	E	0.99	E	0.99	E
		PM	0.73	C	0.75	C	0.74	C
11. Ygnacio Valley Road / Cowell Road	Signal	AM	0.86	D	0.88	D	0.88	D
		PM	0.97	E	0.99	E	0.96	E
12. Treat Boulevard / Denkinger Road / Clayton Road	Signal	AM	0.99	E	0.99	E	0.99	E
		PM	1.02	F	1.02	F	0.98	E
13. Treat Boulevard / Cowell Road	Signal	AM	1.00	F	1.01	F	1.01	F
		PM	0.95	E	0.96	E	0.95	E
14. Treat Boulevard / Oak Grove Road	Signal	AM	1.27	F	1.27	F	1.27	F
		PM	1.00	F	1.01	F	1.00	E

Source: Fehr & Peers, 2012.
Bold indicates intersection operating at deficient level of service.
1. Volume-to-capacity ratio (V/C) determined for all signalized intersections using the CCTALOS method.
2. Mitigation measure would consist of providing an additional lane on eastbound SR 4 between SR 242 and San Marco Boulevard.
3. Intersection is side-street stop-controlled under Cumulative No Project conditions and signalized under Cumulative With Project and Cumulative With Project Mitigated conditions.

Table 4.13-13
Cumulative (2030) Mitigated Conditions
Intersection Peak Hour LOS Summary (HCM)

Intersection	Control	Peak Hour	No Project		With Project		With Project and Mitigated[2]	
			Delay (Seconds)[1]	LOS	Delay (Seconds)[1]	LOS	Delay (Seconds)[1]	LOS
1. Kirker Pass Road / Concord Boulevard	Signal	AM	64	E	64	E	64	E
		PM	62	E	62	E	62	E
2. Kirker Pass Road / Myrtle Drive	Signal	AM	40	D	40	D	40	D
		PM	45	D	48	D	36	D
3. Buchanan Road / Kirker Pass Road / Railroad Avenue	Signal	AM	38	D	24	C	24	C
		PM	42	D	22	C	21	C
4. Buchanan Road / Somersville Road	Signal	AM	81	F	53	D	53	D
		PM	95	F	38	D	41	D
5. James Donlon Boulevard / Somersville Road	SSSS/ Signal [3]	AM	>60 (WB)	F	24	C	24	C
		PM	>60 (EB)	F	41	D	42	D
6. James Donlon Boulevard Extension / Kirker Pass Road	Signal	AM	9	A	22	C	22	C
		PM	7	A	23	C	20	B
7. James Donlon Boulevard Extension / Ventura Drive	Signal	AM	n/a	n/a	19	B	19	B
		PM			17	B	17	B

Source: Fehr & Peers, 2012.
Bold indicates intersection operating at deficient level of service.
1. 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, delay for worst approach (in seconds per vehicle) is presented.
2. Mitigation measure would consist of providing an additional lane on eastbound SR 4 between SR 242 and San Marco Boulevard.
3. Intersection is side-street stop-controlled under Cumulative No Project conditions and signalized under Cumulative With Project and Cumulative With Project Mitigated conditions.

As shown in Tables 4.13-12 and 4.13-13, above, the proposed SR 4 improvement would mitigate the significant impact at the Kirker Pass Road / Ygnacio Valley Road / Clayton Road intersection by improving the intersection to LOS D during the PM peak hour. The proposed SR 4 improvement would not result in a secondary impact at other study intersections. Therefore, The SR 4 improvement identified within the SR 4 Integrated Corridor Analysis published by CCTA would reduce the significance level of the proposed project to less than significant. However, this improvement has not been approved and does not have full funding. In addition, since this improvement is outside the jurisdiction of City of Pittsburg, the implementation of this mitigation measure cannot be guaranteed with respect to development of the proposed project. Thus, this impact would remain significant and unavoidable.

***Mitigation Measure*:**

TRA1 Prior to opening day of the proposed project, the project proponent shall contribute its fair share funding for the construction of an additional mixed-flow lane on eastbound SR 4 from SR 242 through the San Marco Boulevard Interchange. The fair share funding amount shall be provided to the City to be placed in the regional transportation mitigation fee fund, pursuant to City Municipal Code Chapter 15.100, *Regional Transportation Mitigation Fee*.

Level of Significance After Mitigation: Significant and Unavoidable Impact at the Kirker Pass Road/Ygnacio Valley Road/Clayton Road intersection. The SR 4 mixed-use lane improvement has not been approved and does not have full funding. In addition, since this improvement is outside the jurisdiction of City of Pittsburg, the implementation of Mitigation Measure TRA1 cannot be guaranteed

with respect to development of the proposed project. Thus, this impact would remain significant and unavoidable.

♦ ***THE PROPOSED PROJECT WOULD CAUSE A SIGNIFICANT IMPACT AT ROADWAY SEGMENTS IN THE STUDY AREA UNDER CUMULATIVE (2030) CONDITIONS.***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Year 2030 operations along routes of regional significance were evaluated using the DI measure described earlier. The DI was calculated using results from the CCTA model. Table 4.13-14, *Cumulative (2030) Conditions Delay Index Summary*, shows the DI summary for two roadway segments under Cumulative (2030) No Project and Cumulative (2030) With Project conditions.

Table 4.13-14
Cumulative (2030) Conditions
Delay Index Summary

Roadway Segment	Peak Hour	TSO	No Project		With Project	
			Eastbound	Westbound	Eastbound	Westbound
SR 4 between Bailey Road and Loveridge Road	AM	2.5	1.1	**3.7**	1.1	**3.0**
	PM	2.5	2.2	1.2	2.1	1.2
SR 4 between Loveridge Road and Hillcrest Avenue	AM	2.5	1.1	2.3	1.0	1.7
	PM	2.5	**2.6**	1.2	2.3	1.2

Source: Fehr & Peers, 2008.
Results in **bold** represent segments exceeding established MTSO

As shown in Table 4.13-14, the two roadway segments within the study area do not satisfy the MTSO under Cumulative (2030) No Project conditions during one peak hour each day: Westbound SR 4 between Bailey Road and Loveridge Road during the AM peak hour and Eastbound SR 4 between Loveridge Road and Hillcrest Avenue during the PM peak hour

As shown in Table 4.13-14 above, the only roadway segment not satisfying the MTSO under Cumulative (2030) With Project conditions is Westbound SR 4 between Bailey Road and Loveridge Road during the AM peak hour

Because the proposed James Donlon Boulevard Extension would provide additional east-west capacity through a congested area, traffic volumes along parallel roadways are expected to decrease with implementation of the proposed project, especially during the peak hours (westbound during the AM peak hour and eastbound during the PM peak hour). Westbound SR 4 between Bailey Road and Loveridge Road, the AM peak hour delay index would decrease from 3.7 to 3.0 as a result of the proposed project. The Cumulative (2030) With Project conditions would continue to exceed the established MTSO of 2.5 but by a smaller amount than under the Cumulative (2030) No Project conditions. DI along eastbound SR 4 between Loveridge Road and Hillcrest Avenue is expected to decrease from 2.6 (a MTSO exceedance) under the Cumulative (2030) No Project condition to 2.3 under the Cumulative (2030) With Project condition. Therefore, the proposed project would result in a DI for eastbound SR 4 that is under the threshold.

Implementation of Mitigation Measures

As discussed above, the SR 4 Integrated Corridor Analysis published by CCTA (July 2012) recommends capacity enhancing improvements on eastbound SR 4 from SR 242 through the San Marco Boulevard Interchange. Table 4.13-15, *Cumulative (2030) Conditions Delay Index Summary*, summarizes the DI on the roadway segments within the study area with the incorporation of the SR 4 improvements identified by CCTA. The proposed SR 4 improvement would not result in a secondary impact at the study freeway segments.

Table 4.13-15
Cumulative (2030) Conditions
Delay Index Summary

Roadway Segment	Peak Hour	TSO	No Project		With Project		With Project and Mitigated[1]	
			East bound	West bound	East bound	West bound	East bound	West bound
SR 4 between Bailey Road and Loveridge Road	AM	2.5	1.1	3.7	1.1	3.0	1.1	3.0
	PM	2.5	2.2	1.2	2.1	1.2	2.2	1.2
SR 4 between Loveridge Road and Hillcrest Avenue	AM	2.5	1.1	2.3	1.0	1.7	1.0	1.7
	PM	2.5	2.6	1.2	2.3	1.2	2.3	1.2

Source: Fehr & Peers, 2012.
Results in **bold** represent segments exceeding established MTSO.
1 Mitigation measure would consist of providing an additional lane on eastbound SR 4 between SR 242 and San Marco Boulevard.

Therefore, The SR 4 improvement identified within the SR 4 Integrated Corridor Analysis published by CCTA would reduce the significance level of the proposed project to less than significant. However, this improvement has not been approved and does not have full funding. In addition, since this improvement is outside the jurisdiction of City of Pittsburg, the implementation of this mitigation measure cannot be guaranteed with respect to development of the proposed project. Thus, this impact would remain significant and unavoidable.

Mitigation Measure: Implement Mitigation Measure TRA1.

Level of Significance After Mitigation: Significant and Unavoidable Impact on SR 4 between Bailey Road and Loveridge Road. The SR 4 mixed-use lane improvement has not been approved and does not have full funding. In addition, since this improvement is outside the jurisdiction of City of Pittsburg, the implementation of Mitigation Measure TRA1 cannot be guaranteed with respect to development of the proposed project. Thus, this impact would remain significant and unavoidable.

- ***THE PROPOSED PRPOJECT WOULD SUBSTANTIALLY INCREASE HAZARDS OR CONGESTION DUE TO A DESIGN FEATURE (E.G., SHARP CURVES) OR INCOMPATIBLE USES (E.G., FARM EQUIPMENT).***

Level of Significance: Less Than Significant Impact.

Impact Analysis: The proposed project would be designed to meet City and Caltrans standards and regulations for highway design for vehicles traveling up to 55 miles per hour (mph). As discussed in Section 4.8, *Geology and Soils*, as well as in the geotechnical studies provided in Appendix E, the proposed project would include design features to be compatible with the geology and soils in the area, including areas of potential landslide. The design of the proposed project would also provide culverts of

various sizes to accommodate wildlife movement and cattle ranch operations. Culverts would range in size from 24 inches to 132 inches, large enough for cattle and farm equipment to cross under the proposed project. Therefore, it is not anticipated that the proposed project would increase hazards due to design features, nor would it increase hazards due to incompatible uses (e.g., farm equipment). Impacts are considered less than significant.

Mitigation Measure: No mitigation is required.

Level of Significance: Less Than Significant Impact.

- ***THE PROPOSED PROJECT WOULD CONFLICT WITH ADOPTED ALTERNATIVE TRANSPORTATION POLICIES, PLANS, OR PROGRAMS.***

Level of Significance: Less Than Significant Impact.

Impact Analysis:

Pedestrian and Bicycle Circulation

The proposed James Donlon Boulevard Extension may be designated as a Class III bicycle route, which would be consistent with the City of Pittsburg General Plan Policies 7-P-33, 7-P-34, 7-P-43, and 7-P-52 regarding bicycle access. These policies recommend bike facilities along arterials and collectors to ensure adequate access and continuous facilities.

In the *CCTA Countywide Bicycle and Pedestrian Plan* (2009), on-street Class II bike lanes are also proposed on Kirker Pass Road between the Pittsburg and Concord city limits, and on Somersville Road between south of Buchanan Road and James Donlon Boulevard. The proposed project would improve the connectivity of the regional bicycle network by allowing bicyclists to access the proposed bike lanes on Kirker Pass Road and the existing bike lanes on James Donlon Boulevard east of Somersville Road via the James Donlon Boulevard Extension. The proposed project would have a beneficial impact to connectivity for bicycle and pedestrian traffic

The proposed project would not provide pedestrian facilities along the James Donlon Extension between Ventura Drive and Kirker Pass Road in undeveloped areas. However, since there are no plans for development along this portion of the roadway, little or no pedestrian activity is anticipated. Therefore, the proposed project would be consistent with policies regarding pedestrian access.

Transit

The proposed project would improve transit service in the study area by enhancing the connectivity of the area roadway system and reducing overall delays for the bus routes in the area. Significant delay reductions are expected along Buchanan Road, and delay along Kirker Pass Road is expected to remain about the same. This would reduce delay for both of the Tri-Delta routes (380 and 390) and for County Connection Route 93X, which use Buchanan Road. This is a beneficial impact for all three bus routes.

In addition, the proposed project may enable the implementation of express bus service along the proposed James Donlon Boulevard Extension, bypassing Buchanan Road and further reducing transit travel time.

Mitigation Measure: No mitigation is required.

Level of Significance: Beneficial Impact.

4.14 UTILITIES AND SERVICE SYSTEMS

Information in this section is based on data provided in the Contra Costa Water District (CCWD) Urban Water Management Plan (UWMP) and the City of Pittsburg (City) UWMP, in addition to information contained in the City General Plan and the Contra Costa County (County) General Plan.

4.14.1 ENVIRONMENTAL SETTING

WATER

The proposed project is outside the service boundary of CCWD. The CCWD receives its water from the United States Bureau of Reclamation's Central Valley Project (CVP), and provides water to approximately 500,000 people in Contra Costa County.[1] CCWD's long-term CVP contract was renewed in May 2005 and has a term of 40 years.[2] CCWD has a contract with the Central Valley Project to use up to 195,000 acre-feet per year of raw water, with a reduction in deliveries during water shortages including regulatory restrictions and drought. The primary conveyance facility for CCWD's raw water is the Contra Costa Canal, which conveys water from the Delta intake at Rock Slough.

The City of Pittsburg is located within the CCWD service area and obtains roughly 85 percent of its water supply wholesale from CCWD.[3] The City supplements its CCWD water supply from groundwater wells located within the City. The City's groundwater wells supply roughly 10-15 percent of City's water supply and recycled water makes up the remainder.[4] The City also operates its own 32 million gallon per day (mgd) water treatment plant and associated infrastructure facilities to serve its customers with potable water, in addition to the operation and maintenance of seven pump stations and eight drinking water storage reservoirs.[5]

The proposed project would not require a permanent source of water facilities and would not include the extension of water pipelines within the roadway.

