Gilbert Property

Draft
Environmental Impact Report
SCH# 2007012075

Prepared For
the City of Oakley

April 2007

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DRAFT ENVIRONMENTAL IMPACT REPORT
GILBERT PROPERTY PROJECT

State Clearing House # 2007012075

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1. INTRODUCTION

INTRODUCTION

The Gilbert Property Draft Environmental Impact Report (Draft EIR) has been prepared in accordance with the California Environmental Quality Act of 1970, Pub. Res. Code §§ 21000-21178, as amended (CEQA) and the Guidelines for Implementation of the California Environmental Quality Act, Cal. Code Regs. title 14, §§ 15000-15387 (CEQA Guidelines). The City of Oakley is the lead agency for the environmental review of the Gilbert Property project evaluated herein and has the principal responsibility for approving the project. As required by Section 15121 of the CEQA Guidelines, this EIR will (a) inform public agency decision-makers, and the public generally, of the significant environmental effects of the project, (b) identify possible ways to minimize the significant adverse environmental effects, and (c) describe reasonable and feasible project alternatives which reduce environmental effects. The public agency shall consider the information in the Draft EIR along with other information that may be presented to the agency.

PROJECT DESCRIPTION

The Gilbert Property project site is bounded by the vacant Emerson property, the Cypress Grove project, Delta Vista Middle School, and Iron House Elementary School to the west, Cypress Road to the south, and the Contra Costa Water District Canal (CCWD/USBR Canal) to the north and east, which separates the project site from the open space acreage to the north. A 55-acre portion of land immediately to the north of the CCWD/USBR canal and the project site at the end of Sellers Avenue is held in escrow, pursuant to a Memorandum of Understanding and Development Agreement, for future conveyance to the City of Oakley as a community park.

The proposed 120-acre Gilbert Property project includes the development of residential uses, including trails, a park, levees, a storm water detention pond, as well as the infrastructure improvements necessary to accommodate the new development located in the City of Oakley, Contra Costa County, California (See Figure 3-1, Regional Location Map and Figure 3-2, Project Location Map in Chapter 3 of this Draft EIR.)

PURPOSE OF THE EIR

As provided in the CEQA Guidelines Section 15021, public agencies are charged with the duty to avoid or minimize environmental damage where feasible. The public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social issues.

CEQA requires the preparation of an EIR prior to approving any project that may have a significant effect on the environment. For the purposes of CEQA, the term *project* refers to the whole of an action, which has the potential for resulting in a direct physical change or a

reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]). With respect to the proposed Gilbert Property project, the City has determined that the proposed development is a *project* within the definition of CEQA, which has the potential for resulting in significant environmental effects.

The EIR is an informational document that apprises decision makers and the general public of the potential significant environmental effects of a proposed project. An EIR must describe a reasonable range of feasible alternatives to the project and identify possible means to minimize the significant effects. The lead agency, which is the City of Oakley for this project, is required to consider the information in the EIR along with any other available information in deciding whether to approve the application. The basic requirements for an EIR include discussions of the environmental setting, environmental impacts, mitigation measures, alternatives, growth-inducing impacts, and cumulative impacts.

TYPE OF DOCUMENT

The CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This document is considered a tiered project-level EIR as defined by CEQA. The concept of "tiering" refers to the coverage of general environmental matters in broad program-level EIRs, with subsequent focused environmental documents prepared for individual projects that are consistent with and that implement the program. CEQA and the CEQA Guidelines encourage the use of tiered environmental documents to reduce delays and excessive paperwork in the environmental review process. In a tiered EIR, much of the technical documentation is incorporated by reference from the information contained in the program EIR, thereby allowing the tiered EIR to concentrate on project-specific issues.

The guidelines for the development of the proposed project area, which includes the Gilbert site as well as the neighboring Emerson and Burroughs properties to the west and east of the proposed project are based upon the September 2003 Development Agreement between the property owners and the City of Oakley. The Development Agreement is based upon the original M-8 land use designation for the proposed project site, as designated by Contra Costa County prior to the incorporation of the City of Oakley. When the Oakley incorporated, the proposed project area was included within the City's sphere of influence, and was designated for residential/mixed use development. The Development Agreement for the proposed project area coincides with the land-use designations set forth in the City of Oakley General Plan. In addition, a Negative Declaration was prepared for the 2003 Development Agreement the findings made in this Negative Declaration are utilized in the analysis included within this DEIR. This DEIR tiers off of both the General Plan EIR. Therefore, the tiering of the environmental analysis for the proposed project relies on the Oakley 2020 General Plan EIR for the following:

(a) a discussion of general background and setting information for environmental topic areas;

(b) overall growth-related issues;

(c) issues that were evaluated in sufficient detail in the Oakley 2020 General Plan EIR for which there is no significant new information or change in circumstances that would require further analysis; and

(d) long-term cumulative impacts.

Therefore, this tiered EIR should be viewed in conjunction with the Oakley 2020 General Plan EIR and the Negative Declaration for the 2003 Development Agreement. The purpose of this EIR is to evaluate and disclose any new or changed environmental impacts resulting from the implementation of the proposed project.

Unless otherwise noted in this EIR, mitigation measures identified in the Oakley 2020 General Plan EIR that apply to the proposed project would be required for implementation as part of the project. Implementation of new or substitute mitigation measures identified within the technical sections of Chapter 4 in this EIR, as well as in the Initial Study provided in Appendix C, would also be required to mitigate significant project effects.

EIR PROCESS

The EIR process begins with the decision by the lead agency to prepare an EIR, either during a preliminary review of a project or at the conclusion of an Initial Study. Once the decision is made to prepare an EIR, the lead agency sends a Notice of Preparation (NOP) to appropriate government agencies, and when required, to the State Clearinghouse (SCH) in the Office of Planning and Research (OPR), which will ensure that responsible State agencies reply within the required time. The SCH assigns an identification number to the project, which then becomes the identification number for all subsequent environmental documents on the project. Applicable agencies have 30 days to respond to the NOP, indicating, at a minimum, reasonable alternatives and mitigation measures they wish to have explored in the Draft EIR and if they will be responsible agencies or trustee agencies for the project. An NOP was prepared and circulated for the Gilbert Property project from January 25, 2007 to February 23, 2007. A public scoping meeting was held on February 7, 2007.

As soon as the Draft EIR is completed, a Notice of Completion is filed with the OPR and public notice is published to inform interested parties that a Draft EIR is available for agency and/or public review, and to provide information regarding location of drafts and any public meetings or hearings that are scheduled. The Draft EIR is circulated for a minimum period of 45 days, during which time reviewers may make comments. The lead agency must evaluate and respond to comments in writing, describing the disposition of any significant environmental issues raised and explaining in detail the reasons for not accepting any specific comments concerning major environmental issues. If comments received result in the addition of significant new information to an EIR after public notice is given, the revised EIR or affected chapters must be recirculated for another public review period with related comments and responses.

Once the lead agency is satisfied that the EIR has adequately addressed the pertinent issues in compliance with CEQA, a Final EIR will be prepared, which is made available for review by the public and commenting agencies. Before approving a project, the lead agency shall certify that

the Final EIR has been completed in compliance with CEQA, presented to the decision-making body of the lead agency, and reviewed and considered by that body, and that the Final EIR reflects the lead agency's independent judgment and analysis.

The findings of fact prepared by the lead agency must be based on substantial evidence in the administrative record and must include an explanation that bridges the gap between evidence in the record and the conclusions required by CEQA.

Based on these findings, the lead agency may also prepare a Statement of Overriding Considerations (Statement) as part of the project approval process. If the decision-making body elects to proceed with a project that would have unavoidable significant impacts, then a Statement explaining the decision to balance the benefits of the project against unavoidable environmental impacts must be prepared.

SCOPE OF THE DRAFT EIR

State CEQA Guidelines Section 15126.2(a) states, in pertinent part:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced.

Pursuant to these guidelines, the scope of this Draft EIR addresses specific issues and concerns identified as potentially significant. These were determined based on the preparation of an Initial Study. The Initial Study prepared for the proposed project concluded that several environmental issues would result in a potentially significant impact. The complete text of the Initial Study is contained in Appendix C.

Resources identified for study in this Draft EIR include the following:

- Aesthetics;
- Land use and agricultural resources (including Williamson Act contracts);
- Traffic and circulation;
- Air quality;
- Noise;
- Hazards;
- Biological resources;
- Geology;
- Mineral resources (including gas and oil resources);
- Historical and cultural resources;
- Hydrology, water supply, and water quality; and
- Public services and utilities.

The evaluation of the above issues is presented in subchapters 4.2 through 4.13. Each subchapter is divided into four sections: Introduction, Environmental Setting, Regulatory Context, and Impacts and Mitigation Measures. Impacts determined to be less-than-significant as identified in the Initial Study are dismissed from further analysis in this Draft EIR.

Impacts that are determined to be significant in Chapter 4, and for which feasible mitigation measures are not found to be available to reduce those impacts to a less-than-significant level are identified as significant and unavoidable. Chapter 6 in the Draft EIR presents a discussion and comprehensive list of all significant and unavoidable impacts identified in Chapter 4.

COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

The City of Oakley received sixteen (16) comment letters, during the open comment period, on the Notice of Preparation (NOP). A copy of each letter is provided in Appendix B of this DEIR. The following letters were authored by representatives of State and local agencies and other interested parties:

- Boles, Kevin – Public Utilities Commission
- Cahoon, J.U. Captain – Department of California Highway Patrol
- Edwards, Jeff – Contra Costa Health Services
- Hall, Tom – California Department of Water Resources
- Miller, Heidi – Department of Energy
- Naumovich, Lech – California Native Plant Society: East Bay Chapter
- O'Bryant, Dennis – Department of Conservation
- Piros, Mark – Department of Toxic Substances Control
- Sable, Timothy – Department of Transportation (January 29, 2007)
- Sable, Timothy – Department of Transportation (February 5, 2007)
- Seedall, Mark – Contra Costa Water District
- Skrel, Jennifer – Ironhouse Sanitary District
- Townsend, Jim – East Bay Regional Park District
- Tracy, Justin – Tri Delta Transit
- Wong, Christina – Greenbelt Alliance
- Wood, Kathy – United States Department of the Interior, Bureau of Reclamation

The following list, categorized by issue, summarizes the concerns expressed in the NOP comment letters:

Land Use and Agricultural Resources (Chapter 4.3)	*Concerns related to the proposed project:* • Compliance with Williamson Act. • Prime farmland conversion.
Transportation and Circulation: (Chapter 4.4)	*Concerns related to the proposed project:* • The DEIR should include safety to motorists and pedestrians, specifically grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings. • Increased road hazards from the increase in traffic volume including pedestrian/bicycle safety. • Impacts in terms of trip generation, distribution, and assignment. • Adequate transit facilities based upon existing City of Oakley plans.
Air Quality: (Chapter 4.5)	*Concerns related to the proposed project:* • Air Quality impact from increase in vehicle trips (PM_{10}, NO_x, and SO_x.)
Hazards (Chapter 4.7)	*Concerns related to the proposed project*: • Destruction of all on-site wells and septic tanks pursuant to Contra Costa Environmental Health requirements. • Possible on-site contaminants.
Biological Resources (Chapter 4.8)	*Concerns related to the proposed project*: • Impacts to adjacent wetlands restoration project. • Impacts to federal, state-listed, and special status species.
Cultural Resources (Chapter 4.11)	*Concerns related to the proposed project*: • Compliance with the National Historic Preservation Act.
Hydrology, Water Supply, and Water Quality: (Chapter 4.12)	*Concerns related to the proposed project*: • Provide safe and reliable supply of water. • Reduction in Water Quality. • Flood risks and levee requirements.
Public Services and Utilities (Chapter 4.13)	*Concerns related to the proposed project*: • Provide safe and reliable wastewater disposal. • Provide adequate park area.
Alternatives Analysis (Chapter 5)	*Concerns related to the proposed project*: • Environmentally superior alternative.
Statutorily Required Sections (Chapter 6)	*Concerns related to the proposed project*: • Growth inducing impacts. • Cumulative impacts.

Organization of the Draft EIR

The Gilbert Property Draft EIR is organized into the following sections:

Chapter 1 – Introduction
Provides an introduction and overview describing the intended use of the Draft EIR and the review and certification process, as well as summaries of the chapters included in the Draft EIR and summaries of the environmental resources that would be impacted by the project.

Chapter 2 – Executive Summary
Summarizes the elements of the project and the environmental impacts that would result from implementation of the proposed project, describes proposed mitigation measures and indicates the level of significance of impacts after mitigation. Summarizes alternatives that would reduce or avoid significant impacts.

Chapter 3 – Project Description
Provides a detailed description of the proposed project, including its location, background information, major objectives, and technical characteristics.

Chapter 4 – Environmental Assessment of the Gilbert Property Project
Contains a project-level and cumulative analysis of environmental issue areas associated with the proposed project. The subchapter for each environmental issue contains four parts: Introduction, Environmental Setting, Regulatory Context, and Impacts and Mitigation Measures.

Chapter 5 – Alternatives Analysis
Describes the alternatives to the proposed project, their respective environmental effects, and a determination of the environmentally superior alternative.

Chapter 6 – Statutorily Required Sections
Provides discussions required by CEQA regarding impacts that would result from the proposed project, including a summary of cumulative impacts, potential growth-inducing impacts, significant and unavoidable impacts, and significant irreversible changes to the environment.

Chapter 7 – EIR Authors / Persons Consulted
Lists report authors who provided technical assistance in the preparation and review of the Draft EIR.

Chapter 8 – References
Provides bibliographic information for all references and resources cited.

Appendices
Includes the NOP, the Initial Study, and additional technical information.

2. EXECUTIVE SUMMARY

2. EXECUTIVE SUMMARY

INTRODUCTION

The Executive Summary chapter provides an overview of the Gilbert Property project (described in detail in Chapter 3 – Project Description), and summarizes the conclusions of the environmental analysis, provided in detail in Chapter 4. This chapter also summarizes the alternatives to the proposed project that are described in Chapter 5, Alternatives Analysis, and identifies the Environmentally Superior Alternative. Table 2-1, at the end of this chapter, provides a summary of the environmental effects of the proposed project identified in each technical section of Chapter 4. The table contains the environmental impacts, the significance of the impacts for the proposed project, the proposed mitigation measures, and the significance of the impacts after the mitigation measures are implemented.

PROJECT DESCRIPTION AND LOCATION

The proposed 120-acre Gilbert Property project site is located in the City of Oakley, Contra Costa County, California (See Figure 3-1, Regional Location Map, and Figure 3-2, Project Location Map in Chapter 3 of this Draft EIR).

The Gilbert Property project site is bounded by the partially developed Cypress Grove project, Delta Vista Middle School, Iron House Elementary School, the currently vacant Emerson property to the west, the vacant Burroughs property to east, Cypress Road to the south, and the Contra Costa Water District Canal (CCWD/USBR Canal) to the north. The canal separates the project site from approximately 1,200-acres of open space to the north. The canal separates the project site from approximately 1,200-acres of open space to the north. As a result of complete agreements reached between the State of California, the City of Oakley, environmental groups and the prior land owners, the property north of the canal was conveyed to public entities and the parcels south of the canal were designated for development. A substantial portion of this area north of the canal is currently owned by the State of California and is anticipated to be restored to wetlands in the near future. A 55-acre portion of land immediately north of the CCWD/USBR canal and the project site at the end of Sellers Avenue is held in escrow, pursuant to a Memorandum of Understanding and Development Agreement, for future conveyance to the City of Oakley as a community park.

The property owners of the Gilbert, Emerson and Burroughs Properties entered into Memorandums of Understanding and Development Agreements during 2002 and 2003 resulted in a comprehensive plan that would result in (1) vested rights for residential development on approximately 271 acres south of the Contra Costa Canal, including the Gilbert Property; (2) conveyance to the State of California (more specifically, to the Department of Water Resources) of approximately 1,150 acres adjusted to the Delta for wetland and Marsh habitat restoration; and (3) conveyance to the City of approximately 100 acres for park, recreational, trail and

community center purposes, including approximately 27 acres within the Burroughs property south of the Contra Costa Canal.

Consistent with the Development Agreement entered into between the City and the landowner in October 2003, the project site includes residential development, trails, parks, levees, a storm water detention pond, as well as the infrastructure improvements necessary to accommodate the new development (See Figure 3-3 in Chapter 3 of this Draft EIR).

The residential component of the proposed project development includes 510 residential units.

ENVIRONMENTAL IMPACTS AND MITIGATION

The City of Oakley adopted the City's first comprehensive General Plan in 2002, following certification of a programmatic EIR. The General Plan was self-mitigating.

Under CEQA, a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, mineral, flora, fauna, ambient noise, and objects of historic or aesthetic significance. Implementation of the proposed project could result in significant impacts on those resource areas discussed below.

This Draft EIR tiers off of the programmatic General Plan EIR and the baseline land use assumptions in the General Plan, which assumes the level of development contemplated under the Development Agreement and discusses project level mitigation measures that could be implemented by the applicant to reduce potential adverse impacts to a level that is considered less-than-significant. Such mitigation measures are noted in this Draft EIR and are found in their corresponding section. If an impact is determined to be significant or potentially significant, mitigation measures are identified, when applicable. These mitigation measures are summarized in Table 2-1 below. The mitigation measures presented in the Draft EIR will form the basis of the Mitigation Monitoring Plan. An impact that remains significant after including mitigation measures is considered an unavoidable adverse impact.

The following list of potential environmental effects, mitigation measures, and alternatives constitutes the identification of issues to be resolved and areas of controversy as required under CEQA Guidelines §15123(b)

Aesthetics

The Aesthetics chapter summarizes the existing regional and project area aesthetics and visual setting. Project-specific aesthetics issues such as the effect on scenic vistas, trees, historic buildings, scenic highways, the existing visual character of the site and its surrounding areas, and light and glare are addressed. This chapter includes an analysis of the existing setting, and identifies the thresholds of significance, impacts, and mitigation measures.

The Draft EIR identifies the following project level impacts as less-than-significant: impacts to scenic vistas and natural resources along scenic highways; impacts to the existing visual

character of the site and its surroundings; alteration of the existing agricultural character of the project site; and cumulative impacts related to a change in the visual character of the region. The Aesthetics chapter identifies the creation of light or glare as a potentially significant impact that would be reduced to a less-than-significant level with implementation of the mitigation included in the Draft EIR.

Land Use and Agricultural Resources

The Land Use and Agricultural Resources chapter evaluates the consistency of the proposed project with the City of Oakley's adopted plans and policies including the Development Agreement. The General Plan land use diagram has designated the proposed project site for residential development since 1990, when the property was part of Contra Costa County's unincorporated area. The chapter further assesses the compatibility of the proposed project with the surrounding land uses, both existing and proposed. The land use chapter identifies land use impacts regarding any inconsistencies with adopted plans and policies created by the approval of the proposed project. This chapter of the EIR also summarizes the status of the existing agricultural resources of the site and the site vicinity, including identification of any prime/unique farmland or farmland of Statewide Importance on the project site. The analysis further includes a discussion regarding conversion of farmland to non-agricultural uses. This chapter of the EIR includes an analysis of the existing setting, identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies.

The Draft EIR identifies the following as less-than-significant land use impacts: land use compatibility impacts from the agricultural-residential interface between existing and proposed uses in the project area; impacts resulting from inconsistency with General Plan and zoning goals and policies; and cumulative land use impacts. The loss of Prime Farmland and Farmland of Statewide Importance was analyzed at programmatic level in the General Plan EIR. The General Plan EIR determined that the loss of Prime Farmland would be a less-than-significant impact. Because the proposed project would be required to implement General Plan policies and programs, including those that are designed to preserve the agricultural heritage of Oakley, and the Development Agreement, for which a Negative Declaration was adopted, a less-than-significant impact would occur. The cumulative environmental effect on agriculture is also identified as less-than-significant in the Land Use and Agricultural Resources chapter.

Traffic and Circulation

The Transportation and Circulation chapter also tiers off of the General Plan EIR and this DEIR project level analysis based on a traffic study prepared by Abrams Associates. The chapter includes evaluation of the operations at each of the study intersections for five different scenarios. The scenarios include an evaluation of the existing conditions, existing plus planned and approved projects (background) conditions, background plus project conditions, cumulative without project conditions, and cumulative with project conditions. In addition, a detailed site circulation and access discussion is included to determine the adequacy of the proposed site plan in accordance with generally accepted traffic engineering standards. Emergency access, transit, pedestrian, and bicycle facilities are also discussed and analyzed to ensure adequacy of the

proposed facilities based upon existing City of Oakley plans. This chapter of the EIR also includes an analysis of the existing setting, identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies.

The following impacts are identified as less-than-significant in the Draft EIR: impacts related to site access and circulation, impacts regarding emergency vehicle access, impacts related to adequate parking, and traffic impacts related to the need for traffic signals at currently unsignalized intersections. The remaining impacts are identified as potentially significant: the project's contribution to unacceptable LOS operations on Main Street at O'Hara Avenue, Cypress Road, and at Malicoat Avenue; an increase in traffic flows that would create congestion at the current railroad crossing at Cypress Road; lack of bus service to the project area; cumulative impacts of the proposed project at the intersection at Main Street and Cypress Road. However, these impacts were all found to be less-than-significant after implementation of mitigation measures identified in the chapter.

Air Quality

The Air Quality chapter is based on an air quality analysis conducted by Don Ballanti. The chapter summarizes the regional air quality setting, with a description of the climate and meteorology of the project area, historical air quality data, and current efforts to attain and maintain the State and federal air quality standards. The chapter summarizes air quality data from the closest monitoring station to the project site. The chapter also quantifies agricultural emissions from current use of the project site, and identifies sensitive receptors for air pollutants in the vicinity of the project or along roads providing access to the site. Carbon monoxide levels near intersections selected as having the greatest potential of carbon monoxide problems are also identified. In addition, emissions from construction equipment exhaust and windblown dust are identified. The level of significance of impacts identified in the analyses is determined using the thresholds of significance recommended by the Bay Area Air Quality Management District, and mitigation measures and monitoring strategies are recommended for all impacts identified to be significant.

Impacts related to increased TAC emissions as a result of construction, as well as impacts related to the effects of increased traffic and carbon monoxide concentrations, are identified as less-than-significant. Impacts related to construction dust emissions are identified as potentially significant prior to mitigation and less-than-significant after implementation of the identified mitigation measures. Significant and unavoidable impacts related to project-specific regional air pollutant emissions and cumulative effects of the proposed project on air quality are also identified in the chapter.

Noise

The Noise chapter is based on an environmental noise assessment performed by Illingworth and Rodkin, Inc. The chapter includes an analysis of the existing setting, identification of the thresholds of significance, impacts, and mitigation measures. The noise chapter evaluates potential noise impacts associated with traffic and construction activities.

The Noise chapter identifies noise impacts related to land use compatibility and impacts related to construction noise as less-than-significant. Impacts related to permanent noise increases at existing residences, as well as cumulative impacts related to permanent noise increases at existing residences, are identified as less-than-significant upon implementation of mitigation measures in the chapter.

Hazards

The Hazards chapter analyzes the existing setting, describes existing hazardous materials on-site, and determines if the proposed project would exacerbate or create hazardous conditions in the area, or if the proposed project would bring people into contact with hazardous materials or substances. The section identifies any such hazardous materials or substances that may be present at the project site or adjacent sites and identifies mitigation measures designed to reduce their impacts. This chapter identifies the thresholds of significance and impacts, and specifies mitigation measures.

The Draft EIR finds the following impacts to be less-than-significant: presence of pesticide and/or herbicide residues on the project site, impacts related to the underground storage tanks at the Blue Star Gas station southeast of the project site, and long-term hazards-related impacts from the proposed project in combination with existing and future developments in the Oakley area. The following impacts are identified as potentially significant prior to mitigation and less-than-significant with the implementation of mitigation measures identified in the Draft EIR: impacts from abandoned natural gas production wells; presence of aboveground storage tanks and underground storage tanks; impacts involving possible oil spillage from past site uses; impacts to the off-site pipeline from project construction activities; impacts related to the presence of asbestos and lead particles on the project site; exposure of residents to safety hazards due to the construction of additional residences near the Contra Costa Canal and the stormwater detention ponds; and exposure of project residences to wildland fires.

Biological Resources

The Biological Resources chapter is based on an assessment prepared by Sycamore Associates and includes a description of the potential effects on plant communities, wildlife, and wetlands, including adverse effects on rare, endangered, candidate, sensitive, and special-status species that were identified during site reconnaissance. Additionally, information obtained from Zenter and Zenter was used in order to determine potential effects to special status species.

The Biological Resources section describes the impact the project would have on biological resources identified by the biologist and assigns mitigation measures, if feasible, to limit the impacts to a less-than-significant level. In addition, this chapter identifies the required permits relating to biological resources.

The Draft EIR finds that project impacts to special-status dune and sand mound insects and wildlife corridors would be less-than-significant. However, the following impacts are identified as potentially significant: impacts to jurisdictional waters of the U.S. and waters of the State; impacts to protected and heritage trees; impacts to special-status brachiopods; impacts to special-

status fish species; impacts to the silvery legless lizard. Impacts to the giant garter snake; impacts to the western pond turtle; impacts to the western burrowing owl; impacts to raptors and migratory birds; impacts to the Swainson's hawk; impacts to special-status bat species; and contribution to cumulative impacts to biological resources in the project area. However, these impacts would be less-than-significant after implementation of mitigation identified in the Draft EIR.

Geology

The Geology chapter relies upon a technical soils report undertaken by ENGEO Inc. This chapter summarizes the setting, and describes the potential effects from earthquakes, landslides, and soil liquefaction, as well as identifies any unique geological features within the project site. Soil types, their characteristics, and their impacts on construction are also addressed. The chapter includes an analysis of the existing setting, and identifies the thresholds of significance, impacts, and mitigation measures.

The Draft EIR finds that cumulative impacts related to geological impacts and hazards would be less-than-significant. The following impacts would be potentially significant prior to mitigation: damage to foundations, pavements, and other structures constructed within the project site as a result of heaving and settlement of expansive soils; impacts related to weak or compressible clay; loss of structural support due to potential liquefaction; increased soil erosion, wind and water erosion, and siltation of local drainage during and after construction from excavation and grading activities; and grading and import of fill. However, these potentially significant impacts would be less-than-significant after implementation of mitigation measures identified in the Draft EIR.

Mineral Resources (including gas and oil resources)

This chapter identifies and describes the mineral resources setting and summarizes the potential impacts to mineral resources that could result from implementation of the proposed project. The chapter also specifically addresses the impacts to known gas and oil wells on the project site. In addition, this section includes an analysis of the setting, and identification of thresholds of significance, impacts, and mitigation measures.

The Draft EIR finds the following two impacts to be less-than-significant: loss of availability of a known State, regional, and/or locally valuable mineral resource, as identified in the Oakley General Plan, and long-term loss of mineral resource availability from the proposed project in combination with existing and future developments in the Oakley area.

The Historical and Cultural Resources chapter summarizes the setting and briefly describes the potential construction-related effects on historical, archaeological, and paleontological resources. This chapter of the EIR includes an analysis of the existing setting, identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies.

The Draft EIR finds the following impacts to be potentially significant prior to mitigation and less-than-significant after implementation of identified mitigation measures: substantial adverse

changes in the significance of a historical resource; unearthing of previously unknown archaeological resources as a result of project grading; and the project's contribution to cumulative cultural resources impacts.

Hydrology, Water Supply and Water Quality

The Hydrology, Water Supply and Water Quality chapter of the EIR describes the existing setting and the project's potential effects on water quality, storm drainage, and groundwater supply. The section address issues regarding water quality, drainage patterns, erosion, siltation and other effects on existing watercourses, and the potential of placing people or structures in danger from flooding. Mitigation measures designed to reduce impacts to a less-than-significant level are assigned to reduce any potential impacts that are identified in the analysis.

The Draft EIR finds the following impacts to be less-than-significant: exposure of future and adjacent residents to flood hazard; change in peak stormwater flows; degradation of water quality in the Contra Costa Canal and Dutch Slough; the project's contribution to cumulatively increased stormwater drainage into the existing drainage system; and the project's contribution to cumulative water quality impacts downstream of the project site. The following impacts are identified as potentially significant prior to mitigation and less-than-significant after implementation of the mitigation measures identified in the Draft EIR: maintenance of levees surrounding the project; adequate water supply and delivery for new residents; maintenance of stormwater lake; and maintenance of the storm drain system.

Public Services and Utilities

The Public Services and Utilities chapter summarizes setting information and identifies potential new demand for services, including wastewater systems, solid waste disposal, law enforcement, fire protection, schools, libraries, parks and recreation, and electric power. This chapter includes an analysis of the existing setting, identification of the thresholds of significance, impacts, and mitigation measures.

The Draft EIR finds the following impacts to be less-than-significant: impacts related to adequate wastewater treatment and infrastructure capacity; number of enrolled students exceeding capacity; adequate provision of parks and recreation space for new residents; and need for additional waste disposal/recycling services. The Draft EIR indicates that ratios of law enforcement personnel to residents and fire department personnel to residents, as well as cumulative impacts to wastewater collection facilities would be potentially significant prior to mitigation and less-than-significant after implementation of the identified mitigation.

As stated in Chapter 1, Introduction, the Initial Study prepared for the proposed project concluded that above environmental issues would result in a potentially significant impact. The remaining issues were addressed in the Initial Study, which can be found Appendix C.

Summary of Project Alternatives

The following summary provides brief descriptions of the three alternatives to the proposed project that are evaluated in this Draft EIR. For a more thorough discussion of project alternatives, please refer to Chapter 5, Alternatives Analysis.

No Project/No Development Alternative

The No Project/No Development Alternative would allow the continued existence of the Gilbert Property site in its current agricultural state. While this alternative would not meet with project objectives, and would not be consistent with the City's General Plan or the Development Agreement, CEQA requires that the No project/No Development Alternative be addressed.

Minimum Density Clustered Development Alternative

The Minimum Density Clustered Development Alternative would reduce the total number of units on the proposed project site to 271 total units, the lowest density allowable by the Development Agreement for the proposed project site. The park uses would remain the same under this alternative. However, the residences would be clustered into denser groupings, creating opportunities to avoid certain resources as well as creating additional open space and greenbelt areas. The alternative would result in fewer impacts than the proposed project related to the following: Aesthetics; Transportation and Circulation; Air Quality; Noise; Hazards; Biological Resources; Mineral Resources; Historical and Cultural Resources; Hydrology, Water Supply and Water Quality; and Public Services and Utilities.

Reduced Intensity Development Alternative

The Reduced Intensity Development Alternative reduces the overall number of houses on the project site from 510 to 454. Under this alternative, the land used would be the same as under the proposed project, with the residential uses on larger lots. The parks would be located in the same areas identified on the proposed Land Use Plan. The alternative would result in fewer impacts than the proposed project related to the following: Aesthetics; Transportation and Circulation; Air Quality; Noise; Hazards; Historical and Cultural Resources; Hydrology, Water Supply and Water Quality; and Public Services and Utilities.

Environmentally Superior Alternative

For this project, the environmentally superior alternative would result in development of the site under the Minimum Density Clustered Development Alternative. Impacts to aesthetics would be reduced because fewer housing units would be developed, resulting in less introduction of light and glare to the area. Because fewer residents would occupy the area, fewer vehicle trips would be made, thereby reducing traffic, air quality, and noise impacts. In addition, hydrology, water supply, and water quality impacts would be reduced under the Minimum Density Clustered Development Alternative because fewer impervious surfaces would be created compared to the proposed project due to the fewer number of rooftops. Hazards would also be reduced because

fewer people would be exposed to potential hazards such as pesticides and asbestos. Public services and utilities impacts would be reduced compared to the proposed project because not as much infrastructure and public service demand would be generated due to the fewer number of housing units under the Minimum Density Clustered Development Alternative. Finally, impacts to cultural resources would be reduced due to the fewer number of site pads graded and the decreased risk of cultural resource disturbance.

It should be noted that the development agreement for the proposed project gives the property owner vested rights to develop the proposed property consistent with the densities assumed in the existing General Plan, the Memorandums of Understanding and the Development Agreement. Thus, during the term of the existing development agreement, which expires in 2013, the No Project Alternative and the Maximum Density Clustered Alternative would result in reduced densities that would fall below planned densities for the City of Oakley. This could negatively affect the City's ability to meet state-mandated housing-goals.

Thus, although impacts would still occur related to land use and agriculture, biological resources, and geology, the Minimum Density Clustered Development Alternative is considered the environmentally superior alternative.

TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
4.2 Aesthetics			
4.2-1 Impacts to scenic vistas and natural resources along scenic highways.	LTS	*None required.*	N/A
4.2-2 Degradation of the existing visual character or quality of the project site or project area.	LTS	*None required.*	N/A
4.2-3 Impacts associated with new sources of light and glare.	PS	*4.2-3 During construction the developer shall install hooded and/or shielded street lights to avoid excessive lighting on adjacent properties, for the review and approval of the Community Development Department.*	LTS
4.2-4 Alteration of the existing agricultural character of the project site.	LTS	*None required.*	N/A
4.2-5 Cumulative impacts related to a change in the visual character of the region.	LTS	*None required.*	N/A
4.3 Land Use and Agricultural Resources			
4.3-1 Compatibility with existing or planned surrounding land uses.	LTS	*None required.*	N/A
4.3-2 Consistency with adopted General Plan designations and	LTS	*None required.*	N/A

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
policies.			
4.3-3 Impacts to Prime Farmland or Farmland of Statewide Importance, Williamson Act contracts and conversion of farmland.	LTS	*None required.*	N/A
4.3-4 Consistency with existing zoning.	LTS	*None required.*	N/A
4.3-5 Increases in the intensity of land uses in the region due to the proposed project and all other projects in the Oakley area.	LTS	*None required.*	N/A
4.3-6 Conversion of Prime Farmland to urban uses.	LTS	*None required.*	N/A
4.3-7 Cumulative loss of agricultural land.	LTS	*None required.*	N/A
4.4 Transportation and Circulation			
4.4-1 Project contribution to unacceptable LOS operations on Main Street at O'Hara Avenue, Cypress Road, and at Malicoat Avenue.	PS	*4.4-1 Prior to final map approval, the proposed project would contribute to the mitigation of the above-identified impacts by paying the proposed project's fair share of the cost through the payment of regional traffic fees to the East Contra Costa Regional Fee and*	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		Finance Authority (ECCRFFA) and the City's Transportation Impact Fee.	
4.4-2 Impacts related to the need for traffic signals at currently unsignalized intersections.	LTS	*None required.*	N/A
4.4-3 Traffic impacts related to the railroad crossing on Cypress Road.	PS	*4.4-3(a) Prior to approval of building permits, the applicant shall contribute its fair share, to be determined by the City at the time of the approval of the building permits, toward the reconstruction of the Main Street/Cypress Road intersection as determined by the City Engineer for the following improvements:* • *To provide approximately 600 feet of storage on Main Street for the southbound left-turn and northbound right-turn movements.* • *Interconnect all signals.* *4.4-3(b) Implement Mitigation Measure 4.4-1.*	LTS
4.4-4 Impacts related to alternative transportation facilities.	PS	*4.4-4 The project shall include bus stops on both sides of Cypress Road near Sellers Avenue. The final design and location of these bus stops shall be subject to the approval of the Oakley City Engineer prior to approval of final maps. The City Engineer shall*	LTS

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		coordinate with Tri-Delta Transit as to the placement of the bus stops.	
4.4-5 Impacts related to site access and circulation.	LTS	*None required.*	N/A
4.4-6 Impacts regarding emergency vehicle access on and surrounding the proposed project.	LTS	*None required.*	N/A
4.4-7 Impacts relating to the presence and availability of adequate parking.	LTS	*None required.*	N/A
4.4-8 Cumulative impacts of the proposed project at the intersection at West Cypress Road and O'Hara Avenue.	PS	*4.4-8(a) Applicant shall be responsible for the project's fair share of the cost to revise the Main Street southbound approach with two left-turn lanes, one through lane, and one shared through and right-turn lane. The project's fair share funding shall be submitted as determined by the City Engineer prior to the recording of final maps.* *4.4-8(b) Implement Mitigation Measure 4.4-1.*	LTS
4.5 Air Quality			
4.5-1 Impacts related to construction dust emissions.	PS	*4.5-1 Consistent with guidance from the BAAQMD, and prior to issuance of a grading permit, the applicant*	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		shall incorporate the following mitigation measures into the construction contract documents, which shall be submitted for the review and approval of the City Engineer: • *Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers or dust palliatives;* • *Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard;* • *Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;* • *Sweep daily (preferably with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality;* • *Sweep streets daily (preferably with water*	