STORMWATER

The implementation of drainage facilities in Contra Costa County falls under the jurisdiction of the 19 cities within the County, the County for the unincorporated areas, or the County Flood Control and Water Conservation District, which has adopted plans which serve both cities and the County. All three groups generally use the same design criteria in sizing and evaluating drainage systems.[6]

Unlike domestic water and sanitary systems, the pattern of storm water drainage is determined by water's natural tendency to flow downhill. Consequently, much of the drainage system serving the County consists of natural drainage swales, ditches and watercourses. The cities and the County Flood Control and Water Conservation District have developed regional drainage plans in many areas to guide developers in the implementation of new drainage systems serving development, and to provide the basis

[1] Contra Costa Water District *Urban Water Management Plan*, June 2011. http://www.ccwater.com/files/UWMP.pdf. Accessed 10 September, 2012.
[2] Ibid.
[3] City of Pittsburg *2010 Urban Water Management Plan*, August 2011. http://www.water.ca.gov/urbanwatermanagement/2010uwmps/Pittsburg,%20City%20of/Final%20Pittsburg%202010%20UWMP.pdf. Accessed 10 September, 2012.
[4] Ibid.
[5] City of Pittsburg, California, Water Treatment Plant. http://www.ci.pittsburg.ca.us/index.aspx?page=290. Accessed 10 September, 2012.
[6] Contra Costa County General Plan, July 2010. http://www.co.contra-costa.ca.us/depart/cd/current/advance/GeneralPlan/CCCGeneralPlan.pdf. Accessed 11 September, 2012.

for local and federal flood control projects. Local drainage infrastructure is provided by developers as part of the land development process.[7]

Kirker Pass Road is the only existing roadway within the project limits and currently contains a drainage system as discussed above. The majority of the project site is grazing land and does not currently contain a stormwater drainage system.

WASTEWATER

Wastewater services in the project area are provided by the City and the Delta Diablo Sanitation District (DDSD). The City maintains and owns the local sewage collection system, and DDSD owns and operates the collection system in Bay Point. The DDSD also owns and operates regional interceptors and the sewage treatment plant located north of the Pittsburg-Antioch Highway. DDSD's service area encompasses Pittsburg, Bay Point, and Antioch.[8] The City's wastewater infrastructure includes the local sewage collection system with approximately 126 miles of sewer main, and two lift stations.[9] Wastewater is discharged into the DDSD system for treatment and disposal. The project would not require a permanent source of wastewater facilities and would not include the extension of wastewater pipelines within the roadway.

SOLID WASTE

Solid waste collection is provided under a City franchise by Pittsburg Disposal Service (a private company), located at 981 Railroad Avenue, in Pittsburg. Residential and commercial solid waste is transported to the Portrero Hills Landfill located east of Suisun for disposal. Non-recyclable industrial waste is disposed at the Keller Canyon Landfill adjacent to the City. Pittsburg Disposal also operates a Recycling Center and Transfer Station at 1300 Loveridge Road.[10]

EXISTING TRANSMISSION LINES / ELECTRICITY

There are several Pacific Gas and Electric (PG&E) transmission lines that traverse the project area. It would be necessary to relocate or raise three transmission towers in order to implement the proposed project. In addition, the project would require a source of electricity for proposed streetlights. Electricity would be provided by extending PG&E service to the proposed roadway.

EXISTING NATURAL GAS PIPELINE

Kinder Morgan has a ten-inch, high pressure, natural gas pipeline that traverses the project area. It would be necessary to lower this ten-inch natural gas pipeline in certain locations within the project area, in order to implement the proposed project.

4.14.2 REGULATORY SETTING

STATE

California Energy Commission (CEC)

The California Energy Commission (CEC) regulates the provision of natural gas and electricity with the State. The CEC is the State's primary energy policy and planning agency. Created in 1974, the CEC has

[7] Ibid.
[8] City of Pittsburg General Plan, 2010. http://www.ci.pittsburg.ca.us/. Accessed 11 September, 2012.
[9] Contra Costa LAFCO: Water and Wastewater Municipal Services Review for East Contra Costa County. Approved December 2007.
http://www.contracostalafco.org/municipal_service_reviews/east_county_water_wastewater/4.0%20Pittsburg_WaterWastewater%20Final.pdf. Accessed 11 September, 2012.
[10] City of Pittsburg *General Plan*, 2010. Available at http://www.ci.pittsburg.ca.us/. Accessed 11 September, 2012.

five major responsibilities: forecasting future energy needs and keeping historical energy data, licensing thermal power plants 50 megawatts (MW) or larger, promoting energy efficienty though applicance and building standards, developing energy technologies and supporting renewable energy, and planning for and directing the state response to energy emergencies.

Water Supply

Under California Assembly Bill (AB) 325, all developer installed landscaping must be accompanied by a landscape package that documents how water use efficiency would be achieved through design.

San Francisco Bay Regional Water Quality Control Board

The primary responsibility for the protection of water quality in California rests with the state Water Resources Control Board (State Board) and nine Regional Water Quality Control Boards (RWQCBs). The state Board sets statewide policy for the implementation of State and federal laws and regulations. The RWQCBs adopt and implement Water Quality Control Plans (Basin Plans) which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities. The jurisdiction of the San Francisco Bay RWQCB extends from approximately Calistoga on the north to Santa Clara County on the south, with the Pacific Ocean on the western boundary and to the City of Antioch and the eastern limit of Santa Clara County on the east.

California Department of Resources Recycling and Recovery (CalRecycle) Formerly California Integrated Waste Management Board (CIWMB)

CalRecycle is the State agency designated to oversee, manage, and track California's 76 million tons of waste generated each year. It is one of the six agencies under the umbrella of the California Environmental Protection Agency. CalRecycle develops regulations to control and manage waste, for which enforcement authority is typically delegated to the local government. The board works jointly with local government to implement regulations and fund programs.

The Integrated Waste Management Act of 1989 [Public Resources Code (PRC) 40050 et seq. or Assembly Bill (AB) 939, codified in PRC 40000], administered by CalRecycle, requires all local and county governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25 percent by the year 1995 and 50 percent by the year 2000. To assist local jurisdictions in achieving these targets, the California Solid Waste Reuse and Recycling Access Act of 1991 requires all new developments to include adequate, accessible, and convenient areas for collecting and loading recyclable and green waste materials.

California Department of Toxic Substances Control State (DTSC)

The DTSC regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. One thousand (1,000) scientists, engineers, and specialized support staff make sure that companies and individuals handle, transport, store, treat, dispose of, and clean-up hazardous wastes appropriately.

California Department of Water Resources (DWR)

The California DWR is a department within the California Resources Agency. The DWR is responsible for the State of California's management and regulation of water usage.

LOCAL

City of Pittsburg General Plan

The City of Pittsburg General Plan (City General Plan) contains the following relevant policies regarding water use, stormwater, and solid waste policies:

Goal 9-G-4 Minimize the runoff and erosion caused by earth movement by requiring development to use best management practices (BMPs).

Goal 9-G-5 Preserve and enhance Pittsburg's creeks for their value in providing visual amenity, drainage capacity, and habitat value.

Goal 9-G-6 Preserve and protect the Contra Costa Canal from storm drainage and runoff contaminating the City's municipal water supply.

Policy 9-P-16 Establish development standards for new construction adjacent to riparian zones to reduce sedimentation and flooding. Standards should include:

- Requirements that low berms or other temporary structures such as protection fences be built between a construction site and riparian corridor to preclude sheet-flooding stormwater from entering the corridors during the construction period.

- Requirements for installation of storm sewers before construction occurs to collect stormwater runoff during construction

Policy 9-P-17 To prevent flood hazards in the Kirker Creek watershed, ensure that new development minimizes paved areas, retaining large blocks of undisturbed, naturally vegetated habitat to allow for water infiltration.

Additional flood control mitigation may include intermixing areas of pavement with the naturally vegetated infiltration sites to reduce the concentration of stormwater runoff from pavement and structures.

Policy 9-P-20 As a part of project review and approval, establish maintenance districts to ensure uniform maintenance for selected channels and creeks.

Policy 9-P-21 As a part of project review and CEQA documentation, require an assessment of downstream drainage (creeks and channels) and City storm-water facilities impacted by potential project runoff.

Goal 11-G-6 Continue reduction and recycling efforts within the City to divert increasingly larger portions of the waste stream from local landfills.

Policy 11-P-1 Continue using the Urban Water Management Plan as the mechanism for detailed water supply planning, implementation, and conservation.

Policy 11-P-3 Continue water district and user conservation efforts to help reduce demand in light of recent Contra Costa Water District raw water reductions.

Policy 11-P-5 Work with Contra Costa Water District in planning the development of new pressure zones as needed to ensure adequate fire flows in hillside areas.

Policy 11-P-15 Work with Delta Diablo Sanitation District to promote the use of recycled water for irrigation of large planted areas, such as business/industrial campus projects, City parks, and street medians.

Policy 11-P-21 Promote the importance of recycling industrial and construction waste.

City of Pittsburg Municipal Code

The City Municipal Code provides guidance on the development and maintenance of utility and public service facilities. This includes stormwater management and discharge control (Title 13, Waters and Sewers), storm water management of the Kirker Creek watershed drainage area (Title 15, Buildings and Construction), and landscaping (Title 18, Zoning). Pursuant to AB 325, water conservation is also addressed in the City's Municipal Code, which requires that landscaping plans include energy-efficient and drought-tolerant plant material.

Contra Costa County General Plan

The Contra Costa County General Plan (County General Plan) contains the following relevant policies regarding water use, stormwater, and solid waste:

Goal 7-AG To reduce the amount of waste disposed of in landfills by:

1) Reducing the amount of solid waste generated (waste reduction);
2) Reusing and recycling as much of the solid waste as possible;
3) Utilizing the energy and nutrient value of the solid waste (waste to energy and composting); and
4) Properly disposing of the remaining solid waste (landfill disposal)

Goal 7-AH To divert as much waste as feasible from landfills through recovery and recycling.

Policy 7-18 Water service agencies should generally be discouraged from constructing new water distribution infrastructure which exceeds future water needs based on the build out projections of the County General Plan and city general plans.

Policy 7-19 Urban development shall be encouraged within the existing water Spheres of Influence adopted by the Local Agency Formation Commission; expansion into new areas within the Urban Limit Line beyond the Spheres should be restricted to those areas where urban development can meet all growth management standards included in this General Plan.

Policy 7-20 At the project approval stage, the County shall require new development to demonstrate that adequate water quantity and quality can be provided. The County shall determine whether (1) capacity exists within the water system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultation with the appropriate water agency, the applicant, or other sources.

Policy 7-25 Land uses and activities that could result in contamination of groundwater supplies shall be identified, monitored and regulated to minimize the risk of such contamination.

Policy 7-26 The need for water system improvements shall be reduced by encouraging new development to incorporate water conservation measures to decrease peak water use.

Policy 7-i Conditionally approve all tentative subdivision maps and other preliminary development plans on verification of adequate water supply for the project. Such condition shall be satisfied by verification, based on substantial evidence in the record, that capacity within the system to serve the specific development project exists or comparable demonstration of adequate wastewater treatment capacity. Where no tentative map or preliminary plan is required prior to development, approve no map or development permit without this standard being satisfied.

Policy 7-r Where feasible, include water conservation measures recommended by water service agencies in the conditions of approval for subdivisions and other new development.

Policy 7-92 Waste diversion from landfills due to resource recovery activities shall be subject to goals included in the County Integrated Waste Management Plan. Public agencies and the private sector should strive to meet these aggressive goals.

Policy 7-bd Ensure that solid waste activities in Contra Costa County are carried out in accordance with the Integrated Waste Management Plan and are coordinated with other jurisdictions.

Goal 8-W To provide alternative drainage system improvements which rely on increased retention capacity to lessen or eliminate the need for structural modifications to watercourses, whenever economically possible.

Contra Costa County Ordinance Code

The County Environmental Health Services is certified by the California Integrated Waste Management Board as the local enforcement agency, which enforces the standards for collection, handling, storage, and disposal of residential, commercial and industrial solid waste. The County Ordinance Code Division 418, Refuse, provides guidance related to disposal sites, recycling requirements, and construction and demolition debris recovery. The County Ordinance Code Division 1014, Stormwater Management and Discharge Control, provides guidance related to stormwater management.

4.14.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact to utilities and service systems if it 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 facilities, the construction of which could cause significant environmental effects

- Require or result in the construction of new stormwater drainage 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 inadequate capacity to provide 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.

AREAS OF NO PROJECT IMPACT

The following impacts either are not applicable to the proposed project or are not reasonably foreseeable:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board

The proposed project would provide an extension of James Donlon Boulevard, connecting to Kirker Pass Road. The proposed project would not generate wastewater beyond stormwater runoff, as discussed below, and therefore would not exceed wastewater treatment requirements of the San Francisco Bay RWQCB. No impacts would result in this regard.

- Require or result in the construction of new water or wastewater treatment facilities or expansion of facilities, the construction of which could cause significant environmental effects

The proposed project would not generate new wastewater, beyond stormwater runoff as discussed below, therefore the need for an expanded or new wastewater treatment facility would not occur as a result of this proposed project. The proposed project would not require a new water source, as landscaping would not be irrigated. Water needs during construction would be accommodated by trucking water to the project site. Therefore, an expanded or new water treatment facility would not be required as a result of the proposed project.

- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to provide the project's projected demand in addition to the provider's existing commitments

The proposed project would not generate wastewater beyond stormwater runoff, as discussed below; therefore, the proposed project would not result in the extension of wastewater services to the project site. The proposed project would not exceed wastewater treatment requirements at any existing wastewater treatment facilities in the proposed project area.

- Comply with federal, state, and local statutes and regulations related to solid waste.

The proposed project would not generate solid waste during the operation of James Donlon Boulevard. Construction activities would result in minimal solid waste disposal needs. The project proponent and project construction manager would comply with federal, state, and local statutes and regulations regarding solid waste recycling and disposal. Therefore, no impacts would result in this regard.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Drainage Facility Impacts

- ***REQUIRE OR RESULT IN THE CONSTRUCTION OF NEW STORM WATER DRAINAGE FACILITIES OR EXPANSION OF EXISTING FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL EFFECTS***

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: The proposed project would include storm water drainage facilities associated with the conveyance of runoff from the proposed roadway surface. The proposed project's stormwater drainage system would follow Caltrans Design Manual procedures and be configured to contain stormwater flow spread width to the roadway shoulder during a 25-year design storm based on a minimum time of concentration of ten minutes. The proposed project would include approximately nine culverts and/or bridges, as necessary, to cross several drainage features, including Kirker Creek. Non-point source pollutants would be washed by rainwater from roadway areas into natural ephemeral drainages that connect to the City's stormwater system, into Kirker Creek, and eventually emptying into the San Francisco Bay.

Storm drainage networks would be configured to discharge toward logical stream crossings to maintain existing drainage patterns and minimize erosion potential. In accordance with the Contra Costa Clean Water Program, bio-retention facilities would be designed and implemented to address stormwater quality from the additional impervious surface area that would result from the proposed roadway improvements.

Therefore, the proposed project would provide stormwater facilities in accordance with the Contra Costa County Flood Control and Water Conservation District, Contra Costa County, and City of Pittsburg standards. The proposed project would not result in the need to expand existing facilities. With the implementation of Mitigation Measures HAZ1 and HAZ2, as provided in Section 4.9, *Hazards and Hazardous Materials*, and Mitigation Measures WQ1 through WQ3, as provided in Section 4.10, *Hydrology and Water Quality*, the proposed project would have less than significant impacts on stormwater drainage facilities.

Mitigation Measures: Implement Mitigation Measures HAZ1, HAZ2, and WQ1 through WQ3.

Level of Significance After Mitigation: Less Than Significant Impact.

Water Supply Impacts

- ***THE PROPOSED PROJECT WOULD NOT RESULT IN INSUFFICIENT WATER SUPPLY.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: Construction of the James Donlon Boulevard Extension would result in a minimal increase in water demand during construction. New water service is not proposed nor would it be required for the roadway alignment. Water supply is anticipated to be required only during construction for dust control and hydroseeding of graded hillside areas immediately following construction. No irrigation would be required for the revegetation plan, therefore no water supply is needed during the operation of James Donlon Boulevard.

The project area currently falls outside the City of Pittsburg jurisdictional boundary and the service boundary of CCWD. The CCWD and Bureau of Reclamation are currently working to determine if CCWD has supply available to service the temporary water demand during construction of the proposed project without annexing the property to include it within its service area. If water is not available from CCWD, water will be trucked to the project site during construction. As stated above, no irrigation would be required for the revegetation plan; therefore, no permanent water supply is needed. Thus, impacts associated with water supply would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

Landfill Capacity Impacts

- ***BE SERVED BY A LANDFILL WITH SUFFICIENT PERMITTED CAPACITY TO ACCOMMODATE THE PROJECT'S SOLID WASTE DISPOSAL NEEDS.***

Level of Significance: Less Than Significant Impact.

Impact Analysis: Minimal solid waste would be generated by the proposed project, and the project needs would be met by existing landfill capacities. The Keller Canyon Landfill, a Class II facility, has a maximum throughput permitted capacity of 3,500 tons per day. The permitted capacity at the Keller Canyon Landfill is 75,018,280 cubic yards, with an anticipated closure date of 2050.[11] The proposed project would not result in the demolition of structures and waste generated during construction would be minimal. The Keller Canyon Landfill would accept any construction related waste generated by the project and has the capacity to accept any waste. Therefore, impacts in this regard are considered less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

[11] California Department of Recycling and Recovery (CalRecycle). Facility/Site Summary Details: Keller Canyon Landfill (07-AA-0032) and 2009 Solid Waste Facility Permit. Available at http://www.calrecycle.ca.gov/SWFacilities/Directory/07-AA-0032/Detail/. Accessed 15 October 2012.

5.0 CUMULATIVE AND GROWTH-INDUCING IMPACTS

5.1 INTRODUCTION

California Environmental Quality Act (CEQA) Guidelines Section 15130 requires that an EIR include a discussion of cumulative impacts when a project's incremental effect is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past, current, and the reasonably foreseeable projects (State CEQA Guidelines Section 15065(a)(3)). A lead agency need not consider every incremental effect as "cumulatively considerable," but does need to briefly describe the basis for concluding that the incremental effect is not a cumulatively considerable contribution to a cumulatively significant impact.

"The discussion of cumulative impacts shall reflect the severity of impacts and their likelihood of occurrence, but the discussion need not provide as great [a level of] detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact." (State CEQA Guidelines Section 15130(b))

This chapter also analyzes the potential environmental consequences of the foreseeable growth and development that could be induced by implementation of the proposed project. Section 15126(d) of the State CEQA Guidelines requires that the growth-inducing effects of a proposed project be addressed in an EIR. The evaluation of whether a project would result in growth-inducing effects focuses on the consideration of factors outlined in Section 15126.2(d) of the State CEQA Guidelines, which are described below in Section 5.3.

5.2 CUMULATIVE IMPACTS

5.2.1 CUMULATIVE IMPACT ANALYSIS METHODOLOGY

The following cumulative impacts analysis is based on the projects listed in Table 5-1, *Cumulative Projects Considered*. The projects listed in Table 5-1 consist of 28 residential projects, 19 commercial projects, and three industrial projects that are either under construction, approved and awaiting construction, or undergoing review by City staff.

Analysis of cumulative impacts requires estimation in many cases, because specific quantification of impacts is not always possible, due to variations in the status and timing of projects and environmental conditions that may exist when cumulative projects are developed. CEQA notes that the discussions of cumulative impacts should be guided by standards of practicality and reasonableness (State CEQA Guidelines Section 15130 (b)). As such, this analysis addresses impacts that might compound or interrelate with those of the proposed project.

Table 5-1
Cumulative Projects Considered

Project Name or Applicant	Jurisdiction	# of Units/ Square Feet (sq. ft.)	Status
Residential			
Almenara Phase II	Pittsburg	44 multi-family units	Pending
Almondridge East Tract 7906	Antioch	81 single-family units	Approved
Alves Ranch	Pittsburg	167 single-family units 364 to 393 multi-family units	Approved
Aviano	Antioch	553 single-family units (adult community)	Approved
Bancroft Gardens II	Pittsburg	28 single-family units	Approved
Black Diamond Ranch	Antioch	280 single-family units	Under Construction with new floor plans in progress
Bridle Ranch Master Development Plan	Antioch	Approximately 370 single-family units	Pending
Deer Valley Estates	Antioch	136 single-family units	Pending
Golden Bow Estates	Antioch	12 single-family units	Under Construction
Hilden Glen	Antioch	371 single-family units	Under Construction
Lawlor Estates	Pittsburg	50 single-family units	Under Construction
Mariner Walk	Pittsburg	123 single-family units	Under Construction
Mira Vista Hills	Antioch	180 single-family units	Under Construction
Monterra (Nelson Ranch)	Antioch	360 single-family units	Under Construction
Montreaux	Contra Costa County (planned annexation to Pittsburg)	368 single-family units	Pending
Park Ridge	Antioch	525 single-family units	Approved
The Point	Antioch	60 single-family units	Pending
Quail Cove	Antioch	31 single-family units	Pending
Roddy Ranch	Antioch	574 single-family units Approximately 100 units and hotel	Pending
San Marco	Pittsburg	1,412 single-family units 1,526 multi-family units	Under Construction
Sand Creek Ranch	Antioch	377 single-family units	Under Construction
Sierra Vista	Antioch	50 single-family units	Approved
Sky Ranch	Pittsburg	415 single-family units	Approved
Sunnyside Estates	Pittsburg	33 single-family units	Pending
Tabora Gardens	Antioch	85 multi-family units (senior apartment)	Approved
Tierra Villas	Antioch	122 single-family units	Approved
Tuscany Meadows	Contra Costa County (planned annexation to Pittsburg)	998 single-family homes	Pending

Project Name or Applicant	Jurisdiction	# of Units/ Square Feet (sq. ft.)	Status
Vista Del Mar	Pittsburg	518 single-family units	Under Construction
Commercial			
2100 L Street	Antioch	6.870 sq. ft.	Pending
AutoZone	Antioch	0.7875 acres	Under Construction
Bank of Agriculture	Antioch	2.4 acres	Pending
Blue Rock Business Center	Antioch	122, 856 sq. ft.	101,256 sq. ft. Built
Buchanan Crossings	Antioch	107,870 sq. ft.	Pending
Building the Cross Ministries	Antioch	--	Pending
Christ Embassy church	Antioch	--	Pending
Deer Valley Business Park	Antioch	16 buildings 1,800 – 7,000 sq. ft.	--Pending
Hillcrest Summit	Antioch	1,500 sq. ft. retail 35,077 sq. ft. office	Pending
Holy Cross Cemetary	Antioch	100,100 sq. ft.	Pending
Kaiser Medical Center	Antioch	500,000 sq. ft. hospital 450,000 sq. ft. medical offices	340,400 sq. ft. Hospital Built 313,050 sq. ft. Medical Offices Built
Lakeview Center	Antioch	--	Under Construction
Lone Tree Landing	Antioch	413,790 sq. ft.	25,000 sq. ft. Built
New Bethel Missionary Baptist Church	Pittsburg	20,600 sq. ft.	Under Construction
St. Ignatius Church Expansion	Antioch	12,995 sq. ft.	Under Construction
North Park Commercial Center Expansion	Pittsburg	63,151 sq. ft.	Approved
Pittsburg Library Expansion and Café	Pittsburg	3,330 sq. ft.	Under Construction
San Marco Gas Station and Convenience Store	Pittsburg	6,000 sq. ft.	Approved
WalMart Expansion	Antioch	33,575 sq. ft. with additional parking	Pending
Industrial			
Columbia Solar Farm	Pittsburg	115 acres	Pending
Irish Construction	Pittsburg	7,770	Under Construction
Mount Diablo Resource Recovery Park	Pittsburg	82,611	Use Permit Pending
WesPac Energy – Pittsburg Terminal	Pittsburg	--	Use Permit Pending

Source: City of Antioch Project Pipeline, 2012; City of Pittsburg, 2012
sq. ft. = square feet

5.2.2 ANALYSIS OF CUMULATIVE IMPACTS

AESTHETICS

Construction of currently approved and pending projects in the region, as discussed above in Table 5-1, would permanently alter the nature and appearance of the area through the loss of undeveloped land. As development occurs throughout the project area, residents and travelers would notice the visual effects of urbanization. Cumulative impacts can be mitigated to less than significant levels with use of building materials that are consistent with the general character of the surrounding area, landscaping design, and proper lighting techniques to direct light on-site and away from adjacent properties. Additionally, cumulative projects would be designed consistent with the land use designations, zoning requirements, and other requirements of the surrounding cities, Pittsburg and Antioch. With implementation of Mitigation Measures AES1, AES2, and AES3, the project impacts in combination with past, present, and reasonably foreseeable future projects would be less than significant.

AGRICULTURE AND FORESTRY RESOURCES

The proposed project would not convert prime farmland, unique farmland, farmland of statewide importance to non-agricultural uses. The proposed project is not located within or adjacent to land designated as forest land. Therefore, the proposed project would not have a cumulatively considerable to a cumulative impact in combination with impacts from past, present, and reasonably foreseeable future projects.

Approximately 70 acres of the overall 475-acre area (the two privately-owned properties) would be developed with the proposed roadway alignment. The area within the proposed James Donlon Boulevard extension would be acquired by the City, which would trigger the cancellation of the Williamson Act contract. The conversion of 70 acres of agricultural land to non-agricultural land would increase the total acreage of urban uses when combined with past, present, and reasonably foreseeable projects. However, the proposed project would not reduce the agricultural viability of the proposed project area, as existing cattle ranch operations would be retained and cattle grazing would continue after implementation of the proposed project. In addition, the proposed project includes a City General Plan amendment to designate the properties Open Space and would pre-zone the area within the City's Sphere of Influence (SOI) to designate the properties Open Space (OS) District, with the option to provide an Agricultural Preserve Overlay, resulting in proposed project area remaining in agricultural use indefinitely, with the exception of the area within the proposed right-of-way. The City would have the option to administer the Williamson Act contract upon annexation for the areas outside the proposed right-of-way. Therefore, the proposed project's contribution to cumulative agricultural resources impacts would be less than significant.

AIR QUALITY/GREENHOUSE GAS EMISSIONS

Cumulative Short-Term Emissions

The San Francisco Bay Area Air Basin (Basin) is designated nonattainment for ozone (O_3), and particulate matter 10 microns or less and 2.5 microns or less (PM_{10} and $PM_{2.5}$, respectively) for state standards, and nonattainment for O_3 and PM_{10} for federal standards (refer to Table 4.5-3, *National and California Ambient Air Quality Standards*). As discussed in Section 4.5, *Air Quality/Greenhouse Gas Emissions*, the proposed project's construction-related emissions would exceed the Bay Area Air Quality Management District (BAAQMD) thresholds of significance for nitrogen oxides (NO_X). Therefore, implementation of Mitigation Measures AQ1 through AQ3 has been required to reduce emissions to a less than significant level. The BAAQMD has not established a significance threshold for cumulative construction emissions. However, due to the temporary nature of construction emissions, if the proposed project's emissions would be less than significant based on the project-level thresholds of significance, it

can be expected that the proposed project would not be a cumulatively considerable contributor to a significant cumulative impact.