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		sweepers) if visible soil material is carried onto adjacent public streets; • *Apply non-toxic soil stabilizers to inactive construction areas;* • *Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);* • *Limit traffic speeds on unpaved roads to 15 mph;* • *Install sandbags or other erosion control measures to prevent silt runoff to public roadways; and* • *Replant vegetation in disturbed areas as quickly as possible.* *The above measures include all feasible measures for construction emissions identified by the Bay Area Air Quality Management District for large sites.*	
4.5-2 Impacts related to increased TAC emissions as a result of construction.	LTS	*None required.*	N/A
4.5-3 Impacts relating to effects of increased traffic and carbon monoxide concentrations.	LTS	*None required.*	N/A

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
4.5-4 Impacts related to regional air pollutant emissions as a result of the proposed project.	LTS	*None required.*	N/A
4.5-5 Impacts relating to the cumulative effects of the proposed project on air quality.	S	*4.5-5 Implement Mitigation Measure 4.5-1.*	SU
4.6 Noise			
4.6-1 Noise impacts related to land use compatibility.	PS	*4.6-1(a) The applicant shall construct noise barriers prior to occupancy to reduce noise at exterior use areas adjacent to Cypress Road and Sellers Avenue to 65 dB L_{dn} or less. The applicant/developer shall include the following mitigation measures on the improvement plans to be approved by the City Engineer prior to the approval of the improvement plans or initiation of any grading or construction activity:* • *The barriers shall be constructed solidly over the entire surface and at the base. Openings or gaps between barrier materials or the ground decrease the noise reduction provided by a noise barrier; and* • *Suitable materials for barrier construction*	LTS

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Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		shall have a minimum surface weight of 3 lbs./ft^2 (such as one-inch thick wood, masonry block, concrete, or metal). *4.6-1(b) Project-specific acoustical analyses shall be conducted during final detailed design of the project when building elevations and floor plans are available in order to determine how interior noise levels can be reduced to 45 dBA L_{dn} or lower. The future noise environment at the project site shall require sound-rated construction methods and the provision of forced-air mechanical ventilation so that windows could be kept closed at the occupants' discretion to control noise. Noise insulation features include sound-rated windows, sound-rated doors, and careful attention to exterior wall detailing (including caulking and possible sound insulating upgrades such as resilient channels, or stucco exterior siding). The final detailed design of noise insulation features necessary to maintain interior noise levels at acceptable levels shall be completed at the time that the final plans are available and prior to the issuance of a building permit.*	
4.6-2 Impacts related to permanent	LTS	*None required.*	N/A

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
noise increases at existing residences.			
4.6-3 Impacts related to construction noise.	PS	*4.6-3(a)* *Noise-generating activities at the construction site or in areas adjacent to the construction site associated with the project in any way shall be restricted to the hours of 7:30 am to 5:30 pm, Monday through Saturday. Construction is prohibited on Sundays and City holidays.* *4.6-3(b)* *The applicant/developer shall include the following mitigation measures on the improvement plans to be approved by the City Engineer prior to the approval of the improvement plans or initiation of any grading or construction activity:* • *Equip all equipment driven by internal combustion engines with intake and exhaust mufflers that are in good condition and appropriate to the equipment. Unnecessary idling of internal combustion engines should be strictly prohibited;* • *Stationary noise-generating equipment, such as air compressors or portable power generators,*	LS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		must be located the greatest distance applicable from sensitive receptors. Construct temporary noise barriers to screen stationary noise-generating equipment when located near adjoining sensitive land uses; • *Utilize "quiet" air compressors and other stationary noise sources where technology exists; and* • *Designate a "disturbance coordinator" who would be responsible for responding to any local complaints regarding construction noise. The disturbance coordinator will determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented.*	
4.6-4 Cumulative impacts related to permanent noise increases at existing residences.	LTS	*None required.*	N/A
4.7 Hazards			
4.7-1 Presence of pesticide and/or herbicide residues on the project site.	LTS	*None required.*	N/A

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
4.7-2 Impacts from abandoned natural gas production wells.	PS	*4.7-2(a)* *Prior to the issuance of a grading permit, the project developer shall provide to the City of Oakley a detailed soils assessment, in the vicinity of the abandoned wells located on the project site, for the review and approval of the City Engineer. If contaminants are not detected in the environmental assessment, further mitigation shall not be required. If contamination is identified, a remediation plan shall be submitted, and all contaminants shall be removed to the satisfaction of the City of Oakley and Contra Costa County Environmental Health Services.* *4.7-2(b)* *Prior to the issuance of a grading permit, the developer shall locate and test for any surface leakage of all former gas production wellheads on the project site pursuant to DOG guidelines and under the supervision of a DOG engineer. If leakages are not detected, further mitigation shall not be required. If leakages are identified, the wells shall be sealed, a remediation plan shall be submitted, and all contaminants shall be removed to the satisfaction of the City of Oakley and Contra Costa County Environmental Health Services. Additionally, the developer shall notify the DOG of planned*	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact		*Level of Significance prior to Mitigation*	*Mitigation Measures*		*Level of Significance after Mitigation*
				improvements located within 10 feet of the well to evaluate the need for possible access or engineering controls.	
4.7-3	Impacts to the off-site pipeline from project construction activities.	PS	*4.7-3*	*Prior to commencement of grading and construction, the construction contractor, the developer, and a representative from the City's Engineering Department shall meet on the project site and prepare site-specific safety guidelines for construction in the field to the satisfaction of the City Engineer. The safety guidelines shall be noted on the improvement plans and be included in all construction contracts involving the project site.*	LTS
4.7-4	Impacts related to the presence of asbestos and lead particles on the project site.	PS	*4.7-4*	*Prior to issuance of a demolition permit by the City for any on-site structures, the project proponent shall provide a site assessment that determines whether any structures to be demolished contain asbestos and/or lead paint. If structures do not contain asbestos or lead-based paint, no further mitigation is required. If any structures contain asbestos, the application for the demolition permit shall include an asbestos abatement plan consistent with local, state, and federal standards, subject to approval by the City Engineer. If lead-based paint is found, all loose and peeling paint shall be removed and disposed of by a licensed and*	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		certified lead paint removal contractor, in accordance with local, state, and federal regulations. The demolition contractor shall be informed that all paint on the buildings shall be considered as containing lead. The contractor shall take appropriate precautions to protect his/her workers, the surrounding community, and to dispose of construction waste containing lead paint in accordance with local, state, and federal regulations subject to approval of the City Engineer.	
4.7-5 Exposure of residents to safety hazards due to the construction of additional residences near the Contra Costa Canal and the stormwater detention ponds.	PS	*4.7-5 The project applicant/engineer shall submit a safety program for the proposed detention basin for the review and approval of the City Engineer prior to the approval of the improvement plans. The safety program shall address the public safety concerns associated with the development of the basin including but not limited to bank stabilization and restricting public access to the basin.*	LTS
4.7-6 Impacts related to the underground storage tanks at the Blue Star Gas station south of the project site.	LTS	*None required.*	N/A
4.7-7 Exposure of proposed	PS	*4.7-7(a) When residential structures are developed, an*	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
residences to wildland fires.		*approved fire apparatus access shall be provided to within 150 feet of all portions of the first floor as measured by an approved route around the exterior of the building. Structures not capable of meeting this requirement shall be considered a special hazard and have installed a fire sprinkler system.* *4.7-7(b) The East Contra Costa Fire Prevention Department shall, as necessary, ensure the installation of radio repeater towers within the proposed project area. The location and design of any radio repeater towers shall be subject to the review and approval of the City Engineer and Community Development Department.* *4.7-7(c) Development of the site should be carried out in accordance with East Contra Costa Fire Prevention Department rules and regulations and the Uniform Building Code regulations adopted by the East Contra Costa Fire Prevention Department.* *4.7-7(d) Prior to approval of design review for residential structures, the applicant shall show that all roofs shall be Class A type.*	

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	Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
4.7-8	Long-term hazards-related impacts from the proposed project in combination with existing and future developments in the Oakley area.	LTS	*None required.*	N/A
	4.8 Biological Resources			
4.8-1	Impacts to jurisdictional waters of the U.S. and waters of the State.	PS	*4.8-1(a) To the extent feasible implementation of the project shall be designed and constructed to avoid and minimize adverse effects to waters of the United States or jurisdictional waters of the State of California within the project area.* *4.8-1(b) A Section 404 permit for fill of jurisdictional wetlands shall be sought, and mitigation for impacts to jurisdictional waters that cannot be avoided shall conform with the USACE "no-net-loss" policy and the USACE Regulatory Guidance Letter No. 02-2 establishing policies and guidance on appropriate mitigation for impacts to jurisdictional waters. Mitigation for impacts to both federal and State jurisdictional waters shall be addressed using these guidelines.*	LTS

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Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		4.8-1(c) Mitigation shall include creation of wetlands at a minimum 1:1 ratio in conjunction with preservation/enhancement of wetlands at a minimum 1:1 ratio, and all temporary impacts resulting from construction access or similar activities shall be revegetated and restored. *Or,* *Alternatively, the applicant shall provide the required mitigation either through an in-lieu fee program, purchase of the required acreage in an approved mitigation bank, or an approved Habitat Conservation Plan (HCP).* *4.8-1(d) A mitigation plan shall be prepared for mitigation implemented both on-site and off site that provides guidance on managing and monitoring the wetland mitigation habitat. The mitigation plan shall include jurisdictional and non-jurisdictional wetland mitigation. The mitigation plan shall include standards deemed acceptable by the City of Oakley, USACE, RWQCB, and CDFG. Annual reports of the monitoring*	

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Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		activities and results shall be provided to the City of Oakley, USACE, USFWS, CDFG and RWQCB.	
4.8-2 Impacts to Protected and Heritage Trees.	PS	*4.8-2(a) Building structure and yard design, along with construction activities, shall attempt to retain existing protected and heritage trees on the project site to the maximum extent practicable. Prior to the issuance of grading permits, the project developer shall have a tree preservation plan prepared by an ISA-certified arborist to minimize damage to on-site protected and heritage trees during the construction of the project, replace any protected or heritage trees damaged or killed by development of the project, and plant additional trees as determined by the Community Development Department. The plan shall be reviewed and approved by the Community Development Department prior to issuance of a grading permit, and the plan shall be in compliance with Sections 5-D-3A and 5-D-2-3B of the City of Oakley Zoning Ordinance. The tree preservation plan shall include but not be limited to the following elements:* • *The preservation element of the plan shall include but not be limited to installation of protective fencing during construction,*	LTS

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Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		appropriate irrigation practices, and inclusion of appropriate tree preservation notes on grading and construction plans. The replacement and new plantings portion of the plan shall include a map showing where the replacement and new trees will be located. • *Where mitigation is determined to be necessary, tree removal shall be mitigated at a minimum 3:1 ratio or other ratio acceptable to the City of Oakley, or an in-lieu fee shall be paid on a per-inch basis as determined by the Community Development Department. The mitigation trees shall be established with appropriate maintenance to ensure long-term self-sustaining survivorship.* • *In the event that any protected or heritage tree is damaged during the construction process, the applicant shall comply with subsection 5-D-3A.5(E) and/or 5-D-3B.6(D) and 5.-D-3B.6 (E) of the Oakley Zoning Ordinance as applicable, including but not limited to notification of the Community Development Director.*	

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		4.8-2(b) Per the Tree Preservation Ordinance Section 5-D-3B.6(B) and (C), prior to the issuance of any grading or building permit for a property where protected or heritage trees will be removed, the applicant shall deposit cash or other acceptable security with the Community Development Department on a per-tree basis in the amount established by the involved development's conditions of approval of approved applications. As required, the City may hold the deposit for a two-year period to guarantee the health of the trees for a two-year period upon completion of construction. In addition, the applicant may be required to enter into a tree maintenance agreement secured by said deposit/bond by which the applicant agrees to maintain said trees in a living and viable condition throughout the term of agreement. This agreement may be transferred to any new owner of the property for the remaining length of the agreement. *4.8-2(c) The applicant shall obtain the necessary permit for the removal and/or destruction of protected or heritage trees that cannot be avoided during project construction for the review and approval of the*	

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Impact		*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
			Community Development Department.	
4.8-3	Impacts to special-status brachiopods.	PS	*4.8-3(a) Prior to issuance of a grading permit, the applicant shall conduct wet season surveys per the 1996 USFWS Interim Survey Guidelines for Vernal Pool Branchiopods within potentially suitable habitat on the Gilbert Property and adjacent off-site during the appropriate season. If vernal pool fairy shrimp is not found during wet season surveys, a second wet season or dry season soil collection and cyst identification shall be conducted. If federally protected branchiopods are not found after completion of protocol-level surveys, then no further mitigation shall be required. If federally protected branchiopods are found during one or more of the surveys, then the following measures shall be implemented.* *4.8-3(b) If protected brachiopods are found to occur during protocol surveys on the Gilbert Property, properties that are connected biologically and hydrologically (via ground or surface water) shall also be considered as potentially occupied habitat. Assessment of presence or absence shall be determined on a property-by-property basis, taking into account connectivity of the wetland areas. Project impacts shall be evaluated and*	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		mitigation shall be based on an analysis of the following: • *Connectivity of aquatic habitats (both ground and surface water);* • *Habitat quality measured as potential to support listed shrimp species;* • *Potential for cyst (egg) dispersal;* • *Adjacent land uses, current and anticipated, and resulting effects on the hydrology of aquatic habitats;* • *Threats and encroachment on populations of listed species, including edge effects and associated buffers, and habitat fragmentation;* • *If protected brachiopods are found within the boundary of the project site, impacts to occupied or potentially occupied aquatic habitats and an associated upland buffer, to be determined according to the criteria above, shall be avoided to the extent feasible. If avoidance is not feasible, aquatic habitat and the amount of watershed associated with the preserved pools necessary to sustain the existing hydrology of the pool habitat*	

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		shall be replaced at a 1:1 ratio at a location approved by the City and USFWS. The habitat in the amount specified above shall be acquired, permanently protected, and enhanced through management for the benefit of the species, to compensate for the loss of aquatic habitat on the project site. A plan describing the mitigation and monitoring requirements and performance standards shall be prepared if habitat is preserved or acquired for special-status fairy shrimp species. This mitigation measure shall be coordinated with the plan in Mitigation Measure 4.8-1 (d). Alternatively, the applicant can provide the required mitigation either through an in-lieu fee program, purchase of the required acreage in an approved mitigation bank, or an approved Habitat Conservation Plan (HCP). Take authorization shall be obtained from the USFWS if federally-listed branchiopods are present on-site. *4.8-3(c) If presence of protected brachiopods is confirmed during protocol surveys, the uppermost layer of soil in seasonally inundated habitat may contain cysts of*	

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

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			listed crustaceans as well as seeds of vernal pool plants. Therefore, before these wetlands are filled, the top layer of soil shall be made available prior to the start of project grading to any vernal pool creation bank that requests it, with USFWS approval, for inoculating newly created pools. Soil stockpiled for this purpose shall be shielded from rain with a waterproof cover to ensure that it remains completely dry.	
4.8-4	Impacts to special-status dune and sand mound insects.	LTS	*None required.*	N/A
4.8-5	Impacts to special-status fish species.	PS	*4.8-5(a)* *A Fish Rescue Plan for the project area shall be prepared that details measures to avoid take of fish during any construction activities within the ordinary high water level of Dutch Slough. To ensure compliance and implementation of the plan, a qualified biologist shall be present during construction and pumping activities.* *4.8-5(b)* *If construction takes place within the ordinary high water level, formal consultation with the NOAA Fisheries, and USFWS shall be required in*	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

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		conjunction with USACE Section 404 permit. If construction takes place below top-of-bank, formal consultation with CDFG as part of the Streambed Alteration Agreement to determine appropriate measures to avoid impacts to special-status fish species. A mitigation plan shall be prepared that includes measures to avoid take of special-status fish during construction activities and post construction water withdrawal activities. At a minimum, the following mitigation measures shall be incorporated into the mitigation plan: • *If entrapment in the siphons, flood gates, pumps, outfalls or other features is determined by the fisheries biologist to cause a potentially significant impact, a fish screen or other structure approved by USFWS, NOAA Fisheries, and CDFG shall be placed on these features to prevent fish entering the diversions system.* • *Turbidity and suspended sediment levels in water discharged into Emerson Slough shall not exceed more than 10 percent above ambient levels in these water bodies.*	

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact		*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
			• *Waterway construction in Emerson and Dutch Slough shall occur between July 1 and October 1 (or other period requested by the NOAA Fisheries) to work outside of the season in which juvenile salmonids could be present in the system.*	
4.8-6	Impacts to silvery legless lizard.	PS	*4.8-6(a)* *Pre-construction surveys for silvery legless lizard shall be conducted within the sand mound habitat on the project site and submitted to the City of Oakley for review and approval prior to the issuance of grading permits. If silvery legless lizard is not found, no further mitigation is required. If they are found Mitigation Measure 4.8-6(b) shall be implemented.* *4.8-6(b)* *If silvery legless lizard is documented on the project site, occupied habitat as well as other highly suitable habitat shall be avoided to the maximum extent feasible. If avoidance is not feasible, habitat shall be replaced at a 1:1 ratio at a location approved by the City and CDFG. Habitat in the amount specified above shall be acquired, permanently protected, and enhanced through management for the benefit of the species, to*	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

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				compensate for the loss of suitable sand dune and mound habitat on the project sites. Alternatively, the applicant shall provide the required mitigation either through an in-lieu fee program, purchase of the required acreage in an approved mitigation bank, or an approved Habitat Conservation Plan (HCP).	
4.8-7	Impacts to giant garter snake.	PS	*4.8-7(a)*	*The following measures shall be implemented to avoid potential take of individual garter snakes during construction:* • *All construction activity within potential giant garter snake aquatic habitat shall be conducted between May 1 and October 1. This is the active period for giant garter snakes and if present, potential effects are lessened because snakes are actively moving and can avoid danger.* • *Any dewatered areas within the sloughs shall remain dry for at least 15 consecutive days prior to excavating or filling of the dewatered area.* • *A qualified biologist shall provide project*	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		contractors and construction crews with a worker-awareness program appropriate for giant garter snakes before any work within aquatic habitats or adjacent upland habitats is initiated. This program shall be used to describe the species, its habits and habitats, its legal status and required protection, all applicable mitigation measures, and conditions of any state or federal permits as they relate to giant garter snake. Proof of this instruction shall be submitted to the City. • *During project activities and following construction, all trash shall be properly contained, removed from the work site, and disposed of properly.* • *24-hours prior to construction activities, the project area shall be surveyed for giant garter snake. Survey of the project area shall be repeated if a lapse in construction activity of two weeks or greater has occurred. If a giant garter snake is encountered during construction,*	