The City has identified projects as discussed in Table 5-1 within Pittsburg, Antioch and unincorporated Contra Costa County that are either pending approval, currently approved, or under construction. However, whether any of these proposed projects would be under construction at the same time as the proposed project is unknown at this time. The project proponent has no control over the timing or sequencing of the related projects and any quantitative analysis to ascertain the daily construction emissions that assumes multiple, concurrent construction would be speculative. In addition, the proposed project would be required to implement the proposed BAAQMD Basic Construction Mitigation Measures (Mitigation Measures AQ1 and AQ2), which are recommended for all projects whether or not construction-related emissions exceed the thresholds of significance. The proposed project would also implement an additional Mitigation Measure AQ3 to reduce NO_X emissions. Therefore, construction emissions associated with the proposed project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Cumulative Long-Term Emissions

The BAAQMD has not established separate significance thresholds for cumulative operational emissions. The nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The BAAQMD developed the operational thresholds of significance based on the level above which a project's individual emissions would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. Therefore, a project that exceeds the BAAQMD operational thresholds would also be a cumulatively considerable contributor to a significant cumulative impact. As described, above, the proposed project's operational emissions would be less than significant. Therefore, operational emissions associated with the proposed project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions contribute, on a cumulative basis, to global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature. The combination of GHG emissions from past, present and future projects contribute substantially to the phenomenon of global climate change and its associated environmental impacts. The BAAQMD's approach to developing their GHG emissions threshold is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce Statewide GHG emissions needed to move toward climate stabilization. If a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact, and would be considered significant. As described in Section 4.5 of this EIR, the proposed project would result in a reduction in vehicle miles traveled (VMT), vehicle hours traveled (VHT), and would reduce carbon dioxide (CO_2) emissions by 12,035 metric tons per year. The proposed project would not hinder the State's GHG reduction goals established by Assembly Bill (AB) 32. Therefore, the proposed project's GHG emissions would not be cumulatively considerable. Impacts would be less than significant.

BIOLOGICAL RESOURCES

The proposed project would result in the conversion of approximately 70 acres of natural, open space habitat to roadway uses. The proposed project would permanently impact 16.8 acres of undeveloped uplands. The proposed project would permanently impact 1.27 acres of jurisdictional wetlands, 0.06 acre

of jurisdictional other waters, and 5.3 acres of California Department of Fish and Wildlife (CDFW) regulated habitat. The proposed project could have impacts to special-status species. Some of these special-status species are covered under the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). The HCP/NCCP provides for the comprehensive species, wetlands, and ecosystem conservation and contributes to the recovery of endangered species in northern California. The HCP/NCCP avoids project-by-project permitting, and results in more effective coordinated mitigation for projects in east Contra Costa County.

In conjunction with past, present, and reasonably foreseeable projects in the vicinity of the project area, the proposed project's conversion of open space to roadway use would result in contribution to cumulative impacts; however, Section 4.6, *Biological Resources*, requires implementation of Mitigation Measures BIO1 through BIO12 and compliance with the HCP/NCCP, would reduce impacts.

The biological resources impacts of other pending and approved projects considered for this cumulative impacts assessment would be assessed and mitigated on a project-by-project basis through the environmental review process. In addition, projects approved after the adoption of the HCP/NCCP would address biological resource impacts through the HCP/NCCP. As such, cumulative impacts on biological resources have been addressed and are considered less than significant.

CULTURAL RESOURCES

As described in Section 4.7, *Cultural Resources*, one archaeological site, a prehistoric lithic scatter, was recorded immediately south of a drainage during the 2012 survey. No eligible prehistoric or historic cultural resources were found within the roadway's alignment in, and the proposed project would not affect structures associated with the Thomas ranch, which are considered eligible for listing on the National Register of Historic Places and the California Register of Historical Resources. Section 4.7 recommends mitigation measures that would reduce potential impacts to any unknown cultural resources that may be discovered during project construction to a less than significant level. The cultural resource impacts of other pending and approved projects would be assessed and mitigated on a project-by-project basis. For the above reasons, the proposed project's contribution to cumulative cultural resources impacts would be less than significant.

GEOLOGY AND SOILS

The geographic scope for considering cumulative impacts with regard to geology and soils includes the extent of the project site because impacts to geology and soils are generally site-specific. Impacts of the proposed project would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, and reasonably foreseeable projects. As described in Table 5-1, the majority of the cumulative projects are residential and commercial development.

The proposed project design features, including adherence to relevant code standards, and implementation of mitigation measures, would reduce potential geology and soils-related impacts to less than significant (refer to Section 4.8, *Geology and Soils*). It is not possible to eliminate all geologic hazards (i.e., seismic hazards). However, building codes and other construction requirements have been established to protect against structure collapse and major injury during seismic events, as well as to protect against other geologic hazards, such as expansive soils. Therefore, impacts resulting from the proposed project are less than significant. Regarding other projects, as stated above, these hazards would be mitigated on a project-by-project basis to the extent practicable for each individual site through compliance with building codes and regulations and implementation of site-specific mitigation measures. Therefore, the proposed project's contribution to cumulative geology and soils impacts would be less than significant.

HAZARDS AND HAZARDOUS MATERIALS

As described in Section 4.9 (Hazards and Hazardous Materials), implementation of the proposed project would not result in significant impacts associated with hazards and/or hazardous materials. While proposed project would result in the lowering of a ten-inch, high pressure natural gas pipeline and relocating utility towers. Mitigation Measures HAZ1 through HAZ4 would reduce the hazards created by utility relocation to a less than significant level. The proposed project is located within two fire hazard areas as well as a State Responsibility Area (SRA). With implementation of the Mitigation Measures HAZ5 through HAZ9, potential project-level wildland fire impacts would be reduced to less than significant. Compliance by other projects in the area with regulations governing hazards and hazardous materials would reduce potential cumulative impacts to less than significant levels. Therefore, the proposed project's contribution to cumulative hazards and hazardous materials impacts would be less than significant.

HYDROLOGY AND WATER QUALITY

The proposed project would be required to comply with Clean Water Act provisions, National Pollutant Discharge Elimination System (NPDES) permit requirements, which includes a Stormwater Pollution Prevention Plan (SWPPP), and the Contra Costa Clean Water Program best management practices (BMPs). In addition, the proposed project would be required to implement Mitigation Measures WQ1 through WQ3, which would further reduce impacts to hydrology and water quality. The proposed project includes bio-retention basins to reduce the effects of surface water runoff on the drainages and Kirker Creek. Therefore, the proposed project would have a limited contribution to adverse cumulative water quality effects. It is reasonable to anticipate that all projects in the cumulative scenario would be required to comply with the same, or similar, water quality standards and waste discharge requirements as the proposed project. Therefore, the proposed project's contribution to cumulative hydrology and water quality impacts would be less than significant.

NOISE

Short-Term Cumulative Noise Impacts

The timing or sequencing of the cumulative projects cannot be determined. As such, any quantitative analysis to ascertain the daily construction noise that assumes multiple, concurrent construction projects would be speculative. Construction-related noise for the proposed project and each identified cumulative project would be localized. In addition, it is anticipated that each of the cumulative projects would be required to comply with the local noise ordinances, as well as mitigation measures that may be prescribed pursuant to CEQA provisions, which require significant impacts to be reduced to the extent feasible.

Construction noise impacts would cease upon completion of clearing, grading, and paving activities. Compliance with site-specific mitigation, as well as compliance with the City Municipal Code requirements, would serve to minimize the length of time noise-sensitive receptors are exposed to significant noise levels. Additionally, because noise dissipates as it travels away from its source, noise impacts from construction activities would be limited to each of the respective sites and their vicinities. As such, construction noise from cumulative projects would not interact with noise from the proposed project due to the distances between the specific sites. Therefore, the proposed project’s contribution to cumulative noise impacts would be less than significant.

Long-Term Cumulative Noise Impacts

The cumulative mobile noise analysis is conducted in a two step process. First, the combined effects from both the proposed project and other projects are compared. Second, for combined effects that are determined to be cumulatively significant, the project’s incremental effects are then analyzed. The

proposed project's contribution to a cumulative traffic noise increase would be considered significant when the combined effect exceeds perception level (i.e., auditory level increase) threshold and the cumulative noise level exceeds the applicable exterior standard at a sensitive use. The combined effect compares the "cumulative plus project" condition to "existing" conditions. This comparison accounts for the traffic noise increase from the proposed project-generated traffic in combination with traffic generated by past, present, and reasonably foreseeable projects. The following criteria have been utilized to evaluate the combined effect of the cumulative noise increase.

- *Combined Effects*: The cumulative with project noise level ("With Project") would cause a significant cumulative impact if a 3 dBA increase over existing conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive use (65 dBA for the proposed project).

Although there may be a significant noise increase due to the proposed project in combination with identified cumulative projects (combined effects), it must also be demonstrated that the proposed project has an incremental effect. In other words, a significant portion of the noise increase must be due to the proposed project. The following criteria have been utilized to evaluate the incremental effect of the cumulative noise increase.

- *Incremental Effects*: The "With Project" causes a 1 dBA increase in noise over the "No Project" noise level.

A significant impact would result only if both the combined and incremental effects criteria have been exceeded and the resulting noise level exceed the applicable exterior standard (65 dBA for the proposed project) at a sensitive use. Noise by definition is a localized phenomenon, and drastically reduces as distance from the source increases. Consequently, only proposed projects and growth due to occur in the general vicinity of the project site would contribute to cumulative noise impacts. Table 5-2, *Cumulative Traffic Noise Scenario*, lists the traffic noise effects along roadway segments in the project vicinity for "Existing", "No Project", and "With Project" scenarios, including incremental and net cumulative impacts.

First, it must be determined whether the Cumulative Plus Project Increase Above Existing Conditions (*Combined Effects*) is exceeded. Per Table 5-2, this criteria is exceeded along Somersville Road (between SR 4 and James Donlon Boulevard) and James Donlon Boulevard (between Somersville Road and Lone Tree Way). Next, under the *Incremental Effects* criteria, cumulative noise impacts are defined by determining if the ambient (No Project) noise level is increased by 1 dB or more and the resultant noise level exceeds the noise compatibility criteria, in this case 65 dBA. Based on the results of Table 5-2, these segments would not exceed the noise compatibility criteria of 65 dBA. Therefore, the proposed project, in combination with cumulative background traffic noise levels, would result in a less than significant cumulative impact in this regard.

Table 5-2
Cumulative Traffic Noise Scenario

Roadway Segment	Existing	No Project	With Project	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
	dBA @ 100 Feet from Roadway Centerline			Difference in dBA Between Existing and With Project		
Leland Road/ Delta Fair Boulevard						
Railroad Avenue to Somersville Road	62.8	65.7	65.6	2.8	-0.1	No
Buchannan Road						
Railroad Avenue to Somersville Road	64.5	65.1	63.1	-1.4	-2	No
Kirker Pass Road/ Railroad Avenue						
Clayton Road to SR-4	70.5	71.8	72.1	1.6	0.3	No
Somersville Road						
SR-4 to James Donlon Boulevard	58.5	61.3	63.0	4.5	1.7	No
James Donlon Boulevard						
Somersville Road to Lone Tree Way	57.4	60.2	63.6	6.2	3.4	No
Ygnacio Valley Road						
Clayton Road to Cowell Road	65.9	67.5	67.6	1.7	0	No
Clayton Road						
Bailey Road to Treat Boulevard/ Denkinger Road	66.4	67.8	67.7	1.3	-0.1	No
Treat Boulevard						
Clayton Road to Oak Grove Road	67.8	68.0	68.1	0.3	0.1	No
James Donlon Extension						
Railroad Avenue to Somersville Road	N/A	N/A	63.3	N/A	N/A	N/A

ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level
Traffic modeling is based upon data provided by Fehr and Peers, September 2012.

POPULATION AND HOUSING

The proposed project would not result in direct population growth as it does not propose construction of new homes or businesses, nor would it extend any utilities necessary for housing or business growth such as water, sewer, natural gas, or electricity. Construction of the proposed project would provide an alternate transportation route for an area of Contra Costa County that is experiencing significant traffic congestion. The proposed project would change the existing Hillside Low Density Residential land use designation to Open Space, allowing for resource conservation and agricultural and resource management. The pre-zone to Open Space (OS) District, with the option to provide an Agricultural Preserve Overlay, would further reduce the amount of allowable development within the project area. In addition, the access to James Donlon Boulevard would only be provided at Kirker Pass Road and Ventura Drive. When considered in combination with past, present, and reasonably foreseeable projects in the area, population growth may be cumulatively considerable. However, these cumulative projects were contemplated by the local General Plans and their impacts have been addressed through the environmental review process. Furthermore, the proposed project does not include a proposal for housing in the area. Because the proposed project would not directly or indirectly increase population, and the

proposed project would further protect the existing land uses, the proposed project's contribution to cumulative population and housing impacts would be less than significant.

TRANSPORTATION/TRAFFIC

Refer to Section 4.13, *Transportation/Traffic*, for a discussion of cumulative traffic impacts that would occur with the implementation and buildout of the proposed project. Cumulative impacts are discussed in association with the Cumulative (2030) No Project and Cumulative (2030) With Project conditions. The proposed project would make a cumulatively considerable contribution in combination with past, present, and reasonably foreseeable projects to result in a significant and unavoidable impact at the Kirker Pass Road/Ygnacio Valley Road/Clayton Road intersection and along State Route (SR) 4 between Bailey Road and Loveridge Road. Mitigation Measure TRA1 requires roadway improvements that are outside the jurisdiction of the City, thus Mitigation Measure TRA1 cannot be guaranteed with respect to the proposed project. Therefore, cumulative impacts are considered significant and unavoidable.

UTILITIES AND SERVICE SYSTEMS

The proposed project would not generate wastewater beyond stormwater runoff and would not generate solid waste beyond construction-related waste. The proposed project's stormwater drainage system would follow the Caltrans Design Manual procedures and City requirements. The proposed project would require water during roadway construction but not for ongoing operation and maintenance. It is anticipated that increases in demand from new developments would be addressed on a project-by-project basis by service providers prior to the approval of new development, and through CEQA review of each cumulative project. Because the proposed project would not increase the use or need of utilities and service systems, the proposed project's contribution to cumulative impacts would be less than significant.

5.3 GROWTH-INDUCING IMPACTS

As stated in the introduction, CEQA requires an EIR to address the "growth-inducing" effects of a proposed project. According to Section 15126.2(d) of the State CEQA Guidelines, the growth-inducing effects of a project are:

- Fostering economic or population growth, or the construction of additional housing
- Removing obstacles to population growth
- Taxing existing community services or facilities, requiring the construction of new facilities that could cause significant environmental effects
- Encouraging and facilitating other activities that could significantly affect the environment, either individually or cumulatively

5.3.1 FOSTER ECONOMIC GROWTH

The proposed project would generate employment opportunities during construction; however, these opportunities would be temporary and short-term in nature. Implementation of the proposed project would not generate new sources for long-term employment opportunities. The jobs generated by the proposed project would not foster economic growth within the City.

5.3.2 POPULATION AND HOUSING GROWTH

The proposed project would not construct housing or places of employment. The proposed project would provide an alternate east-west connection through Contra Costa County, to alleviate existing and

projected traffic congestion. Thus, the proposed project would not result in direct or indirect population and housing growth.

5.3.3 OBSTACLES TO GROWTH

Several types of projects can induce population growth by removing obstacles that prevent growth. For example, The expansion of a wastewater treatment plant would accommodate additional sewer connections within the service area and, therefore, would allow future construction and growth. The proposed project would provide vehicular access through an area that currently is largely undeveloped. However, the proposed project is identified in the City General Plan, County General Plan, and other planning documents, including the following:

- The Contra Costa County General Plan identifies the proposed project as a proposed route of regional significance (County, 2005).
- The City of Pittsburg General Plan identifies the proposed project as a route of regional significance (City, 2010).
- The Contra Costa County Transportation Authority Countywide Comprehensive Transportation Plan proposes the James Donlon Boulevard Extension completion (i.e., the proposed project) as one of its Route Specific Actions and the Buchanan Road Bypass (i.e., the proposed project) in the Comprehensive Transportation Project List (CCTA, 2009).
- The Metropolitan Transportation Commission (MTC) includes the proposed project in its transportation plan 2035 as project 230233 (MTC, 2009).
- The Extension is identified in the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) as a specific rural transportation project that would receive a permit under that Plan (2007).

Construction of the proposed project would provide an efficient transportation option for an area of Contra Costa County that is currently experiencing significant traffic congestion. As previously mentioned, the proposed project would not result in direct population growth as it does not propose construction of new homes or businesses, nor would it extend any utilities necessary for housing or business growth such as water, sewer, natural gas, or electricity.

Construction of the proposed roadway would provide access through a large tract of currently undeveloped land. Access to the proposed James Donlon Boulevard Extension would only be provided at Kirker Pass Road on the west and the existing intersection with Ventura Drive on the east, both existing roadways with existing development. No other access point would be provided for the proposed project.

As discussed in Section 4.12, *Population and Housing*, the proposed project is located within the City's Sphere of Influence and Urban Limit Line. In addition, the proposed project would amend the City General Plan land use designations from Hillside Low Density Residential to Open Space. The proposed project would also amend the Measure P pre-zone to Open Space (OS) District with an option to provide an Agricultural Preserve Overlay. These amendments would further reduce the amount of allowable development within the project area. In addition, the existing ranch would be retained and cattle grazing would continue. Therefore, the proposed project would not directly or indirectly increase populations and would continue to provide obstacles to growth.

5.3.4 TAX EXISTING COMMUNITY SERVICES OR FACILITIES

Substantial increases in population growth may tax existing community services and facilities, thus requiring the construction of new facilities that could cause significant environmental effects. The construction of new facilities may also result in the need to expand the service capacity, which would then allow future population growth.

As described in Chapter 1, *Introduction*, Section 1.6, *Effects Not Found To Be Significant*, and Section 4.14, *Utilities and Service Systems*, the proposed project would not result in significant environmental effects related to public services, utilities, and service systems. Therefore, the proposed project would not substantially tax existing public services and utilities.

5.3.5 OTHER INDIVIDUAL OR CUMULATIVE EFFECTS

The individual environmental effects of the proposed project are discussed in Chapter 4.0, *Existing Conditions, Environmental Impacts and Mitigation Measures*. The proposed project's potential to contribute to cumulative environmental effects was discussed above in Section 5.2, *Cumulative Impacts*, of this chapter. The proposed project would not be expected to generate other environmental effects above and beyond those analyzed in Chapter 4.0 or Section 5.2.

6.0 ALTERNATIVES

6.1 INTRODUCTION

Section 15126.6 of the California Environmental Quality Act (CEQA) Guidelines requires an EIR to describe and evaluate a reasonable range of alternatives to a project. The purpose of the evaluation is to identify ways to mitigate or avoid the significant effects that a project may have on the environment. An EIR does not need to consider every conceivable alternative to a proposed project, nor is it required to consider alternatives that are infeasible. Rather, it must consider a reasonable range of alternatives that could feasibly attain most of the project's basic objectives, while avoiding or substantially lessening any significant adverse environmental effects of the project. The EIR must evaluate the comparative merits of the alternatives and provide sufficient information about each alternative to allow meaningful evaluation, analysis and comparison with the proposed project to foster informed decision-making and public participation. State CEQA Guidelines Section 15126.6(e) requires that an EIR specifically evaluate the impacts associated with the alternative of 'no project' to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.

This chapter provides a brief description of the proposed project, project goals and objectives, and potentially significant project impacts, followed by a description and evaluation of each alternative selected for inclusion in the EIR. Finally, this chapter concludes with a comparison of the alternatives, identifying trade-offs and the environmentally superior alternative.

6.2 PROJECT SUMMARY

6.2.1 PROJECT CHARACTERISTICS

As described in Chapter 3, *Project Description*, The City proposes to construct a 1.71-mile extension of James Donlon Boulevard from the western edge of the approved Sky Ranch II Subdivision (Sky Ranch II) to Kirker Pass Road. From Sky Ranch II, the proposed roadway would merge from a four-lane road to a two-lane road, generally following the natural topography of the land, and would meet the City and the California Department of Transportation (Caltrans) standards and regulations for highway design for vehicles traveling up to 55 miles per hour (mph).

The intersection configuration at Kirker Pass Road would generally maintain the existing alignment of Kirker Pass Road and create a four-way, signalized, tee intersection with proposed Montreux Drive as the eastbound approach, proposed James Donlon Boulevard as the westbound approach and Kirker Pass Road as the northbound/southbound approaches (refer to Figure 3-7, *Site Plan*). The intersection would include the following design features:

- Northbound Kirker Pass Road – One left-turn lane, two through lanes and one free right-turn lane not controlled by the signal with a design speed of 50 mph.
- Westbound James Donlon Boulevard – Two left-turn lanes, one through lane and one right-turn lane.
- Southbound Kirker Pass Road – One left-turn lane, two through lanes, and one right-turn lane.
- Eastbound Montreux Drive approach – One left-turn lane and one through lane, and one right-turn lane.

Kirker Pass Road from Nortonville Road to the City limits would be upgraded from rural road standards to urban road standards. The profile of Kirker Pass Road would be raised to provide acceptable grades at the intersection with James Donlon Boulevard.

The four-lane portion of the James Donlon Boulevard at the Kirker Pass Road intersection would be designed to urban road standards with medians, curbs, gutters, sidewalks and streetlights. The two-lane portion of James Donlon Boulevard would be designed to rural road standards.

6.2.2 PROJECT OBJECTIVES

The following are the project objectives:

- Construct a limited access arterial roadway between Kirker Pass Road and Somersville Road south of the existing city limits, to serve regional circulation needs
- Provide a secondary access route for existing, planned and future residential developments in southeastern Pittsburg and southwest Antioch
- Relieve traffic congestion on Buchanan Road, which receives a high volume of east-west commute traffic between Antioch and Concord
- Reduce traffic volumes adjacent to Buchanan Park, Highlands Elementary School, and residences that access Buchanan Road directly.
- Construct a roadway that would meet City, County and Caltrans design and safety standards
- Avoid sensitive wildlife and plant habitat
- Avoid severe landslide areas

6.2.3 SIGNIFICANT PROJECT IMPACTS

Chapter 4, *Existing Conditions, Environmental Impacts and Mitigation Measures*, of this EIR analyzes the environmental impacts of the proposed project. The analyses conclude that the project would cause a number of potentially significant impacts, most of which could be mitigated to less than significant levels. However, significant unavoidable impacts were identified in Section 4.13, *Transportation/Traffic*. As described in Chapter 4, the proposed project's potentially significant impacts (before mitigation) are related to the following environmental parameters:

- Land Use and Planning
- Aesthetics
- Agriculture and Forestry Resources
- Air Quality/Greenhouse Gas Emissions
- Biological Resources
- Cultural and Paleontological Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Population and Housing
- Transportation/Traffic
- Utilities and Service Systems

All impacts were reduced to less than significant levels with the incorporation of mitigation measures, with the exception of Transportation/Traffic, which resulted in significant and unavoidable impacts for both project-level and cumulative impacts at the Kirker Pass Road/Ygnacio Valley Road/Clayton Road intersection and along State Route (SR) 4 between Bailey Road and Loveridge Road.

6.3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

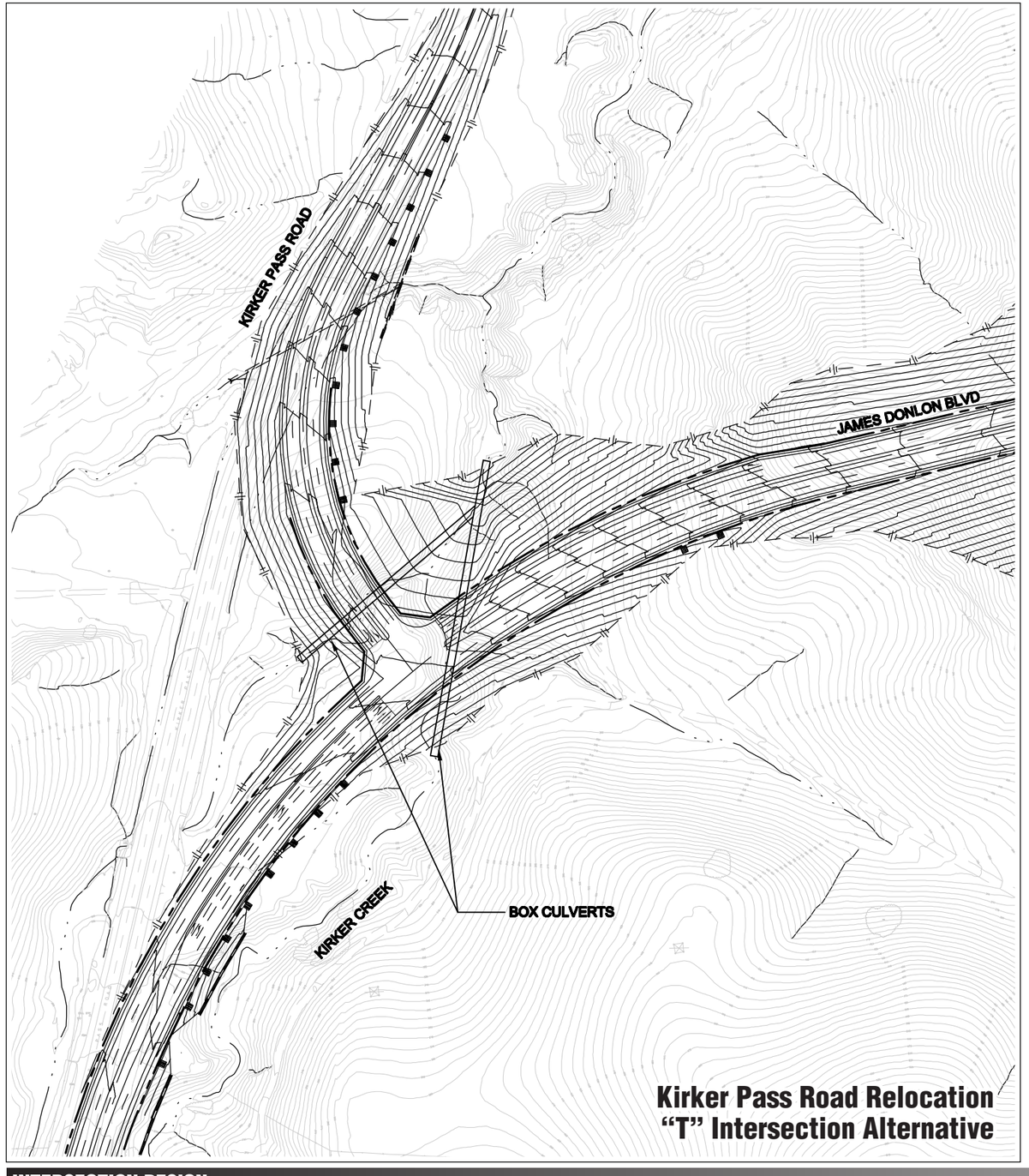
Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially lessen any significant environmental effects (State CEQA Guidelines, Section 15126.6[c]). Alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, also do not need to be considered (State CEQA Guidelines, Section 15126[f][2]). The City considered several alternatives to reduce impacts on agriculture, biological resources, cultural resources, and traffic. Per CEQA, the lead agency may make an initial determination as to which alternatives are feasible and warrant consideration and which are infeasible.

The project area and traffic corridor have been analyzed since 1993, with the Buchanan Road Bypass Program EIR, and then the 2003 Project Study Report (PSR) and 2012 Technical Memorandum, which was an update to the PSR. The following alternatives were initially considered but were eliminated from further consideration in this EIR.