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Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		activities shall not begin until appropriate corrective measures have been completed or it has been determined that the snake shall not be harmed. Any sightings and any incidental take shall be reported immediately to the USFWS at (916) 414-6600. • *Movement of heavy equipment to and from the project site shall be restricted to established roadways to minimize disturbance.* • *After completion of construction activities, any temporary fill and construction debris shall be removed and, wherever feasible, disturbed areas shall be restored to pre-project conditions. Restoration work shall include replanting emergent vegetation.* • *All fueling and maintenance of vehicles or other equipment and staging areas shall occur at least 66 feet from any water body. Prior to the onset of work, the applicant shall prepare a plan to allow prompt and effective response to any accidental*	

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Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. • *To control erosion during and after project implementation, the applicant shall implement best management practices, as identified by the Regional Water Quality Control Board. Drainage banks shall be stabilized by compacting additional soil after sediment and vegetation removal to minimize the potential for erosion. Additionally, during sediment and vegetation removal in a channel that still contains flowing water during August, September, and October, a silt fence shall be installed directly downstream of the project site. This will help to prevent silt accumulation downstream of the project site.*	
4.8-8 Impacts to western pond turtle.	PS	*4.8-8(a)* *A qualified biologist shall conduct pre-construction surveys for western pond turtles in all construction areas identified as potential nesting or dispersal habitat located within 1,000 feet of potential*	LTS

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Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		aquatic habitat 48 hours prior to initiation of construction activities. If western pond turtle is found during pre-construction surveys, it shall be relocated as necessary to a location deemed suitable by the biologist and CDFG (i.e., at a location which is a sufficient distance from construction activities). This survey shall include looking for turtle nests within the construction area. If a nest is found within the construction area, construction shall not take place within 100 feet of the nest until the turtles have hatched and have left the nest or can be safely relocated with assistance from CDFG. *4.8-8(b)* *Because attempting to locate pond turtle nests will not result in a realistic probability of detection, after completion of pre-construction surveys, and relocation as necessary, exclusion fencing shall be placed around all construction-sites adjacent to aquatic habitats to eliminate the possibility of nest establishment in uplands adjacent to aquatic areas.* *4.8-8(c)* *If construction activities occur in aquatic areas where turtles have been identified during pre-*	

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Impact		*Level of Significance prior to Mitigation*	*Mitigation Measures*		*Level of Significance after Mitigation*
				construction or other surveys, a biological monitor shall be present during disturbance of those aquatic habitats. If any turtle is found, it shall be relocated as necessary to a location deemed suitable by the biologist and CDFG (i.e., at a location which is a sufficient distance from construction activities).	
			4.8-8(d)	*A qualified biologist shall provide project contractors and construction crews with a worker-awareness program before any work within aquatic habitats or adjacent upland habitats that are appropriate for western pond turtles. This program shall be used to describe the species, its habits and habitats, its legal status and required protection, and all applicable mitigation measures.*	
4.8-9	Impacts to western burrowing owl.	PS	*4.8-9(a)*	*Prior to issuance of a grading permit, pre-construction surveys of all potential burrowing owl habitat shall be conducted by a qualified biologist within the project area and within 250 feet of the project boundary. Presence or sign of burrowing owl and all potentially occupied burrows shall be recorded and monitored according to CDFG and California Burrowing Owl Consortium guidelines.*	LTS

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Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		If burrowing owls are not detected by sign or direct observation, construction may proceed. *4.8-9(b)* *Prior to issuance of a grading permit focused over-wintering surveys of all potential burrowing owl habitat shall be conducted by a qualified biologist within the Gilbert property. Presence or sign of burrowing owl shall be recorded and monitored according to CDFG and California Burrowing Owl Consortium guidelines.* *4.8-9(c)* *If potentially nesting burrowing owls are present during pre-construction surveys conducted between February 1 and August 31, grading shall not be allowed within 250 feet of any nest burrow during the nesting season (February-August), unless approved by the CDFG.* *4.8-9(d)* *If burrowing owl is detected during pre-construction surveys outside the nesting season (September 1-January31), passive relocation and monitoring may be undertaken by a qualified biologist following CDFG and California Burrowing Owl Consortium guidelines, which*	

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		involve the placement of one-way exclusion doors on occupied and potentially occupied burrowing owl burrows. Owls shall be excluded from all suitable burrows within the project area and within a 160-foot buffer zone of the impact area. A minimum of a week shall be allowed to accomplish this task and allow for owls to acclimate to alternate burrows. These mitigation actions shall be carried out prior to the burrowing owl breeding season (February 1- August 31) and, until construction begins, the site shall be monitored weekly by a qualified biologist to ensure that burrowing owls do not re-inhabit the site. *4.8-9(e)* *If burrowing owl or sign of burrowing owl is detected at any time on the project site, a minimum of 6.5 acres of foraging habitat per pair or individual resident bird, shall be acquired and permanently protected to compensate for the loss of burrowing owl habitat. The acreage shall be based on the maximum number of owls observed inhabiting the property for any given observation period, pre-construction survey, or other field visit. The protected lands shall be occupied burrowing*	

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Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		owl habitat and at a location acceptable to CDFG and the City of Oakley. The habitat in the amount specified above shall be acquired, permanently protected, and enhanced through management for the benefit of the species, to compensate for the loss of burrowing owl habitat on the project site. Alternatively, the applicant shall provide the required mitigation either through an in-lieu fee program, purchase of the required acreage in an approved mitigation bank, or an approved Habitat Conservation Plan (HCP). *4.8-9(f) Before construction activities begin, all construction personnel shall receive training that includes photos of burrowing owl for identification purposes, habitat description, limits of construction activities in the project area, and guidance regarding general measures being implemented to conserve burrowing owl as they relate to the project.* *4.8-9(g) A monitoring report of all activities associated with pre-construction surveys, avoidance measures, and passive relocation of burrowing owls shall be*	

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				submitted to the City and CDFG no later than two weeks before initiation of grading.	
4.8-10	Impacts to raptors and migratory birds.	PS	*4.8-10(a)*	*The removal of any buildings, trees, emergent aquatic vegetation, or shrubs shall occur from September 1 through December 15, outside of the avian nesting season. If removal of buildings, trees, emergent aquatic vegetation, or shrubs occurs, or construction begins between February 1 and August 31 (nesting season for passerine or non-passerine land birds) or December 15 and August 31 (nesting season for raptors), a nesting bird survey shall be performed by a qualified biologist within 14 days prior to the removal or disturbance of a potential nesting structure, trees, emergent aquatic vegetation, or shrubs, or the initiation of other construction activities during the early part of the breeding season (late December through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, a qualified biologist shall inspect all potential nesting habitat (trees, shrubs, structures, grasslands, pastures, emergent aquatic vegetation, etc.) in and*	LTS

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Impact		*Level of Significance prior to Mitigation*	*Mitigation Measures*		*Level of Significance after Mitigation*
				immediately adjacent to the impact areas for nests.	
			4.8-10(b)	*All vegetation and structures with active nests shall be flagged and an appropriate non-disturbance buffer zone shall be established around the nesting tree. The size of the buffer zone shall be determined by the project biologist in consultation with CDFG and will depend on the species involved, site conditions, and type of work to be conducted in the area. Typically, if active nests are found, construction activities shall not take place within 500 feet of the raptor nests and within 100 feet of other migratory birds until the young have fledged. A qualified biologist shall monitor active nests to determine when the young have fledged and are feeding on their own. The project biologist and CDFG shall be consulted for clearance before construction activities resume in the vicinity.*	
4.8-11	Impacts to Swainson's hawk.	PS	*4.8-11(a)*	*In order to ensure that nesting Swainson's hawks shall not be affected by construction on the project site or off-site improvement locations, a qualified biologist shall conduct pre-construction surveys according to CDFG and Swainson's Hawk*	LTS

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Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		Technical Advisory Committee guidelines (2000). Survey Period I occurs from January 1 – March 20, Period II from March 20 – April 5, Period III from April 5 – April 20, Period IV from April 21 – June 10, and Period V is from June 10 – July 30. Three surveys shall be completed in at least each of the two survey periods immediately prior to a project's initiation and encompass the area within ½ mile of the project site. If a nest site is found, then either of the following measures shall be implemented:	
		4.8-11(b) Trees containing known or potential raptor nest sites that must be removed as a result of project implementation shall be removed during the non-breeding season (September 1 to January 31) to discourage future nesting attempts, on the condition that no Swainson's hawk pair is currently utilizing the nest site. Monitoring evidence that any nests in trees planned for early removal are unattended by reproductive-aged birds must be provided; or	
		4.8-11(c) If an active Swainson's hawk nest is found sufficiently close (as determined by the qualified biologist and CDFG) to the construction area to be	

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Impact		*Level of Significance prior to Mitigation*	*Mitigation Measures*		*Level of Significance after Mitigation*
				affected by construction activities, a qualified biologist shall determine the extent of a construction-free buffer zone to be established around the nest. Intensive new disturbances (e.g., heavy equipment activities associated with construction) that may cause nest abandonment or forced fledging shall not be initiated within this buffer zone between March 1 and September 1 until it is determined by a qualified biologist in coordination with CDFG that the young have fledged and are feeding on their own.	
4.8-12	Impacts to special-status bat species.	PS	*4.8-12(a)*	*A pre-construction survey for roosting bats shall be performed by a qualified biologist within 30 days prior to any removal of trees or structures on the site. If no active roosts are found, then no further action shall be required. If either a maternity roost or hibernacula (structures used by bats for hibernation) is present, the following mitigation measures shall be implemented.*	LTS
			4.8-12(b)	*If active maternity roosts or hibernacula are found in trees or structures which are to be removed as part of project construction, the project shall be*	

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		redesigned to avoid the loss of the tree or structure occupied by the roost to the extent feasible as determined by the City. If an active maternity roost is located and the project cannot be redesigned to avoid removal of the occupied tree or structure, demolition shall commence before maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). Disturbance-free buffer zones as determined by a qualified biologist in coordination with CDFG shall be observed during the maternity roost season (March 1 - July 31). *4.8-12(c) If a non-breeding bat hibernacula is found in a tree or structure scheduled for removal, the individuals shall be safely evicted, under the direction of a qualified biologist (as determined by a Memorandum of Understanding with CDFG), by opening the roosting area to allow airflow through the cavity. Demolition shall then follow at least one night after initial disturbance for airflow. This action shall allow bats to leave during darkness, thus increasing their chance of finding new roosts with a minimum of potential predation during*	

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			daylight. Trees or structures with roosts that need to be removed shall first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours.	
4.8-13	Impacts to wildlife corridors.	LTS	*None required.*	N/A
4.8-14	Contribution to cumulative impacts to biological resources in the project area.	PS	*4.8-14 Implement Mitigation Measures 4.8-1 through 4.8-12.*	LTS
4.9 Geology and Soils				
4.9-1	Damage to foundations, pavements, and other structures constructed within the project site as a result of heaving and settlement of expansive soils.	PS	*4.9-1 Prior to approval of improvement plans, the project proponent shall conduct a design-level geotechnical study, which shall consider the recommendations in the existing geology report and additional recommendations as needed. The study shall specifically address whether expansive soils are present in the development area and include measures to address these soils where they occur. The recommendations from the geotechnical study shall be incorporated into the design of roadway and infrastructure improvements as well as foundation and building design for the review and approval of the City Engineer.*	LTS

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4.9-2	Impacts related to weak or compressible clay.	PS	*4.9-2*	*Prior to the approval of improvement plans, and after the project grading plans are completed and the approximate building loads are determined, a qualified geotechnical engineer shall determine if remediation measures such as removing and surcharging the compressible materials are necessary to minimize future settlement to acceptable levels. The applicant shall provide the findings of the consolidation analysis to the City Engineering Division for review and approval.*	LTS
4.9-3	Loss of structural support due to potential liquefaction.	PS	*4.9-3(a)*	*Prior to issuance of a grading permit, the applicant/developer shall incorporate the recommendations of a design-level geotechnical report into the improvement plans. The following measures include, but are not limited to, the options available to reduce site liquefaction potential and/or adverse effects to structures located above potentially liquefiable soils. Once final grading plans are designed, the project's geotechnical engineers will need to determine the appropriate methods of mitigating the effects of liquefaction such as:* • *Remove and replace potentially liquefiable soils;*	LTS

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		• *Strengthen foundations (e.g., post-tensioned slab, reinforced mat or grid foundation, or other similar system) to resist excessive differential settlement associated with seismically-induced liquefaction;* • *Support the proposed structures on an engineered fill pad in order to reduce differential settlement resulting from seismically-induced liquefaction and post-seismic pore pressure dissipation; and* • *Densify potentially liquefiable soils with an in situ ground improvement technique such as deep dynamic compaction, vibro-compaction, vibro-replacement, compaction grouting, or other similar methods.* *4.9-3(b) If deep dynamic compaction is expected to be implemented as the method of densification or for any other reason, the following measures shall be implemented:* • *Geotechnical engineers for the Contra Costa Water District and the Group Member performing Deep Dynamic Compaction (the*	

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		"DDC Member") shall mutually agree upon acceptable threshold limits for peak particle velocities measured during deep dynamic compaction at the toe of the Canal berm (the "Threshold Limits") along the DDC Member's Project. The sole purpose of the Threshold Limits is to attempt to avoid damage to the canal. The parties are not warranting that peak particle velocities at the toe of the Canal berm along the DDC Member's Project less than said Threshold Limits is safe or would not cause or contribute to Canal damage. In determining Threshold Limits, in addition to general safety and engineering factors, the District and DDC Member Engineers may also consider the types and amounts of comprehensive general liability insurance coverage provided by the DDC Member and its contractors or sub-contractors, as well as specific design, construction monitoring, and other measures that are developed to protect the Canal's Integrity, stability, and water quality as set forth above. (For example, if the District believes the amounts of comprehensive general liability	

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		insurance coverage provided by the DDC Member and its contractors or sub-contractors is insufficient, the Threshold Limits should be reduced accordingly to reflect this fact.) An independent licensed engineer selected by the District (with the concurrence of the DDC Member) shall, at the DDC Member's sole cost and expense, monitor measurements of peak particle velocities at the toe of the Canal berm along the DDC Member's Project during the period that Deep Dynamic Compaction is being performed, and shall submit to the District logs reflecting such measurements on a daily basis during such period. • *To help ensure that the threshold limits are not exceeded, the DDC Member shall commence deep dynamic compaction on those portions of the project site located farthest from the Canal, and thereafter shall proceed with Deep Dynamic Compaction from those portions of the Project toward the Canal. That is, the DDC Member shall always conduct Deep Dynamic Compaction on this Project in a manner that the progression*	

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		is in a direction toward the canal. • *If the threshold limits are exceeded while deep dynamic compaction is being performed, then the DDC Member shall immediately cease performing deep dynamic compaction within its Project and promptly notify the District. Deep dynamic compaction shall not resume unless and until (i) measures are developed and implemented by the DDC Member to ensure that the threshold limits are not exceeded, and (ii) the DDC Member notifies the District in writing of such measures.*	
4.9-4 Increased soil erosion, wind and water erosion, and siltation of local drainage during and after construction from excavation and grading activities.	PS	*4.9-4* *Prior to issuance of a grading permit, the project applicant shall submit, for the review and approval of the City Engineer, an erosion control plan that utilizes standard construction practices to limit the erosion effects during construction of the proposed project. Measures could include, but are not limited to:* • *Hydro-seeding;* • *Placement of erosion control measures within*	LTS

MM = *Mitigation Measure;* NI = *No Impact;* N/A = *Not Applicable;* LS = *Less-than-Significant;* S = *Significant;* SU = *Significant and Unavoidable*

TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact		*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
			drainageways and ahead of drop inlets; • *The temporary lining (during construction activities) of drop inlets with "filter fabric" (a specific type of geotextile fabric);* • *The placement of straw wattles along slope contours;* • *Directing subcontractors to a single designation "wash-out" location (as opposed to allowing them to wash-out in any location they desire);* • *The use of siltation fences; and* • *The use of sediment basins and dust palliatives.*	
4.9-5	Grading and import of fill.	PS	*4.9-5 Implement Mitigation Measure 4.9-4.*	LTS
4.9-6	In combination with existing and future developments, increased potential impacts related to geological impacts and hazards.	LTS	*None required.*	N/A
4.10 Mineral Resources				
4.10-1	Loss of availability of a known State, regional, and/or locally valuable mineral resource, as	LTS	*None required.*	N/A

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
	identified in the Oakley General Plan.			
4.10-2	Long-term loss of mineral resource availability from the proposed project in combination with existing and future developments in the Oakley area.	LTS	*None required.*	N/A
	4.11 Historical and Cultural Resources			
4.11-1	Substantial adverse change in the significance of a historical resource.	LTS	*None required.*	N/A
4.11-2	Unearthing of previously unknown archaeological resources as a result of project grading.	PS	*4.11-2(a) During construction, if any earth-moving activities uncover artifacts, exotic rock, or unusual amounts of bone or shell, work shall be halted in the immediate area of the find and shall not be resumed until after a qualified archaeologist has inspected and evaluated the deposit and determined the appropriate means of curation. The appropriate mitigation measures may include as little as recording the resource with the California Archaeological Inventory database or as much as excavation, recordation, and preservation of the sites that have outstanding cultural or historic*	LTS

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact		*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
			significance. *4.11-2(b) During construction, if bone is uncovered that may be human, the Contra Costa County Coroner and the Native American Heritage Commission in Sacramento shall be notified. Should human remains be found, the Coroner's office shall be immediately contacted and all work halted until final disposition by the Coroner. Should the remains be determined to be of Native American descent, the Native American Heritage Commission shall be consulted to determine the appropriate disposition of such remains.*	
4.11-3	In combination with other known and foreseeable projects in the Oakley area, the project's contribution to cumulative cultural resources impacts.	PS	*4.11-3 Implement Mitigation Measure 4.11-2(a) and (b).*	LTS
4.12 Hydrology, Water Supply and Water Quality				
4.12-1	Exposure of future and adjacent residents to flood hazard.	LTS	*None required.*	N/A
4.12-2	Maintenance of levees	PS	*4.12-2 Prior to Improvement Plan approvals the project*	LTS

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
surrounding the project.		*engineer shall develop a levee maintenance program. The maintenance program shall be submitted for the review and approval of the City Engineer and include the plan for financing and maintenance of the levee system. The plan shall include the following guidelines:* • *All pertinent agencies that may have jurisdiction over the repair area shall be consulted. These agencies may include (but are not limited to) the California Department of Fish and Game, the U.S. Fish and Wildlife Service, the Army Corps of Engineers, the Regional Water Quality Control Board, the Contra Costa County Public Works Department, and the Contra Costa County Flood Control District.* • *Both an engineering geologist and a civil engineer shall be consulted on significant embankment repairs.* • *Soil removal and placement shall be limited to the minimum amount needed to achieve bank stabilization.* • *Access roads shall be kept clear of obstructions*	

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
		and maintained in a manner that allows access for maintenance equipment at all times. Access road dimensions and specifications shall conform to guidelines prepared by the City of Oakley. • *The establishment of woody vegetation (e.g. trees or shrubs) can impair the integrity of the levees. Therefore, regular inspection for, and removal of, woody vegetation shall be required.* • *Tunnels created by ground squirrels and other animals can also compromise the integrity of the levees. Annual inspection of the levees by a competent professional shall be required to assess the need for remedial repairs and animal control measures.* • *Material shall not be placed in a manner that could be eroded by normal or expected high flows.* • *Bank stabilization in excess of 500 feet in length or an average of one cubic yard per running foot must be authorized by the City of Oakley or Contra Costa County Flood Control.* • *The condition of levee embankments and access*	

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact		*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
			roads shall be monitored in detail as part of routine monitoring, as well as during post-flood event inspections. During periodic monitoring visits, personnel shall inspect the entire perimeter of the levees around the project and note evidence of erosion or slope failures on both sides of the levee. Embankments shall generally be free of erosion, rills, slumps, and landslides.	
4.12-3	Change in peak stormwater flows.	LTS	*None required.*	N/A
4.12-4	Adequate water supply and delivery for new residents.	PS	*4.12-4(a) Prior to approval of the final map the applicant shall be required to pay a fair share fee as determined by the DWD toward the CIP for water service infrastructure improvements.* *4.12-4(b) Each final subdivision map approval shall be conditioned on DWD's issuance of a "Written Verification" that its water supplies are sufficient to serve the subdivision, if required by and consistent with SB 221.* *4.12-4(c) Each final subdivision map approval shall be conditioned on the inclusion of the property covered*	LTS

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
			by such map within the CCWD's CVP contractual service area.	
4.12-5	Degradation of water quality in the Contra Costa Canal and Dutch Slough.	LTS	*None required.*	N/A
4.12-6	Maintenance of stormwater lake.	PS	*4.12-6 Prior to Improvement Plan approvals, the project engineer shall develop a storm drain system maintenance program. The maintenance program shall be submitted for the review and approval of the City Engineer and include the plan for financing and maintenance of the water quality detention basin. The plan shall address aquatic vegetation and vector control, pond bank and inlet structure conditions, and pond sediment removal.*	LTS
4.12-7	Maintenance of storm drain system.	PS	*4.12-7 Implement Mitigation Measure 4.12-6.*	LTS
4.12-8	Groundwater Interaction with Stormwater Pond well and Irrigation	LTS	*None required.*	N/A
4.12-9	Contribution to cumulatively increased stormwater drainage into the existing drainage	LTS	*None required.*	N/A

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
	system.			
4.12-10	Project contribution to cumulative water quality impacts downstream of the project site.	LTS	*None required.*	N/A
4.12-11	Project contribution to cumulative water supply impacts.	LTS	*None required.*	N/A
4.13 Public Services and Utilities				
4.13-1	Impacts related to adequate wastewater treatment and infrastructure capacity.	LTS	*None required.*	N/A
4.13-2	Adequate ratio of law enforcement personnel to residents.	PS	*4.13-2 Prior to the issuance of building permits, the applicant shall participate in the provision of funding to maintain police services through a special police services tax, similar to conditions placed on recent City subdivision approval, for the approval of the Community Development Department.*	LTS
4.13-3	Adequate ratio of fire department personnel to residents.	PS	*4.13-3(a) Prior to the issuance of building permits, the project proponent shall pay a fair share of costs for new fire protection facilities and services, consistent with the development agreement as determined by the City Manager.*	LTS

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TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Impact	*Level of Significance prior to Mitigation*	*Mitigation Measures*	*Level of Significance after Mitigation*
			4.13-3(b) Prior to approval of the building plans, the project applicant shall provide proof to the Community Development Department that fire flow requirements shall be met.	
4.13-4	Number of enrolled students exceeding capacity.	PS	*4.13-4 Prior to recordation of final map, the proposed project property owner shall pay appropriate SB50 and AB16 school impact fees.*	LTS
4.13-5	Adequate provision of parks and recreation space for new residents.	PS	*4.13-5 Prior to recordation of final map, the proposed project property owner shall pay the remaining park in-lieu fee to facilitate the provision of the community park facilities to be located north of the CCWD/USBR canal.*	LTS
4.13-6	Need for additional waste disposal/recycling services.	LTS	*None required.*	N/A
4.13-7	Cumulative impacts to public services and facilities.	PS	*4.13-7 Prior to the issuance of building permits, the project proponent shall pay a fair share of costs for new wastewater collection facilities, as determined by the Community Development Department and Ironhouse Sanitary District.*	LTS

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3. PROJECT DESCRIPTION

3. PROJECT DESCRIPTION

INTRODUCTION

This section describes the proposed Gilbert Property project, including the background, the project location, the project objectives, the project components, and required public approvals. This section provides detailed project information, which provides the basis for the environmental analysis in the subsequent chapters.

PROJECT BACKGROUND

The project site has historically been used for agricultural purposes. Non-engineered levees are located adjacent to the Dutch Slough. These levees were originally built to protect agricultural uses and some residences.

Background of Development Projects in Surrounding Areas

Cypress Corridor Planning Process

The City of Oakley 2020 General Plan places the project site within a larger planning area termed "the Cypress Corridor Planning Area." The General Plan 2020 EIR analyzed the larger area-wide infrastructure systems, and project-level EIRs for the Cypress Grove development to the west recently addressed the coordinated infrastructure needs for the Cypress Corridor Planning Area. The Cypress Lakes community by Shea Homes has been separately analyzed under a certified project-level EIR. A Mitigated Negative Declaration was done for the Westerly Annexation area south of Cypress Road and east of Sellers Avenue.

On December 2, 2000, the Oakley City Council and Planning Commission conducted a community design forum, providing members a place to come together to help develop a vision for the Cypress Corridor and identify major development concepts and design principles that would guide future development and planning in the area. The primary vision concepts and design principles emerging from this workshop provide the foundation for the future planning and development of the Cypress Corridor and surrounding areas and were reflected in, and consistent with, the Oakley 2020 General Plan.

East Cypress Corridor Specific Plan Planning Process

Immediately east of the neighboring Burroughs site, recently annexed into the City of Oakley, is the East Cypress Corridor Specific Plan area. Located on the eastern side of Oakley, the 2,546-acre Specific Plan Area includes the area east of Jersey Island Road, south of Dutch Slough Road, west of Sandmound Slough, north of Rock Slough and northeast of the Contra Costa Canal. In 1993, Contra Costa County approved a development plan and rezoning for approximately 678 acres permitting development by Shea Homes of up to 1,330 residential dwelling units, plus up to 200 second units, a golf course, lakes and open space.

On December 16, 2002, the City of Oakley adopted the City's 2020 General Plan designating the Specific Plan Area as the East Cypress Corridor Expansion Area, and designating urban land uses for future development within the Specific Plan Area.

On August 19, 2003, the Contra Costa County Local Agency Formation Commission (LAFCo) approved a proposed amendment to the City of Oakley Sphere of Influence to include the Specific Plan Area within the City's Sphere of Influence.

On February 14, 2004, the City of Oakley determined that a Specific Plan should be prepared for the Cypress Corridor Expansion Area and authorized the preparation of the East Cypress Corridor Specific Plan to implement the General Plan and to comprehensively plan for the staged annexation of the properties within the Specific Plan Area. The Draft EIR and the East Cypress Corridor Specific Plan has undergone public review and were certified and adopted by City Council March 14, 2006. The project was approved by the Local Agency Formation Commission (LAFCo) for the annexation in July 2006; and the Areas 1 and 2 were annexed on October 20, 2006. Area 3, which includes an existing residence, sand mound and portions of the Dutch Slough was not annexed..

Oakley General Plan

Prior to incorporation of the City of Oakley, Contra Costa County was responsible for planning and land use in the Oakley community. The 1990 Contra Costa County General Plan update designated the approximately 1,500-acre Dutch Slough properties owned by the Emerson, Gilbert and Burroughs families as Mixed Use (M-8). In 1997, the County approved statutory development agreements providing vested rights to develop these properties, consistent with the County General Plan and EIR. In 1997, the County for CEQA purposes relied upon the General Plan EIR and approved development agreements providing vested rights to develop the M-8 area with approximately 4,500 to 5,000 dwelling units and additional retail and community center uses.

During this period, the U.S. Fish and Wildlife Service and the California Department of Fish and Game embarked on the "Cal-Fed" program to plan the future of Bay-Delta water resources. The CALFED Bay-Delta Program is a unique collaboration among 25 state and federal agencies that came together with a mission: to improve water supplies in California and the health of the San Francisco Bay/Sacrament-San Joaquin River Delta. This process included the identification of properties along the Delta that could be acquired for wetlands and wildlife habitat restoration. Portions of the Cypress Corridor, including the Gilbert property, were identified as a prime candidate for this effort. After extensive planning, negotiation, and public review, a deal to acquire those portions of the Dutch Slough properties located north of the Contra Costa Canal was completed. Those transactions with the State of California Department of Water Resources occurred in 2003, following several Memoranda of Understanding entered into in 2002 between the State, the City of Oakley, the landowners, and environmental groups (see below for a more complete description of this process).

In 1999, the City of Oakley incorporated. This incorporation area included the M-8 area of the County. In 2000, the City of Oakley embarked on a process to prepare and process a new

General Plan to specifically service the needs of the City. The General Plan included the 120-acre Gilbert Property with residential and commercial land use designations. In December 2002, the City of Oakley adopted the Oakley 2020 General Plan (2002). As part of the General Plan update, the City certified a programmatic EIR and prepared an Oakley 2020 General Plan Background Report. As stated in Chapter 1, Introduction, this EIR tiers from the Oakley 2020 General Plan EIR.

Memorandum of Understanding, Development Agreements, and Wetland Restoration

In the fall of 2001, the owners of the original Emerson, Gilbert, and Burroughs Properties, together with the California Costal Conservancy, a state agency and two non-profit environmental organizations, the Natural Heritage Institute and the Conservation fund, submitted an application to Cal-Fed seeking funding for a proposal for land owners to sell portions of their properties north of the Contra Costa Canal for the purpose of creating the Dutch Slough Tidal Marsh Restoration Project, an ecosystem restoration project for scientific study and Bay Delta habitat preservation. The property owners had previously obtained vested rights to develop these portions of their property under the 1997 Development Agreement with the County, which upon the Oakley incorporation were binding under State law. The owners indicated their intention to develop the remaining land to the south of the Canal.

On September 23, 2002, the Oakley City Council approved a Memorandum of Understanding (MOU) between the City and the property owners summarizing the terms of basic understanding between the City and the owners regarding the disposition of the northern and southern portions of the properties in question and future planning for the southern properties. As part of the Southern Property Disposition Agreement, the property owners agreed to transfer ownership of portions of the southern properties and northern properties to the City. Portions of the northern properties totaling approximately 90 acres were to be transferred to the City for developing a 55-acre community park and related public recreational facilities. Separate Memoranda of Understanding were entered into with the California Coastal Conservancy, the Natural Heritage Institute and the Conservation Fund, which identified the project site for residential uses.

On December 16, 2002, the City Council adopted the Oakley 2020 General Plan, approving urban land use designations for the southern properties, consistent with the terms of the MOU. This approval encompassed the owners' proposal for a combination of residential and commercial development on the southern properties. MOU with the landowners called for the development of approximately 1,200 residential units of different densities on approximately 271 acres, resulting in an overall density of approximately 4.2 to 4.4 units per gross acre. The MOU further permitted 10 to 15 acres of commercial development. This considerably reduced the number of units contemplated for development on these properties when compared to the 4,500 to 5,000 units allowed under the County development agreements, resulting in clustering of development within a smaller area at a greater density.

In August of 2003, the MOU was supplemented by Development Agreements between the City of Oakley and the Gilbert, Emerson and Burroughs property owners to formalize and secure the rights and obligations created in the MOU, General Plan, and Cal-Fed transaction.

The City also entered into the MOUs in 2002 with the California Costal Conservancy, the National Heritage Institute and the Conservation Fund. The MOUs with these entities addressed implementation of the Dutch Slough Tidal marsh Restoration Project and identified the 271-acre area south of the Contra Costa Canal, including the Gilbert Property, for residential uses.

In 2003, Cal-Fed purchased the northern portion of the Emerson, Gilbert and Burroughs properties, excluding acreage currently held in escrow for the City of Oakley to use for a community center, trails, and other public uses once the residential approvals for the south properties are obtained (north of the Contra Costa Canal, no longer part of the current proposed project). Representatives of the Department of Water Resources have indicated that the site will be reclaimed as wetlands, as part of the three-phase Dutch Slough Tidal Marsh Restoration Project.

In summary, the MOUs and the Development Agreements affecting the Gilbert, Emerson, and Burroughs Properties that were entered into during 2002 and 2003 resulted in a comprehensive plan that would result in (1) vested rights for residential development on approximately 271 acres south of the Contra Costa Canal, including the Gilbert Property; (2) conveyance to the State of California (more specifically, to the Department of Water Resources) of approximately 1,150 acres adjusted to the Delta for wetland and Marsh habitat restoration; and (3) conveyance to the City of approximately 100 acres for park, recreational, trail and community center purposes, including approximately 27 acres within the Burroughs property south of the Contra Costa Canal.

Gilbert Property Planning Process

On March 21, 2005, the City Council adopted a four-step collaborative planning process for the Gilbert, Emerson and Burroughs sites in order to facilitate close involvement between the Oakley community and the prospective homebuilders. The objective was to evolve a coordinated "Planning Framework" (guidelines and concept plans) acceptable to both the City and the homebuilders. The Planning Team (City staff and consultants, and the home builders and their consultants) prepared background information and alternative plan concepts and then presented these to the Council and Planning Commission at public work sessions for the purpose of receiving feedback and further direction. The homebuilders wished to jointly participate in the Planning Framework Study process and then independently move forward with their own individual subdivision applications upon acceptance of the Study by the Council. The five-step planning process consisted of the following:

1. Overview and preliminary Council and Commission input regarding an illustrative land use diagram and conceptual infrastructure plans prepared by the homebuilders pertaining to streets, water, sanitary sewer, storm water drainage, and trails (March 21, 2005).

2. Educational session at which the Planning Team presented contemporary neighborhood planning and urban design concepts to the Council and Commission (May 9, 2005).

3. Council, Commission, and Planning Team tour of existing housing and neighborhood commercial developments and parks to observe and record Council and Commission reactions to site planning, housing product types and densities, architecture, and landscaping similar to that which the homebuilders envisioned for the Dutch Slough area (May 14, 2005).

4. Presentation and evaluation of the Draft Planning Framework, including site planning, engineering, architecture and landscaping concepts; followed by Council and Commission reactions, and ultimate acceptance by the Council (September 12, 2005).

5. On June 12, 2006 the City authorized a 4-party infrastructure cost agreement.

Development Constraints

The City of Oakley 2020 General Plan identifies the constraints and opportunities unique to the greater "Cypress Corridor Planning Area" in which the Gilbert Property project site is located (p. 2-23). The General Plan further provides direction regarding the City's expectations for the development of this area. Some development constraints identified by the General Plan include the following:

1. While Cypress Road and Sellers Avenue provide circulation access, both roads would require expansion to accommodate future traffic.

2. Existing wastewater collection lines are adequate for current operation. Some trunk lines and pump stations would need to be upgraded and/or added to provide greater capacity, as needed. Domestic water facilities also would have to be upgraded to provide greater capacity. While expansion of water and wastewater facilities are underway to serve the Delta Vista Middle School and further facility upgrades would also be required to serve this area.

3. While the banks of the Contra Costa Canal provide some protection against Delta flooding, these levees were not designed for flood control purposes, are not certified by the Army Corps of Engineers, and therefore, their integrity is in question in certain areas of the "Corridor". The primary purpose of the Contra Costa Canal is for conveyance of drinking water supply for the Contra Costa Water District.

4. The Cypress Corridor includes areas susceptible to liquefaction that might be unstable under certain conditions during and after an earthquake.

5. Within the eastern portion of this area are natural gas wells that must be accommodated and properly abandoned prior to urban development.

6. Because substantial future development areas are located to the east of the Cypress Corridor Planning Area, facilities installed along Cypress Road must be properly sized to support development in both the Cypress Corridor Planning Area, and the Cypress Corridor Expansion Area (as defined in the General Plan). Such facilities

include, but are not limited to roads, water service, and wastewater collection facilities.

Project Location and Surrounding Land Uses

Project Location

The proposed 120-acre Gilbert Property project site is located in the City of Oakley, Contra Costa County, California (See Figure 3-1, Regional Location Map, and Figure 3-2, Project Location Map).

The Gilbert Property project site is situated between the vacant Emerson site to the west and Burroughs site to the east. The Emerson and Burroughs sites are also part of the Cypress Corridor and development of these sites is anticipated in the future. Further to the west, land uses include Cypress Grove project, Delta Vista Middle School, and Iron House Elementary School, Cypress Road to the south, the Burroughs property to the east, and the Contra Costa Water District Canal (CCWD/USBR Canal) to the north, which separates the project site from the open space acreage to the north. Approximately 1,200 acres to the north of the canal are currently owned by the State of California and is anticipated to be restored to wetlands in the near future. A 55-acre portion of land immediately to the north of the CCWD/USBR canal and the project site at the end of Sellers Avenue is held in escrow, pursuant to a Memorandum of Understanding and Development Agreement, for future conveyance to the City of Oakley as a community park.

The Gilbert property is identified as Assessor's Parcel Number 032-081-016.