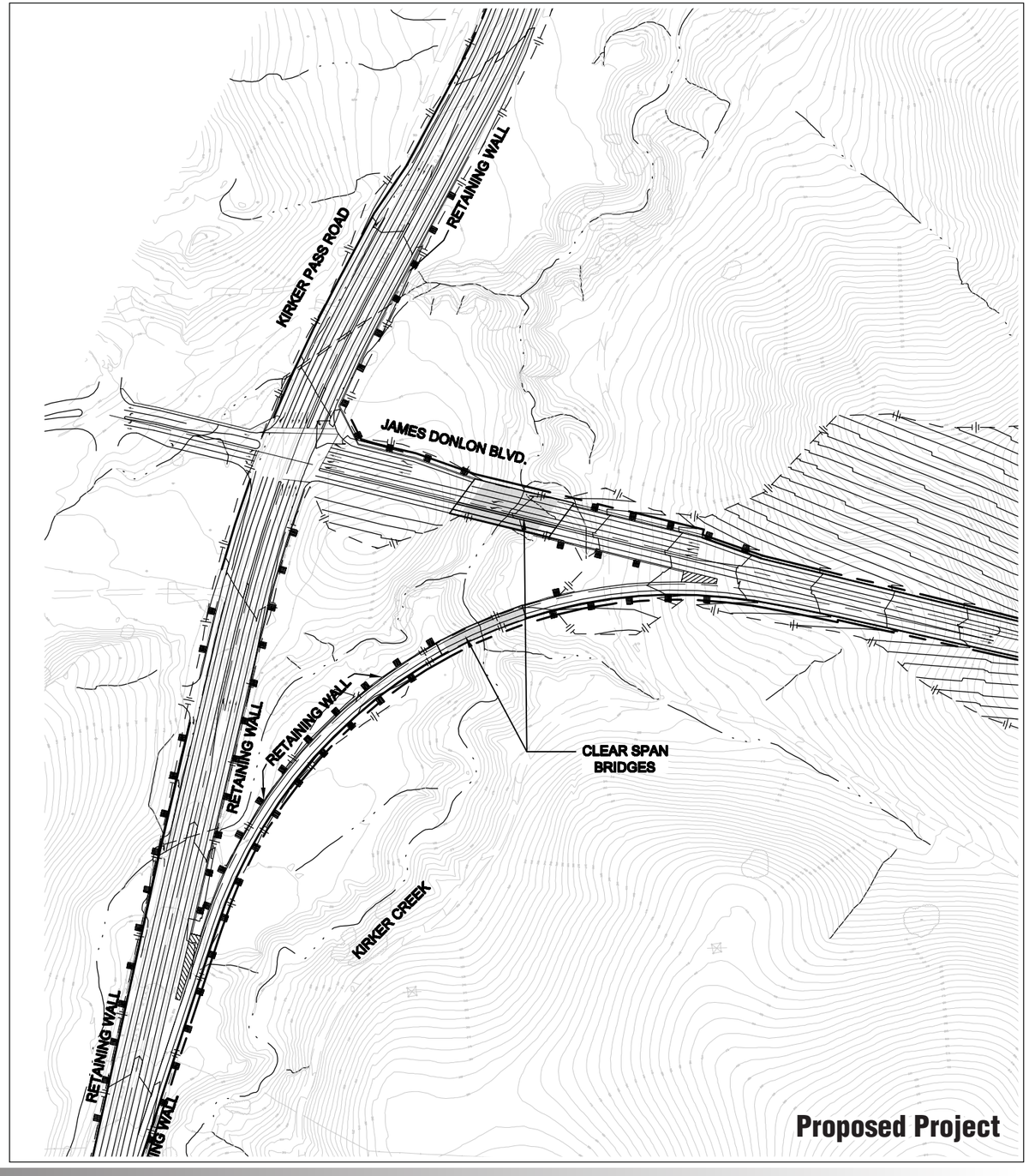
KIRKER PASS ROAD RELOCATION "T" INTERSECTION

This intersection alternative could be used in combination with any of the proposed James Donlon Boulevard alignments. It would result in realigning Kirker Pass Road, to create a sweeping curve, providing easier access for the east-west-trending traffic. The intersection configuration at Kirker Pass Road and the proposed roadway would consist of two lanes eastbound, two lanes westbound, a dedicated west-to-north right turn pocket, and an east-to-north left turn pocket. The intersection would be signalized. Due to the configuration of this intersection, portions of Kirker Pass Road would be abandoned and removed, as they would no longer be in use (Figure 6-1, *Kirker Pass Road Relocation "T" Intersection Alternative*).

This alternative would result in impacts to Kirker Creek as the bridge needed for the proposed roadway would be at an angle, instead of perpendicular, to the creek. An angled bridge results in a longer bridge length and additional impacts to Kirker Creek, beyond those of the proposed project. In addition, during discussion with East Contra Costa Habitat Conservancy, California Department of Fish and Game (CDFG), and the U.S. Fish and Wildlife Service (USFWS), this intersection alignment was eliminated for the purposes of biological resources, specifically the impacts to Kirker Creek and associated biological resources. Therefore, the Kirker Pass Road Relocation "T" Intersection was eliminated from further consideration.



Kirker Pass Road Relocation
"T" Intersection Alternative



Proposed Project

INTERSECTION DESIGN

0 250'
APPROXIMATE

12/7/12 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Kirker Pass Road Relocation "T" Intersection Alternative

Figure 6-1

SOUTHERN ALIGNMENT

The Southern Alignment traverses the southern portion of the project area (Figure 6-2, *Approximate Southern Alignment Alternative*). It commences at Ventura Drive/James Donlon Boulevard and immediately turns south through the Sky Ranch II Subdivision property. The alignment would then continue west, intersecting Kirker Pass Road south of the proposed project alignment. The alternative's proposed roadway alignment would follow the natural topography of the land and meet City and California Department of Transportation (Caltrans) standards and regulations for highway design. All other design elements of the Southern Alignment would generally mirror that of the proposed project including portions of the roadway being built to both highway and rural road standards.

The Southern Alignment would preclude the City-approved Sky Ranch II development, as it would bisect the property. In addition, The Southern Alignment would impact additional parcels, would be longer than the proposed project, resulting in the potential for greater grading impacts, and would cross Kirker Creek nearer a small pond that provides potential breeding habitat for California red-legged frogs and California tiger salamanders. This alignment also has the potential to create a traffic hazard due to its close proximity to the existing Kirker Pass Road/Nortonville Road intersection. Therefore, the Southern Alignment was eliminated from further consideration.

6.4 PROJECT ALTERNATIVES

6.4.1 SELECTION OF ALTERNATIVES

In accordance with State CEQA Guidelines Section 15126.6, the alternatives that would avoid or substantially lessen any of the significant effects of the proposed project and that would feasibly attain most of the basic proposed project objectives are analyzed below. Each alternative is discussed with respect to the relationship to the proposed project's objectives. The City has considered the following alternatives:

- No Project Alternative
- Alternative A – Northern Alignment
- Alternative B – Widen Buchanan Road

6.4.2 NO PROJECT ALTERNATIVE

Section 15126.6(e)(1) of the State CEQA Guidelines requires an EIR to analyze the No Project Alternative to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. Under the No Project Alternative, annexation of the properties into the city limits would not occur, no amendment would occur to the City General Plan, and the City's pre-zone designations would remain. The proposed project would not be constructed and the area would be built out according to the County General Plan. The project area would maintain the County land use designation of AL (Agricultural Land), and County zoning of A-4, Agricultural Preserve – 40-acre parcel minimum. Under the No Project Alternative, the existing land uses would remain, which include the working cattle ranch and open space.

not to scale

12/7/12 JN 130944-18838 MAS

JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Approximate Southern Alignment Alternative

Figure 6-2

ENVIRONMENTAL ANALYSIS

Aesthetics

Under The No Project Alternative, no physical changes would occur to the project area, and existing views of the project site and the surrounding area would be maintained. The No Project Alternative would not result in any aesthetic impacts. This alternative would reduce the aesthetic impacts as compared to the proposed project.

Agriculture and Forestry Resources

The No Project Alternative would eliminate impacts to agricultural resources, as the proposed project would not involve construction and therefore no agricultural land would be converted to non-agricultural land. There are no agricultural resource impacts under this alternative. This alternative would reduce impacts to agricultural resources as compared to the proposed project.

Air Quality

Under the No Project Alternative, no construction would occur. No development would occur under this alternative, thus no changes in air quality would occur. Therefore, the No Project Alternative would reduce air quality impacts as compared to the proposed project.

Biological Resources

Implementation of the No Project Alternative would completely avoid all the potentially significant, but mitigable, biological resource impacts associated with the proposed project because, this alternative would result in a physical or operational change to the project site.

Cultural Resources

The No Project Alternative would entirely avoid cultural resources impacts associated with the proposed project because no physical or operational changes to the project site would occur.

Geology and Soils

Under the No Project Alternative, no construction would occur and James Donlon Boulevard would not be extended. This alternative would avoid geology and soils impacts associated with the proposed project.

Hazards and Hazardous Materials

Under the No Project Alternative, no construction would occur and James Donlon Boulevard would not be extended. This alternative would completely avoid the hazards and hazardous materials impacts associated with the proposed project because no physical or operational changes would occur to the project site.

Hydrology and Water Quality

Under the No Project Alternative, no construction would occur and James Donlon Boulevard would not be extended. Therefore, no changes to drainage patterns, hydrology, or water quality would result from the implementation of this Alternative.

Land Use and Planning

Under the No Project Alternative, the James Donlon Boulevard Extension Project would not be constructed. The City General Plan and the County General Plan identify the proposed project as a route of regional significance. In addition, the proposed project is identified by the Metropolitan Transportation Commission (MTC) and the Contra Costa Transit Authority (CCTA). In addition, the City General Plan contains goals and policies that specifically refer to the proposed project. Therefore, this alternative would be inconsistent with the City and County General Plans.

Noise

Under the No Project Alternative, no construction would occur in the project area, thus eliminating the potential to generate noise or expose people to noise during construction. This alternative would also remove traffic from traveling through the project site, upon construction completion, thus eliminating any operational noise that would have resulted from the proposed project.

Population and Housing

Under the No Project Alternative, the proposed project would not be constructed. The project site would continue to operate as a cattle ranch, therefore, impacts to population and housing would occur as a result of this alternative.

Transportation/Traffic

Under the No Project Alternative, the James Donlon Boulevard Extension would not be constructed. Traffic congestion would remain along Buchanan Road, which receives majority of east-west traffic between Concord and Antioch. Section 4.15, *Transportation/Traffic*, analyzes conditions for Near-Term (2015) No Project and Cumulative (2030) No Project. These scenarios reflect the conditions occurring under this alternative. By Year 2015, the Buchanan Road/Somersville Road intersection level of service (LOS) would be reduced from LOS D to LOS E. By Year 2030, eight intersections would operate at an unacceptable LOS. In addition, by Year 2030, SR 4 would exceed delay thresholds at two roadway segments, which is a greater than the impacts anticipated under the proposed project. As such, the No Project Alternative would have greater transportation/traffic impacts as compared to the proposed project.

Utilities and Service Systems

The No Project Alternative would result in no physical or operational changes beyond existing conditions, resulting in no impacts on utilities and service systems. Therefore, impacts under this alternative are reduced as compared to the proposed project.

CONCLUSION AND RELATIONSHIP TO PROJECT OBJECTIVES

This alternative would reduce impacts associated with the proposed project for all resource areas except land use and planning and transportation/traffic. The No Project Alternative would have greater impacts than the proposed project on land use and planning and transportation/traffic. Moreover, this alternative would not meet four of the six project objectives. This alternative would avoid sensitive wildlife and plant habitats and would avoid severe landslide areas.

6.4.3 ALTERNATIVE A – NORTHERN ALIGNMENT

Under this alternative, the roadway alignment would commence at the edge of the approved Sky Ranch II subdivision and extend to the northwest, running parallel to the existing residential neighborhood to the north, joining Kirker Pass Road with a conventional "T" signalized intersection; refer to Figure 6-3, *Approximate Northern Alignment Alternative*. In addition, Alternative A would utilize a clear span bridge to cross Kirker Creek. The length of Alternative A would be approximately 1.9 miles, slightly longer than the proposed project. Similar to the proposed project, Alternative A would merge from a four-lane road to a two-lane road until just before its intersection with Kirker Pass Road, where it would again expand to a four-lane road. The alternative's proposed roadway alignment would follow the natural topography of the land and meet City and California Department of Transportation (Caltrans) standards and regulations for highway design. All other design elements of Alternative A would generally mirror that of the proposed project including portions of the roadway being built to both highway and rural road standards. Similar to the proposed project, Alternative A would require annexation of approximately 475 acres to the City, annexing Kirker Pass Road from Nortonville Road north to the City limit line, amending the City General Plan to designate all subject properties Open Space, and pre-zone the sphere of influence (SOI) to designate all subject properties as Open Space (OS) District, with an option to provide an Agricultural Preserve Overlay.