Site Characteristics

The project site topography is generally flat, and vegetation consists of grassland and a limited number of mostly non-native trees. Existing development on the project site includes a trailer and several outbuildings.

The Gilbert Property project site is located to the east of the central area of the City of Oakley. The project site is surrounded by several existing and proposed subdivisions, the Contra Costa Canal, and park and recreational areas. North of the Gilbert Property site, the General Plan land use designations are Delta Recreation, and Parks and Recreation, including the future site for a Community Park. The Cypress Grove subdivision, as well as Delta Vista Middle and Iron House Elementary Schools are located west of the project site. The East Cypress Corridor Specific Plan Area is directly east of the project site, and to the south are a variety of land use designations, including Commercial; Single Family Very Low, Low, Medium, and High; and Multi-Family Low; Parks and Recreation; Agriculture; and Agricultural Limited.

Figure 3-1
Regional Location

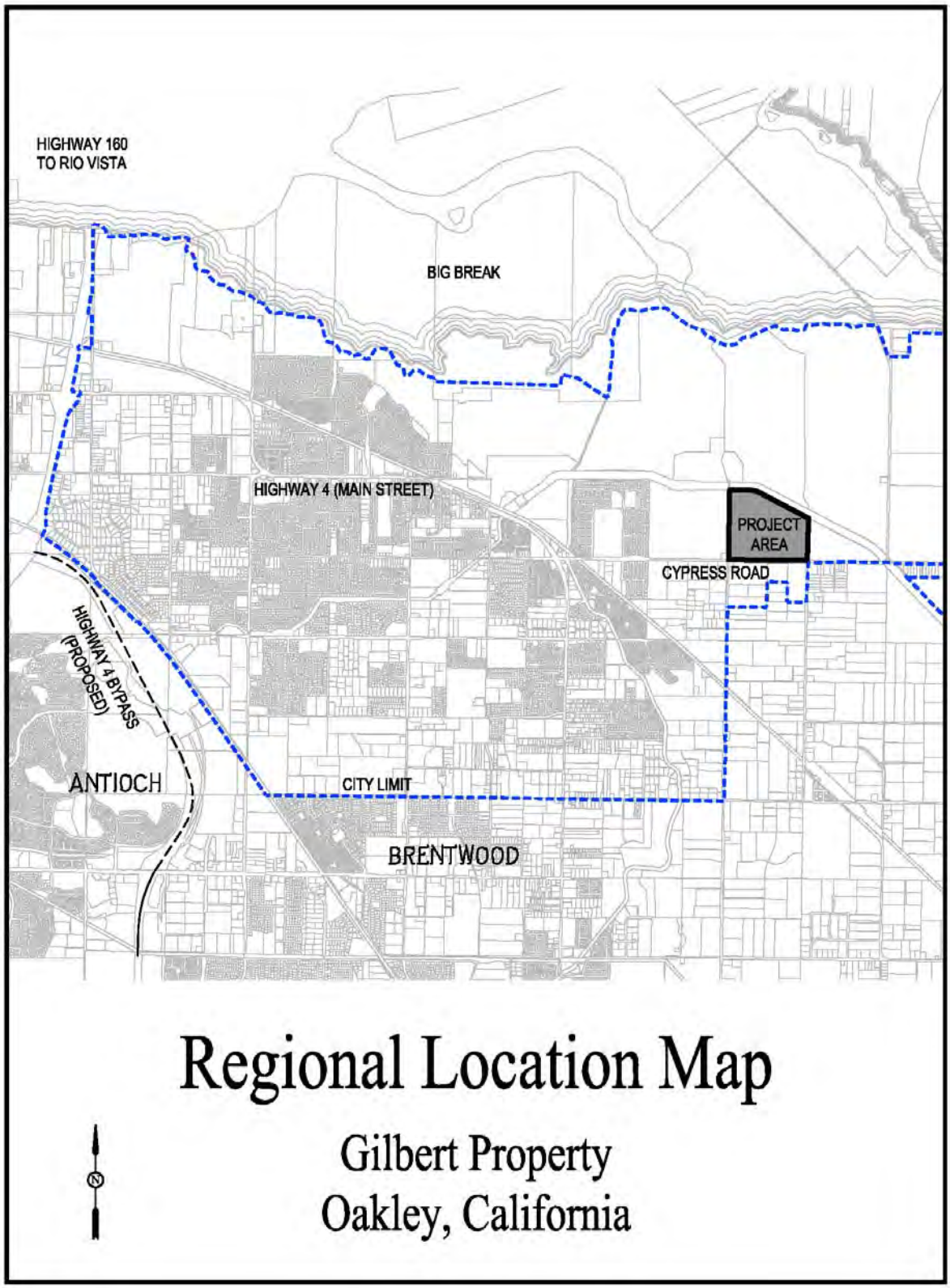
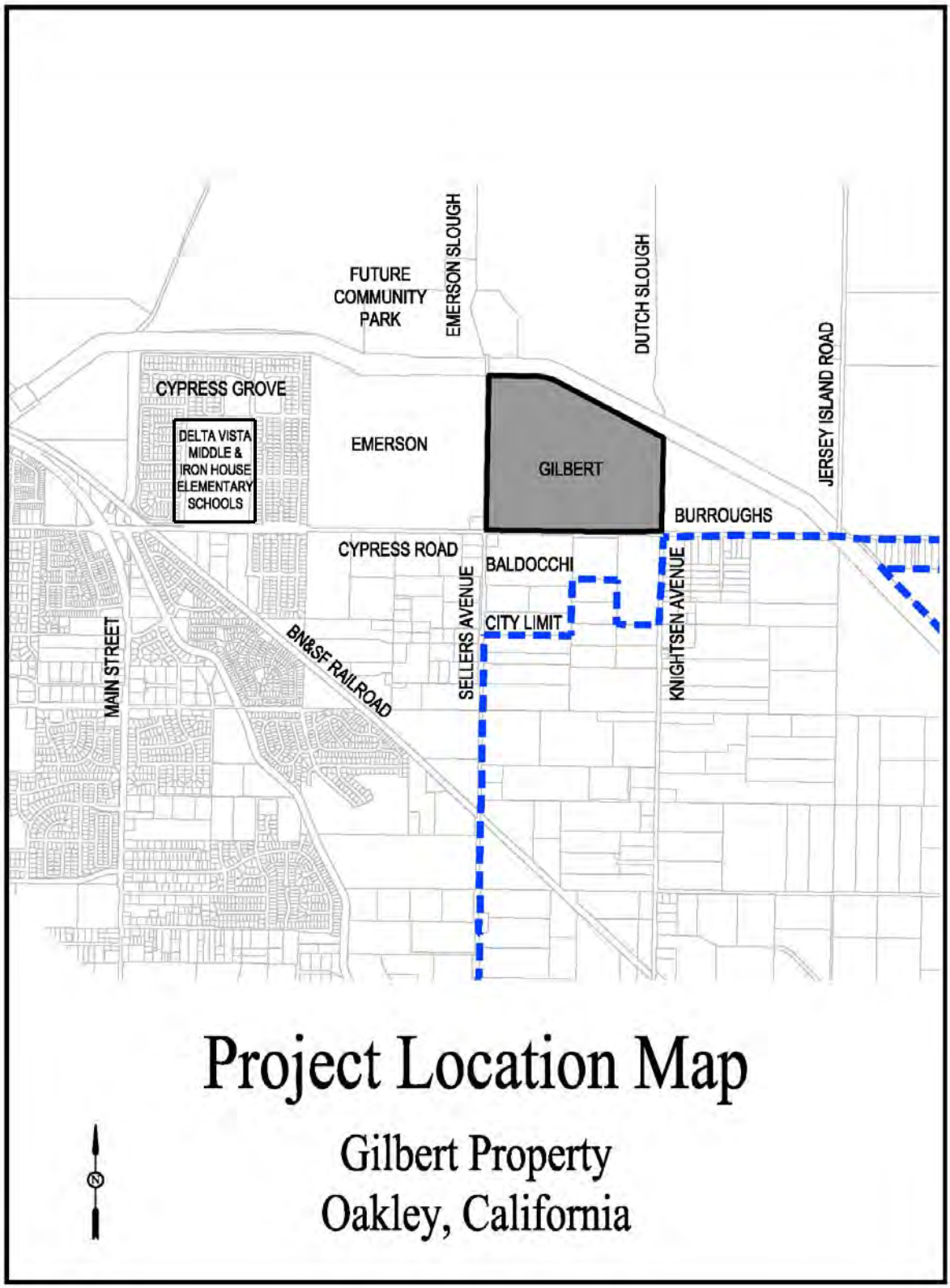


Figure 3-2
Project Location



PROJECT OBJECTIVES

The Gilbert Property objectives are as follows:

- Implement the City's General Plan goals by providing for residential development for which adequate services can be provided in a timely manner.

- Create an inviting village setting comprised of distinct, yet integrated neighborhoods, with a central park, all of which would provide a desirable small town atmosphere and attractive lifestyle choice for residents. Facilitate the interaction of neighborhood residents through the provision of an attractive park and a network of trails.

- Provide the infrastructure necessary for the delivery of safe and reliable public services including water, sewer, drainage, and roadway infrastructure improvements that enhance the entire Oakley community.

- Provide safe, convenient transportation access for pedestrians, bicyclists, transit riders, and motorists between parks and near-by schools, as well as to existing and future transit corridors, using street designs that balance the needs of pedestrians and motorists. Target pedestrian orientation as a key element within the development and facilitate access to potential nearby future transit corridors.

- Create an economically viable project that provides a fair share contribution of infrastructure on a pro rata basis to the community through the payment of fees and/or reimbursement agreements and/or construction of required capital improvements, while creating revenue through the sale of housing of the types and styles that current and future citizens of Oakley desire.

- Provide a variety of desirable housing types and densities consistent with City policies that meet the housing needs of existing and future Oakley residents. Provide a mix of housing choices and affordability levels interspersed among the neighborhoods so as to create ongoing housing opportunities for local school districts, and/or City health and safety personnel.

- Draw upon the agricultural character of Oakley and the adjacent Delta area in establishing the future character of the development projects within the Oakley area.

- Develop the project areas consistent with land uses and policies defined in the City of Oakley 2020 General Plan and the Development Agreement.

- Advance the City's vision for Cypress Corridor by incorporating design principles and including a variety of architectural styles and home sizes that create a neighborhood with attractive land plans and that serve a variety of households.

- Provide access to the Wetlands Restoration Project areas to the north of the proposed project site.

- Provide for increased CCWD canal safety.

PROJECT COMPONENTS

The proposed land plan for the Gilbert Property project site includes residential development, trails, a park, levees, storm water detention ponds, and the infrastructure improvements necessary to accommodate the new development (See Figure 3-3 Gilbert Tentative Map.)

The project applications reflect the following:

Residential Development

The proposed land plan for the Gilbert Property project includes a variety of residential development. The neighborhoods would be woven together into a comprehensive community through the use of traffic and pedestrian circulation, a centrally located park, surrounding a stormwater retention pond, coordinated landscape treatments and complimentary architectural styles.

Two developers, Castle Companies and Ryder Homes, plan to develop the Gilbert property site (Subdivision 9033). The development would include up to 510 residential units. The Gilbert property would consist of five neighborhoods with varying lot sizes. One neighborhood consists of split-lot duplexes with lots containing 3,690 and 4,050 square feet. The second neighborhood is small lot detached homes with lot sizes typically 4,500 square feet. A third neighborhood, similar to the second, includes mostly 5,000 square foot lots. A fourth neighborhood includes wide lots with 8,000 to 9,000 square feet. The fifth neighborhood is a more traditional 5,000 to 6,000 square foot lot subdivision with lots alternating to provide street frontage variations.

Open Space

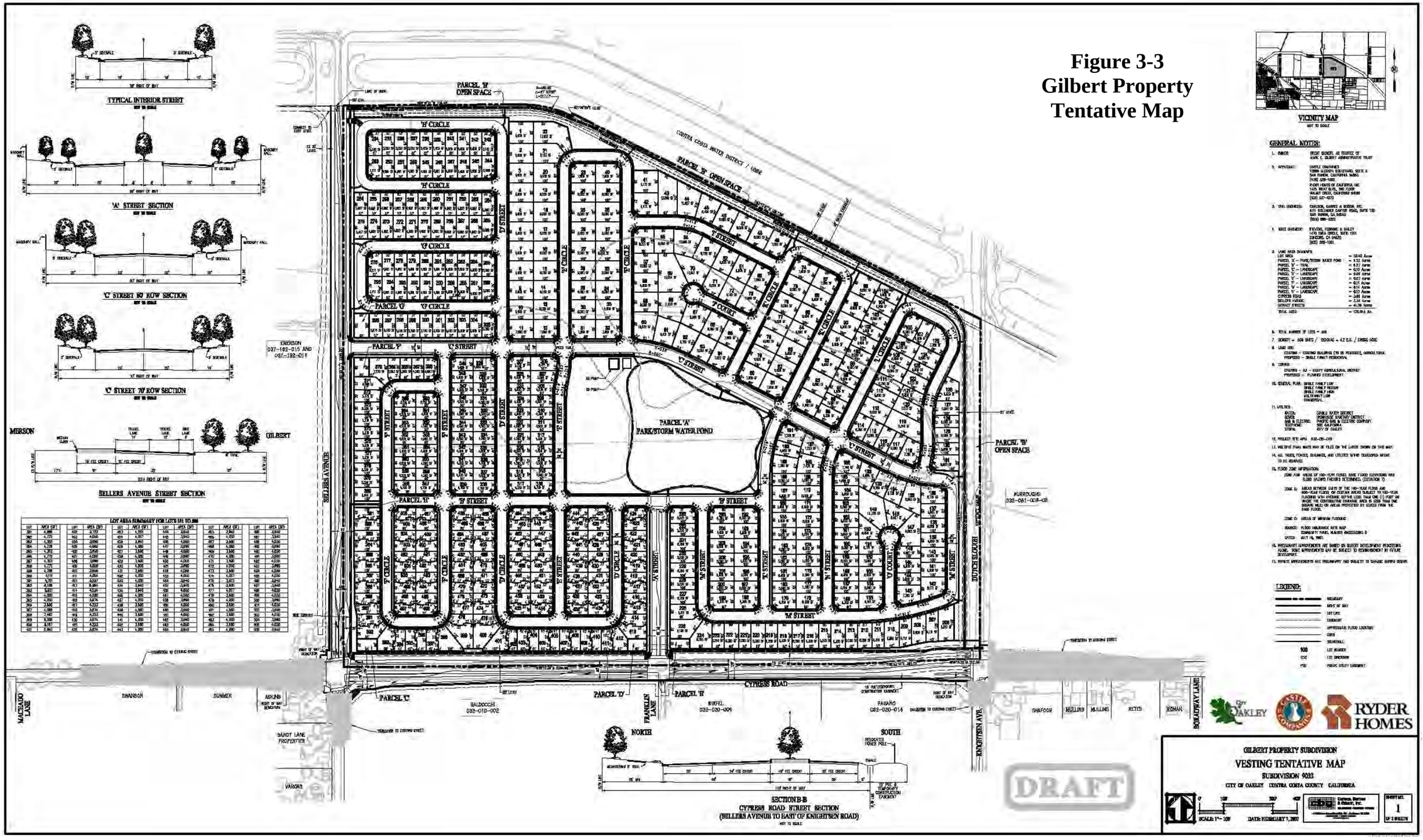
Park

The Gilbert Property would include an approximately 3-acre park in the center of the community adjacent to the stormwater pond.

Trails

The proposed project would contribute to the construction of trails along the north side of Cypress Road, east side of Sellers Avenue, along the north edge of the property adjacent to the CCWD/USBR canal and on certain local streets in the project site. The Gilbert Property would provide its portion of the trail system in substantial conformance with the planning framework. The trail would ultimately provide pedestrian circulation to and from the Delta Vista Middle School, the Iron House Elementary School, the neighborhood park and the proposed 55-acre City Park north of the CCWD/USBR canal.

Figure 3-3
Gilbert Property
Tentative Map



A trail would be located along the northern boundary of the development just south of the CCWD/USBR canal. This trail ultimately would connect to the trail constructed by the Cypress Grove development to the west, which in turn provides access to the existing Marsh Creek Trail, and links to an existing regional trail system. It should be noted that a gap would exist in the trail across the Emerson property until that area is developed.

The trails would include installation of a fence along the CCWD/USBR right of way and a safety "liner" fence adjacent to the canal in the CCWD/USBR right of way or as directed by CCWD/USBR. In addition, a trail would be constructed along the west side of Dutch Slough within the Gilbert Property from Cypress Road to the CCWD/USBR right of way.

Levees

The site is subject to inundation risks from the Sacramento/San Joaquin Delta, which has a 100-year flood elevation of 7 feet above mean sea level (msl). The Gilbert Property would construct a levee system surrounding the property. The existing levee constructed by Cypress Grove project along Sellers Avenue may be modified with this development to cross Sellers Avenue and connect into the proposed Gilbert levee system, eliminating the requirement for levees along both sides of Sellers Avenue. The levee will be built to an elevation of 10 feet above msl to protect against a flood elevation of 7 feet, with an additional 3 feet of freeboard. The remainder of the project perimeter, including Cypress Road, is higher than 10 feet msl and does not require further flood protection.

Community Components

The Park Impact Fee includes community parks (three acres per 1,000 residents), neighborhood parks (two acres per 1,000 residents) and open space components (1 acre per 1,000 residents.) The developer shall construct the neighborhood park and trails to meet the City requirements. To complete the obligation of the project toward the community park component, the project would pay the remaining park in-lieu fee to facilitate the provision of the community park facilities to be located north of the CCWD/USBR canal.

Infrastructure

The primary infrastructure systems would be sized to meet demands created by build out of the proposed project and surrounding area. Consistent with the City's General Plan and the project Development Agreement, infrastructure has been upgraded to accommodate future growth anticipated in the City's General Plan and General Plan EIR (e.g., roadway design, drainage, etc.). The infrastructure systems that would be constructed as a part of the project include storm drainage, wastewater, water supply, roadways, and a system of parks and trails.

The General Plan 2020 EIR analyzed the larger area-wide infrastructure systems, and project-level EIRs for the development to the west recently addressed the coordinated infrastructure needs for the Cypress Corridor. The Cypress Lakes community by Shea Homes has been separately analyzed under a certified project-level EIR. The Gilbert Property project-level EIR

addresses the integrated and coordinated infrastructure relationships raised by the project, including updates to the pending projects in the vicinity of the project site.

Project Site Access

Primary access to the Gilbert Property project would be by Cypress Road and Sellers Avenue. Knightsen Avenue also conveys traffic to the rural parts of East Contra Costa County. The Gilbert residential development would have a signalized primary entrance at the intersection of Franklin Lane and Cypress Road with a secondary entrance at the intersection of Sellers Avenue and the proposed spine road.

Roadway Improvements

Consistent with the Oakley 2020 General Plan, roadway infrastructure would be constructed to meet the needs of new residential neighborhoods and provide access to this portion of Oakley. Street widths would be designed in accordance with traffic studies completed for the project as well as the Oakley 2020 General Plan. The proposed project includes both on-site and off-site roadway improvements.

The Oakley 2020 General Plan classifies Cypress Road as a major arterial and further states that such roads are typically divided with four or more lanes. The City's Long Range Roadway Plan analyzed potential land uses for the East Cypress Corridor and recommended that Cypress Road be a six-lane divided arterial from Sellers Avenue to Jersey Island Road and a four-lane divided east of Jersey Island Road and west of Sellers Avenue. The East Cypress Corridor Specific Plan (ECCSP) further refined the probable land uses in the area, and tentative maps for the larger land areas in the ECCSP are currently being processed. Depending on the final land uses of the ECCSP, Cypress Road between Sellers Avenue and Jersey Island Road may either be a four- or six-lane divided arterial. The Gilbert Property project would provide the first increment of this improvement by constructing three westbound lanes with a landscaped median and one new eastbound lane along the entire property frontage

Sellers Avenue will be designed as ultimately a four-lane divided road from Cypress Road to the project boundary with the CCWD/USBR right of way. The Gilbert Property would include the construction of two of these northbound lanes and one southbound lane plus half of the median improvements as a portion of the project.

Local streets would be designed and constructed per City of Oakley standards.

Roadway improvements would include the following:

- Right of way and easement acquisition on the south side of Cypress Road and along Sellers Avenue south of Cypress Road;
- Removal of existing structures located in the central area of the project site;
- Transition of Cypress Road to the existing two-lane road to the west and to the east of the Gilbert Property;
- Transition of Sellers Avenue south to the existing two-lane road;

- Property dedication and improvement of Sellers Avenue north to the CCWD/USBR right of way;
- Modification of existing traffic signals at Sellers Avenue and Knightsen Avenue and installation of new traffic signals at entries;
- Intersection improvements at Franklin Lane including transitions to the south;
- Extend culverts under Cypress Road near Knightsen Avenue as needed for Cypress Road widening;
- Modification of existing driveways to adjacent properties;
- Overhead and underground utility relocation as needed; and
- Modifications of utility services including drainage, irrigation, power, telephone, cable, etc. to adjacent properties.

Storm Drain

The design of the storm water management facilities for the Gilbert Property project would be developed to control peak storm water flows, improve the quality of the storm water runoff before being discharged from the site, and to protect the homes from flooding during large storm events. A storm water pond would be located in the central portion of the Gilbert Property. The pond's surface area would be approximately five acres and pumped into the existing outfalls to Emerson Slough, which is consistent with the area's drainage shed. The pond would be sized to accommodate developed flows for the proposed project as well as the existing flows from properties to the south and east. As the properties to the south develop, additional ponds or below grade detention would need to be constructed within those properties to detain storm flows. The outfalls have already been comprehensively studied and analyzed for CEQA purposes and permitted by the City of Oakley under the entitlements for the Cypress Grove subdivisions to the west (8678, 8679 and 8680), which has been constructed. As a result, these outfalls are not considered part of the proposed project.

Wastewater

The Ironhouse Sanitary District (ISD) is responsible for provision of services to the entire Cypress Corridor area and would provide wastewater service to the project site. ISD is the successor to the former Contra Costa County Sanitation District No. 15 and the Oakley-Bethel Island Wastewater Management Authority, which merged and reorganized as ISD in 1992. ISD owns and operates the wastewater collection, treatment, storage, and disposal facilities for the City of Oakley, unincorporated eastern Contra Costa County communities including Bethel Island, and the area in between. ISD staff is currently updating their wastewater master plan and conducting CEQA review covering the master plan, for which all components of the wastewater treatment facilities are being evaluated. This plan is intended to develop sufficient wastewater system facilities to accommodate the entire jurisdiction—of which Cypress Corridor is only one part—at build out of the General Plan. The wastewater system is composed of collection, treatment, and disposal sub-systems.

Currently, properties connected to the system on Cypress Road pump their sewage to the treatment plant through an existing 14-inch force main in Cypress Road. The force main

connects to an existing 18-inch gravity main in State Route 4 (SR 4) that flows to the treatment plant. Ironhouse Sanitary District has anticipated that a second force main, estimated at 14 inches, may be needed to serve ultimate City buildout and the ISD service boundary. This line may be constructed in Cypress Road or along the northern trail corridor adjacent to the CCWD/USBR right of way. The Gilbert Property project may accommodate a portion of this improvement if within the project boundary.

The Gilbert property would construct a sanitary sewer pump station onsite to collect onsite sewer flows to accommodate regional needs such as serving the Burroughs and Baldocchi properties, and pump them directly into the existing 14-inch force main located in Cypress Road. Ironhouse has indicated that construction of a new 14-inch force main will be required, that flow from the project and other nearby developments would require upsizing of the trunk service lines, and that gravity sewer service should be used. The proposed project would be required to pay fair-share fees toward the development of this additional force main.

Water Supply

The Diablo Water District maintains the existing water supply and infrastructure in the City of Oakley and has provided a Water Supply Assessment indicating that adequate supply exists to serve the proposed development. The Diablo Water District is a water retailer and is provided water by CCWD/USBR, acting as a water wholesaler. Water mains for the Gilbert Property project would be constructed in accordance with Diablo Water District's master plan and dedicated to the District upon completion. To serve the project area, a 20-inch water main has been constructed in Cypress Road from SR 4 to Sellers Avenue, and a 24-inch water main has been constructed in Cypress Road from Sellers Avenue to the Cypress Lakes community by Shea Homes, as has been separately analyzed under the certified project EIR for the Shea Cypress Lakes project.

The western portion of the Gilbert property is located within the boundaries of CCWD Service Area A. Service Area A is the Los Vaqueros Project (LVP) Planning Area for receiving LVP water quality benefits. The eastern portion of the Gilbert property is located within the boundaries of CCWD Service Area B. The project needs to be annexed to the Central Valley Project (CVP) Contractual Service Area. However, the final CEQA documentation and other environmental information, including evidence of compliance with ESA and other federal regulations would need to be completed for the Gilbert Property project and coordinated through CCWD for submission to the Bureau of Reclamation as an inclusion application.

The proposed project would also need a source of water for the recharge of the storm water pond during the dry season and for irrigation of common area landscaping, including the park. The project would get this water from one of two potential sources. One potential source is groundwater, which would require the construction of a well in the park/storm water pond area. The other possible source is through the use of water from the Emerson Slough. The Gilbert homebuilders are considering the possibility of entering into an agreement with the City of Oakley to continue to use this riparian water right for lake recharge and irrigation purposes.

REQUIRED PUBLIC APPROVALS

The proposed project requires the following discretionary actions by the Oakley City Council:

- Certification of an Environmental Impact Report;
- Rezone to Planned Development (P-1) (including Preliminary Development Plan);
- Approval of Parcel Maps;
- Approval of Vesting Tentative Maps;
- Approval of Design Review;
- Acquisition of right of way and easements;
- Approval of Tree Removal Permit;
- Approval of Grading Permit;
- Approval of Demolition Permit;
- Approval of Building Permits; and
- Approval of pending cost-sharing agreement between the City and the developers of the proposed project and other nearby projects.

The following are actions required by other agencies:

- NPDES general construction stormwater permit from the U.S. Environmental Protection Agency;
- Section 404 permit from the U.S. Army Corps of Engineers;
- Inclusion into the CCWD's contractual service area for CVP water; and
- Flood Control District approvals and any other agency approvals required for the levee improvements.

4.0 ENVIRONMENTAL ASSESSMENT OF THE GILBERT PROPERTY PROJECT

4.1 INTRODUCTION TO THE ANALYSIS

4.1 INTRODUCTION TO THE ANALYSIS

INTRODUCTION

Chapter 4 analyzes the potential impacts of the Gilbert Property project on a range of environmental issue areas. Sections 4.2 through 4.13 describe the focus of the analysis, references, and other data sources for the analysis, the environmental setting as it relates to the specific issue, project-specific impacts and mitigations measures, and cumulative impacts of the proposed project for each issue area. The format of each of these sections is described below.

DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial or potentially substantial adverse change in the environment (Public Resources Code Section 21068). The Guidelines implementing CEQA direct that this determination be based on scientific and factual data. The specific criteria for determining the significance of a particular impact are identified within the impact discussion in each section, and are consistent with significance criteria set forth in the CEQA Guidelines.

EFFECTS FOUND TO HAVE NO IMPACT IN INITIAL STUDY

The Initial Study (Appendix C) prepared for the Gilbert Property project as a part of this EIR includes a detailed environmental checklist addressing a range of technical environmental issues. For each technical environmental issue, the Initial Study identifies the level of impact for the proposed project. The Initial Study identifies the environmental effects as either "no impact," "less-than-significant," "potentially significant with mitigation incorporated," or "potentially significant." The Initial Study provided the following conclusions:

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

Air Quality

- Objectionable odors affecting a substantial number of people.

Biological Resources

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

Geology and Soils

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

Hazards and Hazardous Materials

- Safety hazards for people residing or working in the project area for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.
- Safety hazards for people residing or working in the project area for a project within the vicinity of a private airstrip.

Hydrology and Water Quality

- Inundation by seiche, tsunami, or mudflow.

Land Use/Planning

- Physical division of an established community.
- Conflicts with any applicable habitat conservation plan or natural community conservation plan.

Noise

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

Population and Housing

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

Traffic and Circulation

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

The above impact categories are described in the Initial Study and were deemed less-than-significant. Under Public Resources Code Section 21100(c), therefore, these impacts are not

addressed further in this analysis. All remaining issues were identified in the Initial Study as potentially significant and are discussed in this Draft EIR.

ISSUES ADDRESSED IN THIS DRAFT EIR

The Initial Study identified potentially significant environmental impacts, which required further analysis. This EIR provides the additional analysis necessary to address the technical environmental impacts not fully resolved in the Initial Study. Consistent with the conclusions of the Initial Study, the following environmental issues are addressed in this chapter of the Draft EIR:

- Aesthetics;
- Land use and agricultural resources (including Williamson Act contracts);
- Traffic and circulation;
- Air quality;
- Noise;
- Hazards;
- Biological resources;
- Geology;
- Mineral resources (including gas and oil resources);
- Historical and cultural resources;
- Hydrology, water supply, and water quality; and
- Public services and utilities (includes potential impacts to recreation).

SECTION FORMAT

In Chapter 4, each section addressing a specific environmental issue begins with an **introduction** describing the purpose of the section. The introduction is followed by a description of the project's **environmental setting** as it pertains to that particular issue. The setting description is followed by the **regulatory context** and the **impacts and mitigation measures** discussion. This discussion contains the **significance criteria**, followed by the **methods of analysis**. The **impact and mitigation** discussion includes impact statements prefaced by a number in bold-faced type. An explanation of each impact and an analysis of its significance follow each impact statement. All mitigation measures pertinent to each individual impact follow directly after the impact statement (see below). The degree of relief provided by identified mitigation measures is also evaluated. An example of the format is shown below:

4.x-1 Statement of impact.

Discussion of impact for the proposed project in paragraph format.

Statement of ***level of significance*** of impact prior to mitigation is included at the end of each impact discussion.

Mitigation Measure(s)
Statement of *level of significance* after the mitigation is included immediately preceding mitigation measures.

4.x-1a *Recommended mitigation measure(s) presented in italics and numbered in consecutive order.*

4.x-1b *Mitigation measure.*

4.2 AESTHETICS

4.2 AESTHETICS

INTRODUCTION

This section of the EIR describes the existing aesthetic values of the project site and the region, and assesses the impacts on aesthetics created by the approval of the Gilbert Property project. The California Environmental Quality Act (CEQA) describes the concept of aesthetic resources in terms of scenic vistas, scenic resources (such as trees, rock outcroppings, and historic sites within a state scenic highway corridor), the existing visual character or quality of the project area, and light and glare impacts. The following impact analysis is based on information drawn from the *City of Oakley 2020 General Plan*[1], *General Plan EIR*[2], and the *General Plan Background Report*[3].

ENVIRONMENTAL SETTING

Local Setting

The topography of Oakley is predominantly flat. Oakley's scenic resources include the waterways of the Delta, Dutch Slough, Marsh Creek, habitat areas, and open space land. Other scenic resources include views of Mt. Diablo west of the City. The preservation of scenic resources and view corridors within Oakley, (i.e., Mt. Diablo, Delta, river, etc.), was identified as a significant issue during the General Plan public review process.

Views of the Delta are primarily visible from the waterfront marinas. Mt. Diablo is considered a scenic resource by the Oakley 2020 General Plan (p. 6-28), and views of Mt. Diablo can be seen from almost anywhere in the City. The rural small town character is evident throughout the City, both in the historic downtown area along Main Street and in the agricultural areas to the south.

Unique Visual Features

The Gilbert property has small rounded hills composed of old sand dunes in the center of the site. The Gilbert property has historically been used for grazing, and the surface vegetation generally consists of moderate to heavy growth of grasses and weeds. Several large and small diameter trees are situated along the eastern and southern boundaries of the Gilbert property. An unlined drainage ditch borders the Contra Costa Canal to the north, and a narrow trench historically used for irrigation is located to the north of the dune hill. Abandoned buildings and structures, pipes, tires, and debris were observed on the project site at the time Stevens, Ferrone & Bailey's site visit on August 3, 2004[4].

Views from the Project Site

A few existing features are visible from the site, including the elevated portions of the Burlington Northern Santa Fe Railroad to the southwest of the project area, and the Contra Costa Canal

which borders the site to the north and east. The Cypress Grove residential project was recently constructed to the west of the proposed project site, beyond the vacant Emerson property. Delta Vista Middle School also exists to the west. The landscape to the south of Cypress Road is characterized by rural scenery and a number of dispersed residential structures and outbuildings. In addition, Mt. Diablo can be seen from the project site.

Project Features

The proposed land plan for the Gilbert Property project site includes commercial and residential development, trails, a park, levees, and a storm water detention pond, as well as the infrastructure improvements necessary to accommodate the new development (See Chapter 3, Project Description, of this Draft EIR for a complete description of project features.)

REGULATORY CONTEXT

A number of existing plans and programs relate directly to the goals of the Oakley 2020 General Plan Open Space and Conservation Element, which provide for goals and policies, which protect existing scenic resources. Enacted through state and local action, these plans and programs are administered by agencies with responsibility for their enforcement.

Local Regulations

Heritage Tree Preservation Ordinance (Oakley Municipal Code Section 9.1.1112)

The City's Heritage Tree Preservation Ordinance was adopted as part of the Contra Costa County zoning provisions. The ordinance protects designated heritage trees, preventing the removal of such trees without approval of a tree permit.

City of Oakley 2020 General Plan

The following applicable goals and policies related to aesthetic resources from the Oakley 2020 General Plan Land Use Element:

General Land Use

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

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

Residential

Goal 2.2 Create new residential developments and preserve existing neighborhoods to reflect the high quality of life in Oakley.

Policy 2.2.1 Recognize Oakley's predominantly single family residential character and distinctive qualities in planning and development decisions.

Policy 2.2.2 Require that new development be generally consistent with the scale, appearance, and small town character of Oakley.

Policy 2.2.10 Require the establishment of lighting and landscaping districts, as appropriate, for new residential developments.

Community Character

Goal 2.8 Encourage projects exhibiting excellent design and sensitivity to the community, while preserving the community character of the City of Oakley.

Policy 2.8.8 New development should continue the existing adjacent neighborhood concepts, including street pattern, street trees, setbacks, and scale, as appropriate. Gradual transition of uses shall be strongly encouraged.

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

Goal 6.6 Preserve and enhance existing open space resources in and around Oakley and balance open space and urban areas to meet the social, environmental and economic needs of the City now and for the future.

Scenic Resources

Goal 6.7 Seek to preserve the scenic qualities of the Delta Waterway, Marsh Creek, and views of Mount Diablo.

Policy 6.7.1 Encourage preservation and enhancement of views of the Delta and Mount Diablo to the extent possible.

Policy 6.7.2 New development and redevelopment along the Delta, adjacent to Marsh Creek and throughout the City should take advantage of view opportunities and visual impacts to the waterway and Mount Diablo, respectively.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Based on the CEQA Guidelines and the City goals and policies, an impact to the aesthetic values of the project area would be considered significant if any of the following conditions would potentially result from implementation of the proposed project:

- A substantial adverse effect on views of Delta Waterway, Marsh Creek, and views of Mount Diablo;
- Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic sites within a state scenic highway corridor;
- Substantial degradation of the existing visual character or quality of the site and its surroundings;
- Creation of a new source of substantial light or glare that would adversely affect day or nighttime views in the area; or
- Alteration of the existing, agricultural character of the project site.

Method of Analysis

This section gives full consideration to the development of the project area, and acknowledges the physical changes to the existing setting. Impacts to the existing environment on the project site are to be determined by the contrast between the site's visual setting before and after proposed development. In this analysis, emphasis has been placed on the transformation of the existing predominantly rural setting into a landscape characterized by urban buildout. Although few standards exist to singularly define the various individual perceptions of aesthetic value from person to person, the degree of visual change can be measured and described in a reasonably objective manner in terms of visibility and visual contrast, dominance, and magnitude. Current residents are considered to be sensitive to the visual and aesthetic transformations in the project area as a result of future development.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.2-1 Impacts to scenic vistas and natural resources along scenic highways.

Currently, the rural setting surrounding the project area provides views of open agricultural areas to the north and east, and Mt. Diablo to the west. However, the Burroughs site area directly east of the project site and the vacant Emerson site to the west of the proposed project, are under Development Agreements similar to the Development Agreement for the proposed project, which allow for residential development on the sites. The residential development of the Emerson and Burroughs sites would be consistent with City of Oakley General Plan designations, which allow for residential development. Furthermore, the Cypress Grove Corridor Specific Plan

anticipates that the area to the east of the Burroughs site also be developed for residential uses. The Emerson site is further bounded on the west by the recently completed Cypress Grove residential subdivision, and the site includes an existing school and some existing residences. The scenic vistas and visual natural resources within and around the City of Oakley contribute to the quality of the community. Oakley's scenic resources include the waterways of the Delta, Dutch Slough, Marsh Creek, and Contra Costa Canal, habitat areas, and open space land. Other scenic resources include the view of Mt. Diablo west of the City.