ENVIRONMENTAL ANALYSIS

Aesthetics

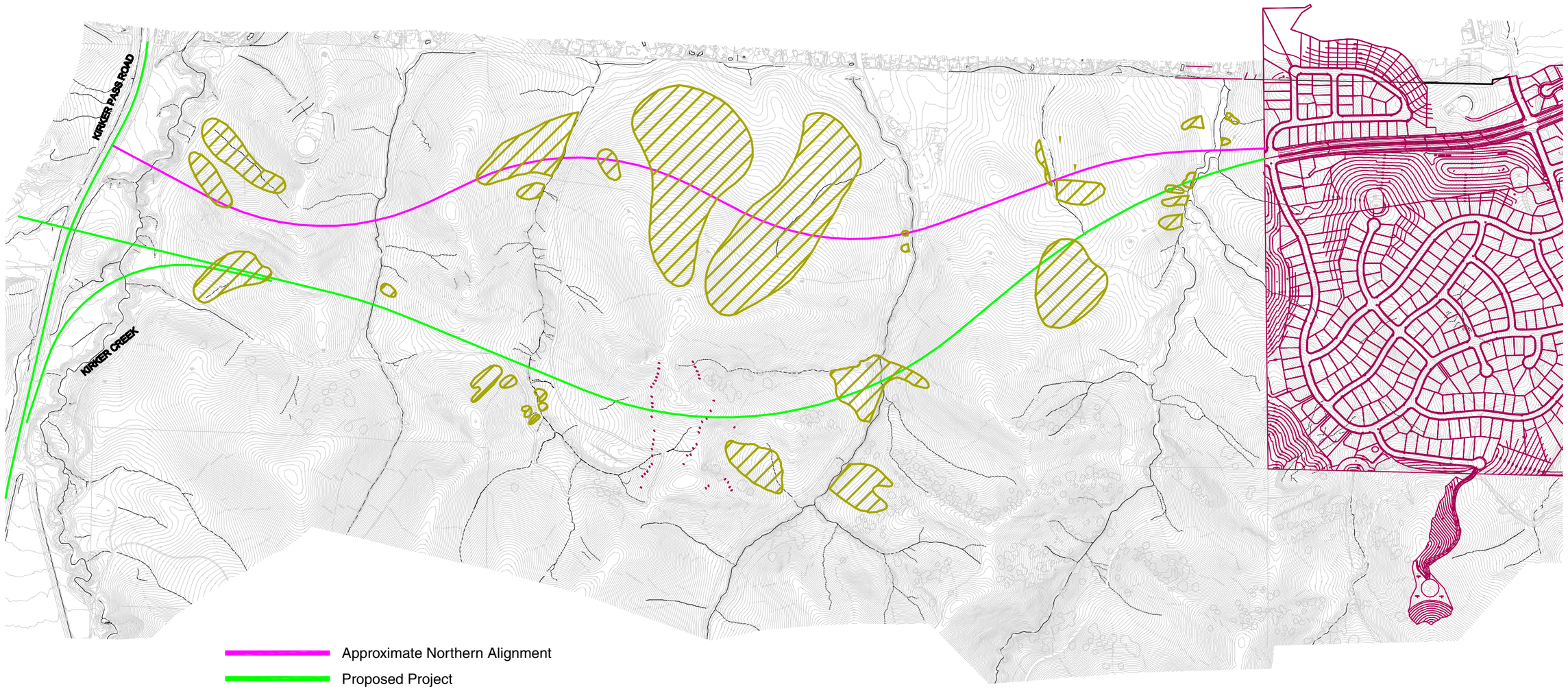
Alternative A would be slightly longer in length as compared to the proposed project. This alternative would require higher cut slope maximum heights as compared to the proposed project proposed project; however retaining walls needed for this alternative would be shorter than those required for the proposed project. Mitigation measures required for this alternative would be similar to those required under the proposed project. This alternative would be closer to the existing residential neighborhood south of Buchanan Road, and, unlike the proposed project, would not be partially hidden behind hills. Therefore, Alternative A would be considered environmentally inferior to the proposed project.

Agricultural Resources

As with the proposed project, Alternative A would not affect any land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Alternative A would affect a greater acreage of land under Williamson Act contracts as compared to the proposed project; however, impacts to the working ranch would be similar as compared to the proposed project, as culverts/undercrossing would continue to be provided to ensure continued cattle ranch operations. Therefore, Alternative A would have similar impacts associated with agricultural resources as compared to the proposed project.

Air Quality/Greenhouse Gas Emissions

Alternative A would have similar construction related impacts to air quality and greenhouse gas emissions as compared to the proposed project. Similar construction related mitigation measures would be required. Similar air quality impacts would occur by Year 2030 under this alternative, as the level of service (LOS) on area roadways would be similar to the proposed project. Therefore, Alternative A would have similar air quality and greenhouse gas emission impacts as compared to the proposed project.



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JAMES DONLON BOULEVARD EXTENSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Approximate Northern Alignment Alternative

Figure 6-3

Biological Resources

Alternative A would minimize or avoid impacts to oak woodland and oak savanna, minimize or avoid native grasslands, and would reduce impacts to rock outcroppings in comparison with the proposed project (refer to Appendix C, specifically Appendix C.5). This alternative would increase the impacts to annual grassland and could potentially increase impacts to chaparral and scrub, riparian woodland, and perennial wetland (seep) as compared to the proposed project. Alternative A would continue to impact Waters of the U.S. and State, crossing a similar number of drainages as compared to the proposed project. Alternative A has the potential to impact a larger acreage of wetlands as compared to the proposed project. Alternative A's potential impact to state and federal special-status species would be similar to those resulting from the proposed project. Potential impacts to California red-legged frog and California tiger salamander would be slightly reduced, because Alternative A would result in a roadway farther from a small pond that provides potential breeding habitat. The reduction of impacts to some habitat types, including oak woodland, oak savanna, and rock outcroppings, would reduce the potential impact to special status species that use these habitats for nesting and foraging (i.e., nesting/migratory birds, special-status bats such as pallid bats). However, the increase in impacts to habitat types, such as riparian woodland and chaparral and scrub, could potentially increase the impacts associated with plant and wildlife species that use these habitats (refer to Appendix C, specifically Appendix C.5). Mitigation measures required for Alternative A would be similar to those required for the proposed project. Overall, Alternative A would have similar, but slightly reduced, impacts to biological resources as compared to the proposed project.

Cultural Resources

Alternative A would have a greater impact upon the Thomas Ranch facility than the proposed project, as it would come within close proximity to existing buildings and structure. Therefore, Alternative A would have a greater potential to disrupt the historic resources of the Thomas Ranch facility, which is considered eligible for the National Register of Historic Places and the California Register of Historic Properties. These resources would be adjacent to the alignment proposed under Alternative A, which could result in impacting ancillary structures associated with the Ranch complex. The project area contains prehistoric resources; however, Alternative A would have similar impacts to these resources as compared to the proposed project. In addition, Alternative A would closer to known paleontological resources as compared to the proposed project, thus this alternative could potentially directly impact known paleontological resources. Alternative A would require mitigation measures similar to those required for the proposed project. Therefore, Alternative A impacts to cultural resources would be greater than those identified for the proposed project.

Geology and Soils

Alternative A would be located in the same geographic area as the proposed project and would be subject to similar geologic events (i.e., earthquakes) and soil limitations as the proposed project. Although the total amount of cut and fill would differ between this alternative and the proposed project, the effects of cut and fill would be similar. However, Alternative A would traverse three severe landslide areas, requiring a greater need for engineering repair (i.e., additional reinforcement required for the construction of the proposed roadway to offset the potential for a major landslide). This alternative would potentially reduce the amount of construction within the Lodo soil series, but could increase the area located within the Altamont group, including Altamont Clay, 15 to 30 percent slopes; therefore, this alternative would slightly increase the project area vulnerable to expansive soils when compared to the proposed project. Mitigation measures similar to those required for the proposed project would be required for Alternative A. Therefore, Alternative A would have greater impacts regarding geology and soils when compared to the proposed project.

Hazards and Hazardous Materials

Alternative A would be located in the same general area as the proposed project and would impact the same properties as the proposed project; therefore, this alternative would result in similar hazards and hazardous materials impacts as the proposed project. Alternative A has the potential to relocate more PG&E transmission towers than that proposed project. Alternative A would also have the potential to result in the need to lower the Kinder Morgan ten-inch, high pressure natural gas pipeline, similar to the requirements for the proposed project. These utility relocations and their associated hazards would be similar to those identified for the proposed project. Mitigation measures needed under this alternative would be similar to those required for the proposed project. Alternative A would result in similar impacts as compared to the proposed project.

Hydrology and Water Quality

Alternative A would have roughly the same amount of impact associated with storm water runoff volumes and would create a similar amount of new impermeable surface area. In addition, Alternative A would require similar earthmoving activities with significantly more remedial earthwork in the landslide areas. Alternative A would cross a similar number of drainages as the proposed project. Alternative A would require similar mitigation measures to those required for the proposed project. Alternative A impacts would be similar to the impacts identified for the proposed project.

Land Use and Planning

Alternative A would result in similar land use and planning impacts as the proposed project. Alternative A would not divide an established community, would not conflict with the East Contra Costa County HCP/NCCP, and would be consistent with the applicable land use plans, policies, and regulations, including the City and the County General Plans. Thus, Alternative A would have similar impacts as compared the proposed project.

Noise

Under Alternative A, the proposed roadway would be closer to residences than the proposed project and, thus, would not be as shielded by the surrounding topography in the western portion of the proposed roadway alignment. Noise impacts from construction (short-term) would be similar as compared to the proposed project because similar equipment would be used; however, the construction would be in closer proximity to the existing sensitive receptors, which could lead to slightly higher noise levels as compared to the proposed project. Mitigation measures required for Alternative A for construction impacts would be similar to those required for the proposed project. Therefore, construction noise impacts for Alternative A are anticipated to be slightly greater than the construction noise impacts associated with the proposed project. The noise impacts from roadway operations (long-term) associated with Alternative A would be similar as compared to the proposed project, because the vehicle numbers anticipated to use the proposed roadway would be similar. Under this alternative, the sensitive receptor near the western portion of the roadway would not be shielded by topography as compared to the proposed project. Noise levels are not anticipated to exceed the thresholds; however, they would be greater as compared to the proposed project. Therefore, noise impacts under Alternative A would be slightly greater than the impact identified for the proposed project.

Population and Housing

Alternative A would be located nearer the Thomas Ranch structures; however, the alternative would not require the removal or displacement of structures or their inhabitants. This alternative would have similar impacts with respect to indirect population growth as compared to the proposed project. Therefore,

impacts resulting from Alternative A would be similar impacts to population and housing as compared to the proposed project.

Transportation/ Traffic

Alternative A would result in similar traffic patterns conditions and hazards as compared to the proposed project. Alternative A would move the Kirker Pass Road/James Donlon Boulevard Extension intersection to the north as compared to the proposed project. Traffic counts and LOS on area roadways resulting from this alternative would be similar to those resulting from the proposed project; however, LOS at the Kirker Pass Road/James Donlon Boulevard intersection and on northbound Kirker Pass Road, sound of the proposed intersection, would be slightly worse as compared to the proposed project because this alternative would not allow for the free right-turn movement from northbound Kirker Pass Road to eastbound James Donlon Boulevard. Alternative A would require similar mitigation measures to those identified for the proposed project. Therefore, Alternative A would have similar impacts as compared to those identified for the proposed project.

Utilities and Service Systems

Alternative A would result in similar utilities and service systems impacts as the proposed project. Alternative A would include stormwater drainage facilities, require water for construction, but no water supply would be required for operation of the alternative, all features that are similar to those proposed for the proposed project. Mitigation measures under Alternative A would be similar to those required for the proposed project. Therefore, Alternative A would result in impacts similar to those identified for the proposed project.

CONCLUSION AND RELATIONSHIP TO PROJECT OBJECTIVES

This alternative would not reduce impacts associated with the proposed project. Alternative A – Northern Alignment would have similar impacts regarding agricultural resources, biological resources, hazards and hazardous materials, hydrology and water quality, land use and planning, population and housing, utilities and service systems, and transportation/traffic as compared to the proposed project. Alternative A would have greater impacts regarding aesthetics, air quality, cultural resources, geology and soils, and noise as compared to the proposed project. This alternative would meet five of the six project objectives. Alternative A would not avoid severe landslide areas.

6.4.4 ALTERNATIVE B – WIDEN BUCHANAN ROAD

Alternative B would construct improvements to the existing Buchanan Road. The James Donlon Boulevard Extension would not be constructed under this alternative; no annexation, City General Plan amendment, or pre-zone would be required. Alternative B would widen Buchanan Road from three lanes (two through lanes and one two-way left turn lane) to four through lanes (two through lanes in each direction) with a raised median. Left-turn pockets within the raised median would be provided as necessary. Alternative B would widen Buchanan Road for approximately 2.9 miles, beginning at the Kirker Pass Road/Buchanan Road intersection and ending at the Somersville Road/Buchanan Road intersection. The widening of Buchanan Road would require the City to reconfigure a minimum of seven intersections along Buchanan Road, including the Kirker Pass Road and Somersville Road intersections. Alternative B would require right-of-way acquisition from properties adjacent to Buchanan Road, in order to accommodate this alternative's proposed improvements. Depending on the engineering design and constructability, full and partial property acquisitions could occur on residential (up to approximately 66 residential properties, including single and multi-family residences), park, school, commercial, and industrial lands. Alternative B would require the realignment of portions of Contra Costa Canal and other drainage courses, which parallels Buchanan Road at the east end of this alternative. Alternative B would

include curb, gutters, streetlights, traffic signals and pedestrian crossings similar to existing conditions. Alternative B would also include signal timing during AM and PM traffic peak traffic hours.

As stated above, Alternative B would result in right-of-way acquisition to park and school lands. This would result in impacts that do not currently exist under the proposed project, No Project Alternative, or Alternative A. These impacts would require additional analysis regarding recreation and public services as related to schools. In addition, because right-of-way would be acquired for a transportation project from park lands, a Section 4(f) evaluation would be required for Alternative B.

ENVIRONMENTAL ANALYSIS

Aesthetics

Alternative B would expand an existing roadway and would require the full or partial acquisition of properties adjacent to Buchanan Road. This alternative would be located within the existing built environment and would not result in the need for hillside grading; however, the alternative has the potential to remove the row of properties adjacent to Buchanan Road. This would result in changed views for residences that currently are within neighborhoods. As discussed below, under Noise, Alternative A has the potential to change the noise levels of sensitive receptors that are not currently adjacent to Buchanan Road. This could result in the construction of sound walls that are longer and taller than existing walls. The proposed project identified seven key views to analyze, of these seven viewpoints, Key View 3 is located on Buchanan Road. Alternative B has the potential to change the foreground of this key view, eliminating grass and the baseball diamond and replacing it with the widening of Buchanan Road. Mitigation measures required for Alternative B would be similar to the proposed project; however, additional landscaping and screening would be required because Alternative B is located in an urbanized area. Alternative B would result in more severe aesthetic impacts than the proposed project.

Agriculture and Forestry Resources

Alternative B would eliminate impacts to agricultural resources, as the proposed roadway widening would disturb residential, park, school, and industrial land uses, rather than agricultural land uses. Therefore, Alternative B would have no impacts to agricultural resources.

Air Quality

Alternative B would require far less cut, fill, and other earthwork than the proposed project; however, Alternative B would require roadway demolition. This alternative would potentially require building demolition pertaining to properties that would be fully acquired to accommodate the Buchanan Road widening. Compared with the proposed project, this would potentially generate more construction related emissions of dust and construction vehicle exhaust, and would be closer in proximity to sensitive receptors, therefore, resulting in a more significant temporary impact. Alternative B requires improvements to an existing roadway, thus the release of aerially deposited lead could result from this alternative. Alternative B would be constructed in an area adjacent to sensitive receptors such as residences, parks, and schools, which could potentially expose sensitive receptors to substantial pollutant concentrations. In addition, long-term air quality impacts would be greater than the proposed project because the traffic patterns would not be redistributed as currently anticipated in the City General Plan, and therefore, the additional traffic on Buchanan Road would result in the release of more vehicle exhaust in proximity to sensitive receptors. Alternative B would have greater impacts on air quality as compared to the proposed project.

Biological Resources

Alternative B would widen the existing Buchanan Road from two lanes with a two-way left turn center lane to a four-lane roadway with a raised median. This could result in the removal of trees and landscaping that currently exist within the roadway corridor. In addition, Buchanan Road parallels, and ultimately crosses, the Contra Costa Canal on the eastern end of this alternative. Kirker Creek crosses under Buchanan Road on the western end of Alternative B. Mitigation measures regarding biological resources such as waters of the U.S. and State, wetlands, and migratory birds would be required as part of this alternative and would be similar to those required for the proposed project. As a result, impacts to biological resources resulting from Alternative B would be reduced when compared to the proposed project.

Cultural Resources

Alternative B would result in improvements on an existing roadway, within a built environment. Although not anticipated, there is the potential for structures adjacent to Buchanan Road to be older than 50 years and considered historical resources. This would result in a greater potential to disrupt historical resources as compared to the proposed project. The potential of disturbing previously unidentified archeological or paleontological resources would be less than that of the proposed project because Alternative B would be constructed in previously disturbed areas. Mitigation measures associated with Alternative B would be similar to those required by the proposed project concerning discovery of unknown resources. Therefore, Alternative B would have less potential to disrupt cultural resources as compared to the proposed project.

Geology and Soils

Alternative B would require very little cut and fill, as the project area has been previously graded during construction of Buchanan Road. There would be no potential impacts associated with active and/or dormant landslides under this alternative. Construction related erosion and siltation impacts would be less than the proposed project; however, adherence to best management practices (BMPs) and mitigation measures similar to those required for the proposed project would still apply. Alternative B would continue to be located in a seismically active area, thus impacts regarding groundshaking would be similar to those resulting from the proposed project. Therefore, Alternative B impacts regarding geology and soils would be less than the impacts identified for the proposed project.

Hazards and Hazardous Materials

Alternative B would result in similar hazards and hazardous materials impacts as the proposed project in regards to the potential emission or transport of hazardous materials. Alternative B would require utility relocations along Buchanan Road. In addition, because the improvements would be constructed along an existing roadway, there is potential for disturbance of soils containing aerially deposited lead or other hydrocarbons generally associated with roadways and car uses. Alternative B is located within one-quarter mile of multiple school sites, thus, any disturbance of contaminated soils could result in impacts to sensitive receptors. Alternative B would be located in an area that is urbanized and, therefore, would not be subject to wildland fire risks as the proposed project would. Mitigation measures similar to those required for the proposed project would be applicable to this alternative. Although the wildland fire hazards would be reduced under this alternative, the potential for hazardous material releases in close proximity to sensitive receptors, including schools, would be greater as compared to the proposed project. Therefore, Alternative B would have greater impacts regarding hazards and hazardous materials as compared to the proposed project.

Hydrology and Water Quality

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), Panel Numbers 06013C0307 and 06013C0326, indicate that Buchanan Road crosses through two areas identified as Flood Zone AE.[1] The first is located on the west end of Buchanan Road and is identified as a floodway area associated with Kirker Creek. The second area is located on the east end of Buchanan Road, near Somersville Road, and is associated with the Los Medanos Wasteway. Flood Zone AE. Flood Zone AE is defined as areas within the one percent annual flood (100-year flood); the floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the one percent annual chance flood can be carried within substantial increases in flood height. All other areas along Buchanan Road are located in Flood Zone X, defined as an area determined to be outside the 0.2 percent annual chance floodplain (500-year floodplain). Buchanan Road also parallels, and eventually crosses, the Contra Costa Canal, in the eastern portion of Alternative B. However, because Buchanan Road is an existing roadway, within an urban environment, the hazards to exposing people to flooding would be similar to the existing conditions and would be similar to the proposed project.

Alternative B would result in the realignment of drainage facilities and a portion of the Contra Costa Canal. Alternative B would not result in a significant amount of new impermeable surface area because the area is built-out with existing roadways, structures, driveways, and other urban features. This alternative would alter an existing creek crossing that is located within a FEMA identified floodway, thus increasing the potential for an altered drainage and/or flood pattern off-site. Alternative B would require less extensive earthmoving. Construction activities could result in runoff that could impact the waterways near the Buchanan Road, including Kirker Creek, Contra Costa Canal, and Los Medanos Wasteway. However, Alternative B would require mitigation measures similar to those required for the proposed project. Therefore, impacts on hydrology and water quality associated with Alternative B would be greater than the proposed project.

Land Use and Planning

Buchanan Road is an existing three-lane roadway within an existing community; however, Alternative B would result in full and partial property acquisitions, which could include the relocation of residences and businesses. Alternative B would not be consistent with the City General Plan Land Use Element goals and policies that depict the Buchanan Road Bypass. Alternative B would not be consistent with the County General Plan with regard to the identified routes of regional significance, because it would not create a Buchanan Road bypass. As such, Alternative B would have greater impacts to land use and planning when compared to the proposed project.

Noise

Alternative B would result in the construction of additional through traffic lanes to Buchanan Road. Construction equipment required to build this alternative would be similar to the proposed project; however, the construction activities would be adjacent to sensitive receptors, including schools and residences. In addition, this alternative could result in the demolition of structures adjacent to Buchanan Road, which would alter the noise environment to the properties that remain after demolition. This has the potential to increase noise levels to sensitive receptors that are not currently near or adjacent to Buchanan Road. Therefore, Alternative B would have greater impacts regarding noise as compared to the proposed project.

[1] Federal Emergency Management Agency. 2009. Flood Insurance Rate Map: Panels 06013C0307 and 06013C0326. Available at: https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1. Accessed 7 December 2012.

Population and Housing

Depending on the engineering design and constructability, full and partial property acquisitions could occur on residential (up to approximately 66 residential properties, including single and multi-family residences), park, school, commercial, and industrial lands. This could result in the need for relocating businesses as well as residents, thereby displacing a substantial number of existing housing and people. Impacts on population and housing as a result of Alternative B would be substantially greater than the proposed project.

Transportation/Traffic

The *Existing Buchanan Road Widening Feasibility Study*, prepared by RBF Consulting in January 2006 (refer to Appendix G), included a traffic screening for Alternative B. The Feasibility Study concluded that for Alternative B in year 2025, AM peak hour volumes would increase on Buchanan Road by 200 vehicles in the eastbound direction and approximately 1,000 vehicles in the westbound direction. During the PM peak hours, Buchanan Road vehicle volumes would increase by approximately 800 vehicles in the eastbound direction and 500 vehicles in the westbound direction. Overall, Alternative B would result in an increase of approximately 7,500 vehicles daily on Buchanan Road and a decline of approximately 5,000 vehicles on Pittsburg-Antioch Highway, SR-4 and Leland Road. This alternative was found to improve LOS as compared to no project; however, the Buchanan Road Bypass option was found to have the largest improvement to LOS on area roadways. Mitigation measures would be required similar to the proposed project, as area roadways would continue to experience traffic delays and improvements to roadways and intersections outside of the City's jurisdiction would continue under this alternative. Alternative B would not accommodate the anticipated traffic volume at the same levels of the proposed project. Therefore, Alternative B would have greater impacts to traffic and transportation when compared to the proposed project.

Utilities and Service Systems

Implementation of Alternative B could require the modification and relocation of existing utilities and infrastructure currently located adjacent to or within the Buchanan Road right-of-way. These relocations could include, but would not be limited to, water and sewer pipelines, canals, and electrical overhead utilities. As such, Alternative B would result in greater utilities and service systems impacts as compared to the proposed project.

CONCLUSION AND RELATIONSHIP TO PROJECT OBJECTIVES

Alternative B would reduce impacts associated with the proposed project for agricultural resources, biological resources, cultural resources, geology and soils, and hydrology and water quality. Alternative B would have greater impacts than the proposed project on aesthetics, air quality, hazards and hazardous materials, land use and planning, noise, population and housing, utilities and service systems, and transportation/traffic. This alternative would meet four of the six project objectives. This alternative would not construct a limited access arterial roadway south of the existing City limits nor would Alternative B provide a secondary access route between southeastern Pittsburg and southwestern Antioch.

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires an EIR to identify the environmentally superior alternative. The environmentally superior alternative is the one that would result in the fewest or least significant environmental impacts. Table 6.1, *Comparison of Alternative Environmental Impacts with Proposed Project*, provides a comparison of each alternative's impact in relation to the proposed project, as analyzed in Section 6.4, *Project Alternatives*.

Table 6.1
Comparison of Alternative Environmental Impacts with Proposed Project

Environmental Parameters	No Project – No Development	Alternative A	Alternative B
Aesthetics	▼	▲	▲
Agricultural Resources	▼	—	▼
Air Quality	▼	—	▲
Biological Resources	▼	▼	▼
Cultural Resources	▼	▲	▼
Geology and Soils	▼	▲	▼
Hazards and Hazardous Materials	▼	—	▲
Hydrology and Water Quality	▼	—	▲
Land Use and Planning	▲	—	▲
Noise	▼	▲	▲
Population and Housing	▼	—	▲
Public Services, Utilities and Service Systems	▼	—	▲
Transportation/Traffic	▲	▲	▲

— Impact is equivalent to impact of proposed project (neither environmentally superior nor inferior).
▲ Impact is greater than impact of proposed project (environmentally inferior).
▼ Impact is less than impact of proposed project (environmentally superior).

The context of an environmentally superior alternative is based on the consideration of several factors including the reduction of environmental impacts, the project objectives, and an alternative's ability to fulfill the objectives with minimal impacts to the surrounding environment. According to Table 6.1, the No Project Alterative would be the environmentally superior alternative because it would eliminate most of the potentially significant impacts of the proposed project. However, while the No Project Alternative is the environmentally superior alternative, it is not capable of meeting most of the basic objectives of the project. Section 15126.6(e)(2) of the State CEQA Guidelines Section 15126.6 states that if the no project alternative is found to be environmentally superior, "the EIR shall also identify an environmentally superior alternative among the other alternatives.

Alternative A would construct the proposed James Donlon Boulevard Extension to the north of the proposed project. As depicted in Table 6-1, above, this alternative would slightly reduce impacts to biological resources and would increase impacts to aesthetics, cultural resources, geology and soils, noise, and transportation/traffic. Impacts would be similar to the proposed project for all remaining resources.

Alternative B would eliminate impacts to agricultural lands and would reduce impacts to biological resources, cultural resources, and geology and soils. Alternative B would have greater impacts to the remaining resources, with substantially greater impacts regarding population and housing. In addition, Alternative B would result in impacts to recreation and public services; impacts that do not occur under the proposed project.

Therefore, due to the slight reduction of impacts to biological resources, and the similar impacts to the majority of the remaining resources, Alternative A, Northern Alignment, is considered the environmentally superior alternative.

7.0 OTHER CEQA CONSIDERATIONS

7.1 SIGNIFICANT AND UNAVOIDABLE IMPACTS

Section 15126(b) of the California Environmental Quality Act (CEQA) Guidelines requires an EIR to discuss the significant impacts of a proposed project that cannot be reduced to a less than significant level. These impacts are referred to as "significant and unavoidable impacts" of the project. As discussed in Chapter 4, *Existing Conditions, Environmental Impacts and Mitigation Measures*, of this EIR, the proposed project, if implemented, would result in a significant and unavoidable traffic impact given that the Kirker Pass Road / Ygnacio Valley Road / Clayton Road intersection would degrade the level of service (LOS) from LOS D to LOS E during the PM peak hour under Cumulative (2030) conditions. In addition, the Ygnacio Valley Road / Cowell Road intersection, under Cumulative (2030) conditions, would increase the intersection V/C by more than 0.01, at an intersection that would operate at unacceptable LOS E regardless of the proposed project during the PM peak hour. There is no feasible mitigation to reduce these impacts to less than significant.

7.2 SIGNIFICANT IRREVERSIBLE CHANGES

Section 15126.2(c) of the State CEQA Guidelines requires an EIR to discuss the significant irreversible environmental changes that would result from implementation of a proposed project. Examples include: uses of nonrenewable resources during the initial and continued phases of the project (because a large commitment of such resources make removal or nonuse thereafter unlikely); primary or secondary impacts of the project that would generally commit future generations to similar uses (e.g., highway improvements that would provide access to a previously inaccessible area); and/or irreversible damage that could result from any potential environmental accidents associated with the project.

Implementation of the proposed project would require the long-term commitment of natural resources and land. Actions related to the development of the project would result in an irretrievable commitment of nonrenewable resources, such as energy supplies and other construction-related resources. Fossil fuels are currently the principal source of energy. The proposed project would incrementally reduce existing supplies of fuel, such as fuel oil, natural gas and gasoline. The nature of the project as a roadway extension fosters the continued norm of human reliance on automobiles as their primary mode of transportation. This represents a long-term commitment to consumption of essentially nonrenewable resources.

No explosives or other hazardous materials would be used on the property. Accidental spills of fuel, paints or other construction-related materials might occur on the project site during construction. However, these types of accidents would be limited because site development would be implemented and overseen by experienced construction workers. Such potential spills would not result in irreversible environmental changes.

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