The proposed project would result in the urbanization of a vacant, undeveloped area consisting of agriculture and pasture lands. However, much of the City's surrounding landscape is designated for buildout, which would result in a loss of open space that is considered a principal scenic resource. Although the City of Oakley seeks to preserve the scenic qualities of the Delta Waterway, Marsh Creek, and views of Mt. Diablo, the City also encourages new development and redevelopment along the Delta, adjacent to Marsh Creek and throughout the City to take advantage of view opportunities and visual impacts to the waterway and Mt. Diablo, respectively (GP, Policy 6.7.2).

Development associated with the proposed project could create adverse scenic impacts along State Route (SR) 4. The rural setting near SR 4 provides views of open areas to the north, and the Sierra-Nevada Mountain Range to the east. However, the Cypress Grove residential development is under construction directly between SR 4 and the Gilbert Property, which effectively shields the scenic vista from SR 4. In addition, SR 4 is not officially designated as a State Scenic Highway.

As previously mentioned, Mt. Diablo can be seen from the project site and is considered a scenic resource by the Oakley 2020 General Plan. The proposed project would be relatively low-profile, with a maximum two-story height for the residences and would thus not be expected to significantly alter the distant views of Mt. Diablo for future residents in the project vicinity; rather, views of Mt. Diablo would be available to future residents of the proposed project, and would thus be consistent with the General Plan Policy 6.7.2. For the few residents existing in the project vicinity, the proposed project would not be expected to impact their views of Mt. Diablo because existing residences are located south/southwest of the project site and Mt. Diablo is located generally west of the project site. Additionally, the Cypress Grove project and the Emerson property lie to the west of the Gilbert property. Therefore, the project would not adversely affect views for current residents of the area. In addition, views of Mt. Diablo for drivers along the portion of Cypress Road located adjacent to the project site would not be expected to be blocked by the development because Cypress Road lies to the south of the site and Mt. Diablo lies to the west. Mt. Diablo is a prominent resource that can be seen from almost anywhere in the City.

The project site is also bordered on the north and east by agricultural land and on the south by agricultural land and some residential development. Therefore, very few residents exist in the project vicinity that would be affected by the project. All of the areas surrounding the project site except for the land to the north are planned to be

developed by the Oakley 2020 General Plan; therefore, the project would be consistent with the majority of the future land uses in the project vicinity.

Although the existing views could be impacted by the proposed project, the project is consistent with the type of development anticipated by the Oakley General Plan type for the site. In addition, the *Oakley 2020 General Plan* contains goals, policies and specific implementation programs that are designed to ensure this impact will not be significant. A thorough list of all Oakley 2020 General Plan goals, policies, and implementation programs can be found in Appendix B of the Oakley 2020 General Plan Draft Environmental Impact Report. Because the City of Oakley General Plan includes goals and policies that encourage the preservation of the waterways of the Delta, Dutch Slough, Marsh Creek, habitat areas, open space land and views of Mt. Diablo west of the City, these visual resources will be efficiently protected. The Plan's goals, policies, and programs also mitigate any potential impacts on the aesthetic qualities inherent in the project area. Therefore, consistent with the Oakley 2020 General Plan Draft Environmental Impact Report, the impact of the proposed project to scenic resources would be considered ***less-than-significant***.

Mitigation Measure(s)
None required.

4.2-2 Degradation of the existing visual character or quality of the project site or project area.

The development associated with the proposed project may have impacts on the visual character or quality of Oakley. Currently, the character of Oakley is that of a primarily low-density residential community, with a downtown area. The proposed project consists of a planned residential community. The development of the proposed project would contribute to the small town character of the City, thus helping to solidify the small-town rural community character of Oakley. The *Oakley General Plan* includes policy direction that would help to reduce impacts of proposed development, including requirements for compatibility with existing development, as well as urban design elements for maintaining the quality of development in Oakley. The following discussion describes how the architecture and landscape architecture elements proposed for the Gilbert Property project would contribute to the small town community.

Architecture

The recommendations and requirements proposed by the City of Oakley guided the design proposed for the Gilbert Property project. The architectural design of the proposed residences have been developed to be compatible with the surrounding community and to ensure that the Gilbert Property area would eventually evolve into an attractive community that is pleasant for future residents.

Housing Architectural Design Character

Residential neighborhoods would include a variety of traditional architectural styles with contemporary interpretations coordinated to enhance and compliment the local character. Styles would be selected from those proposed in Oakley's Residential Design Guidelines, including arts and crafts, craftsman, bungalow, California traditional, ranch, and prairie styles. Styles would be arranged to establish a distinct character for individual neighborhoods, or home builders may choose to propose a more eclectic dispersion of styles.

The primary architectural design goal is to create attractive, friendly communities with a hometown character and ambiance that is reflective of the Delta area and its agrarian past. Homes would emphasize a variety of primary design elements, including functional porches, significant minimization of the visual exposure of garage doors to public street views, roof forms designed consistent with the architectural style, reduction of the visual mass of two-story homes, articulated building elevations, "traditional" house proportions, and architectural details to comply with the City's Residential Design Guidelines.

Landscape Architecture

Similar to architecture, the creativity of the landscape architecture would establish the community character and desired level of livability. The following discussion presents some ways in which this would be accomplished for streetscapes, parks, and open space.

Cypress Road Landscape Design Character

A minimum of 25 feet of landscaping (including a trail) is planned along the north side of Cypress Road, and 15 feet along the south side along the southern boundary of the Emerson, Gilbert and Burroughs properties. A generally 16-foot wide landscaped street median divider would be constructed in the center of Cypress Road. A decorative sound wall would be constructed along the north side of Cypress Road. In addition, a creatively designed "highlighted intersection" is planned for the Cypress Road and Sellers Avenue intersection, as called for in Oakley's Residential Design Guidelines.

In addition, the Gilbert Property project would contribute fair-share funding toward the planting of twenty-four-inch box-sized trees throughout the Cypress Road frontage landscape area at a ratio of at least three trees per each tree needed to be removed to accommodate the street improvement and utilities work.

Substantial and naturally contoured berms, minimized use of sound walls, breaks in the linear nature of the walls, and dense landscaping are to be a high priority in this very important design element of the community character. Additional important guidelines for sound walls and adjacent landscaping that would apply to the project are provided in the City's Residential Design Guidelines.

Sellers Avenue Landscape Design Concept

The full length of Sellers Avenue within the area, which includes the Gilbert property, would be to create a strong visual entry to the future Community Park/Delta Preserve planned to the immediate north. This goal would be accomplished through a "highlighted intersection" at Cypress Road, a decorative "neighborhood entry" at the east-west connector street intersection, a landscaped street median, and generous planting strips with tall canopy trees and meandering trails along both sides of Sellers Avenue as practicable.

Landscape features within these areas would include primarily native and Delta plant species, columnar wind break(s), and accent design features consistent with the agricultural history of the area. This landscape design character is to be carefully coordinated with future community park plans and with the shopping center landscape design planned for the southeast corner of the neighboring Emerson project site, particularly at the Cypress Road and Sellers Avenue frontages of the center.

Street Yard Private Landscape Design Concept

Street yard landscaping would be provided for all private residential lots by the home builders. The landscaping would include trees, shrubs, groundcover, sidewalks and fencing. Landscaping would be maintained through homeowner's associations for all green court cluster and duet lots, and possibly for other housing product lots as well. Non-street yard facing landscaping improvements would generally be the responsibility of the future residents.

Landscape designs for project would include a variety of street yard private landscape arrangements for City approval during the P-1 Development Plan approval phase of the planning process. These designs should relate to the Delta/agrarian character of the proposed project area in terms of plant materials, and use of decorative side and rear yard fencing that strictly conforms to all City standards and design guidelines. A decorative street sign design and street light pole/fixture, per Residential Design Guidelines, would be selected for use along all interior streets within the project area that reflect the character of the Gilbert Property project site.

Street Entry Landscape Design Character

The first visual impression of a neighborhood is created at its primary street entries. Oakley's Residential Design Guidelines specify that "an entry should feel like an outdoor room that creates a sense of entry and enclosure, creatively blending planting, paving, lighting, signage, street furniture and landmark elements into a composition that expresses a sense of welcome and identity."

The key points of entry into the Gilbert Property neighborhoods would be at the Sellers Road/East-West Connector Street entry into the Gilbert property neighborhood, and the Cypress Road entry into the property.

Park Landscape Design Concept

The neighborhood park design would emphasize a natural rather than urban feeling and would create its own individual and distinct identity. Park furniture, play and shade structures, and other structures are to reflect the Delta and agrarian character of the proposed project area. Mounding would be incorporated into the park landscape to create visual interest and provide screening of parking areas, etc., while not creating security issues.

Plant materials would consist primarily of native trees and shrubs, turf, "no-mow" grasses, and native and/or non-native colorful accent plants at key focal areas. Major emphasis is to be placed on heavy planting of shade trees to provide relief during the hot summer months. Tree-lined windbreaks are also appropriate for wind protection, as well as to reflect the agricultural character of Oakley. Pedestrian areas would be surfaced with pervious materials, wherever possible.

Open Space Landscape Design Character

Open space within the project area would include a strip that parallels the Contra Costa Canal, and the creek/drainage canal area that separates the Gilbert Property and the Burroughs Property. Trees are to be planted in natural-appearing clusters throughout the open space next to the Canal, but would not be permitted on the actual levees. Trees would be situated so as to provide privacy screening for homes that face toward the Canal trail. Fencing along the entire length of the Canal open space/residential border would be of a consistent decorative design and constructed of either a wrought iron, aluminum or vinyl material. All plant materials within this area would be native to the Oakley area. Delta views are not currently available from the proposed project site because of the Bureau of Reclamation berm.

New levees would be landscaped to the fullest extent permitted up to the City of Oakley's sole discretionary approval. All plant materials in these areas would consist of native species.

The existing creek/drainage channel area that separates the Gilbert Property and the Burroughs Property to the east would be restored with native riparian plant materials to the fullest extent permitted and feasible up to the City of Oakley's sole discretionary approval.

In addition to the architecture and landscape architecture elements proposed by the Gilbert Properties, the proposed project would be consistent with the General Plan goals and policies, a ***less-than-significant*** impact would occur.

Mitigation Measure(s)
None required.

4.2-3 Impacts associated with new sources of light and glare.

The proposed project would create new sources of light and glare where none currently exist in areas that are currently open space or pasture land. The change from an undeveloped agricultural property to residential uses and recreational uses would generate new sources of light and glare such as building lighting and streetlights. The introduction of street lighting in currently undeveloped areas would alter the existing unlit conditions in the area. Night lighting associated with residential developments would be visible to neighboring properties that are not accustomed to night lighting; however, the types of lighting would be typical of residential uses, and consistent with the neighboring residential properties. The development would not introduce lighting unlike that which already exists at other residences in the City of Oakley. However, this level of light would represent a substantial change from the existing condition; therefore, the impact would be considered ***potentially significant***.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the potential impacts to a *less-than-significant* level.

4.2-3 *During construction the developer shall install hooded and/or shielded street lights to avoid excessive lighting on adjacent properties, for the review and approval of the Community Development Department.*

4.2-4 Alteration of the existing agricultural character of the project site.

The project site has a current appearance of being rural in nature. Implementation of the proposed project would result in the conversion of the undeveloped, rural character of the project site to urban residential setting with parks. Because the project site currently provides open views from the adjacent roadways and surrounding properties, the change in the character of the site would be recognizable. The change in the site from a rural to urban environment would constitute a permanent alteration of the existing visual character of the project site. However, the site has been designated for development in the Oakley 2020 General Plan. In addition, the Oakley 2020 General Plan EIR under Impact 3.2-B concludes that development anticipated in the General Plan would have a *less-than-significant* impact to the alteration of existing visual character or quality and urban design of the Planning Area if General Plan policies are implemented. The applicant must meet City Design Guidelines for all structures, which would ensure that the proposed project would comply with applicable General Plan policies. In addition, the numerous design concepts described in Impact 4.2-2 above would help to retain elements of the agrarian character of the project site. Therefore, consistent with the Oakley 2020 General Plan Draft Environmental Impact Report, the impact would be considered ***less-than-significant***.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.2-5 Cumulative impacts related to a change in the visual character of the region.

The proposed project would contribute to the cumulative change in visual character of the eastern Contra Costa region from agricultural to residential and commercial. Due to the location of the project site within an agricultural area, the larger cumulative context of the visual impact of the proposed project could be considered as within the City as a whole. However, the properties in the immediate vicinity of the project are designated for development by the Oakley 2020 General Plan except for the land to the north. Therefore, in terms of the change to the visual character of the Gilbert Properties, development on the project site would be typical of what is planned for development on the adjacent properties. Should development be allowed, the character of the area would change from flat agricultural fields and roadways to residences interspersed with trees. Development in the City, in addition to the development on the project site, would contribute to a change in the visual character of the area.

However, the site has been designated for development in the Oakley 2020 General Plan. In addition, the Oakley 2020 General Plan EIR Impact 3.2-B concludes that development anticipated in the General Plan would have a less-than-significant impact to the alteration of existing visual character or quality and urban design of the Planning Area if General Plan policies are implemented. The applicant has submitted Design Guidelines and approval of Design Review by the City for all structures is required, which would ensure that the proposed project would comply with applicable General Plan policies. Therefore, consistent with the Oakley 2020 General Plan Draft Environmental Impact Report, the impact would be considered ***less-than-significant***.

Mitigation Measure(s)
None required.

Endnotes

[1] City of Oakley 2020 General Plan, December 2002.
[2] City of Oakley 2020 General Plan Draft Environmental Impact Report, September 2002.
[3] City of Oakley 2020 General Plan Background Report, September 2001.
[4] Stevens, Ferrone & Bailey Engineering Company, Inc. Geotechnical Investigation, Gilbert Property Residential Development. August 30, 2004.

4.3 LAND USE AND AGRICULTURAL RESOURCES

4.3 LAND USE AND AGRICULTURAL RESOURCES

INTRODUCTION

The land use impact analysis describes the existing land use setting of the Gilbert Property project site and the adjacent area, including the identification of existing land uses and current General Plan policies and zoning designations. The proposed Gilbert Property project is analyzed for consistency with existing City of Oakley policies and compatibility with surrounding land uses. The agricultural resources analysis describes the soils of the project site and whether or not the site is identified as prime farmland. Documents referenced to prepare this section include the *City of Oakley General Plan*[1], the *City of Oakley General Plan EIR*[2], and the *Contra Costa County Soil Survey*[3].

ENVIRONMENTAL SETTING

Land Use

Section 15125 of the CEQA Guidelines states that "an EIR must include a description of the physical environmental conditions in the vicinity of the project […] and shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans." The following provides the existing land uses on the project site, as well as the existing plans and policies that guide the development of the project site.

Prior to incorporation of the City of Oakley, Contra Costa County was responsible for planning and land use in the Oakley community. The 1990 Contra Costa County General Plan update designated the approximately 1,500-acre Cypress Corridor properties owned by the Emerson, Gilbert and Burroughs families as Mixed Use (M-8). In 1997, the County approved statutory development agreements providing vested rights to develop these properties, consistent with the County General Plan and EIR. In 1997, the County for CEQA purposes relied upon the General Plan EIR and approved development agreements providing vested rights to develop the M-8 area.

In 1999, the City of Oakley incorporated. This incorporation area included the M-8 area of the County. In 2000, the City of Oakley embarked on a process to prepare and process a new General Plan to specifically service the needs of the City. The General Plan included the 120-acre Gilbert Property with residential and commercial land use designations (see Figure 3-1, Regional Location Map, and Figure 3-2, Project Location Map in Chapter 3 of this Draft EIR). In December 2002, the City of Oakley adopted the Oakley 2020 General Plan (2002). As part of the General Plan update, the City certified a programmatic EIR and prepared an Oakley 2020 General Plan Background Report.

The Cypress Corridor Special Planning Area is envisioned as a primarily residential area with supporting commercial and public uses (Oakley 2020 General Plan, p. 2-23). The General Plan

describes Special Planning Areas as distinct geographic areas within and surrounding the City of Oakley that merit special consideration. Special Planning Areas are established to identify opportunities and constraints unique to each planning area and to provide further direction regarding the City's expectations for development in these areas. The Gilbert Property project occupies a portion of the Cypress Corridor Special Planning Area (see Figure 4.3-1, Special Planning Areas).

The Gilbert Property project site is bounded by the partially developed Cypress Grove project, the currently vacant Emerson property, Delta Vista Middle School, and Iron House Elementary School to the west, Cypress Road to the south, and the Contra Costa Water District Canal (CCWD/USBR Canal), which separates the project site from the open space acreage, to the north and the vacant Burroughs property to the east. The area north of the Canal is currently owned by the State of California and is anticipated to be restored to wetlands in the near future. A 55-acre portion of land immediately to the north of the CCWD/USBR canal and the project site at the end of Sellers Avenue is held in escrow, pursuant to a Memorandum of Understanding and Development Agreement, for future conveyance to the City of Oakley as a community park.

Existing Land Use

The Gilbert site is predominantly the level plain of a formerly irrigated pasture and has been recently disked for farm uses. A vegetated sand hill rises in the center of the site, a remnant of the sand dunes that once occupied this region. Several drainage ditches have been constructed through the site to control the flow of water during irrigation. Annual grassland weeds dominate the majority of the site. Abandoned buildings and structures include a trailer and several outbuildings. An elevated portion of land is located in the central portion of the property. Structures on the site include a dilapidated wooden and corrugated steel structure with an attached shed on a raised concrete foundation.

A former water tower and evidence of an abandoned water well are located north of the building and shed. Drainage ditches, unpaved roads and barbed-wire fences are located on the site. Concrete piping/culverts and troughs are adjacent to the unpaved roads on the western and central portions of the site. A water monitoring well was observed on a road in the middle portion of the site.

Existing Land Use Designations

The City of Oakley General Plan 2020 Land Use Diagram (see Figure 4.3-2) designates the following land uses for the Dutch Slough Framework Plan area, which includes the Gilbert Property project site:

Figure 4.3-1
Special Planning Areas

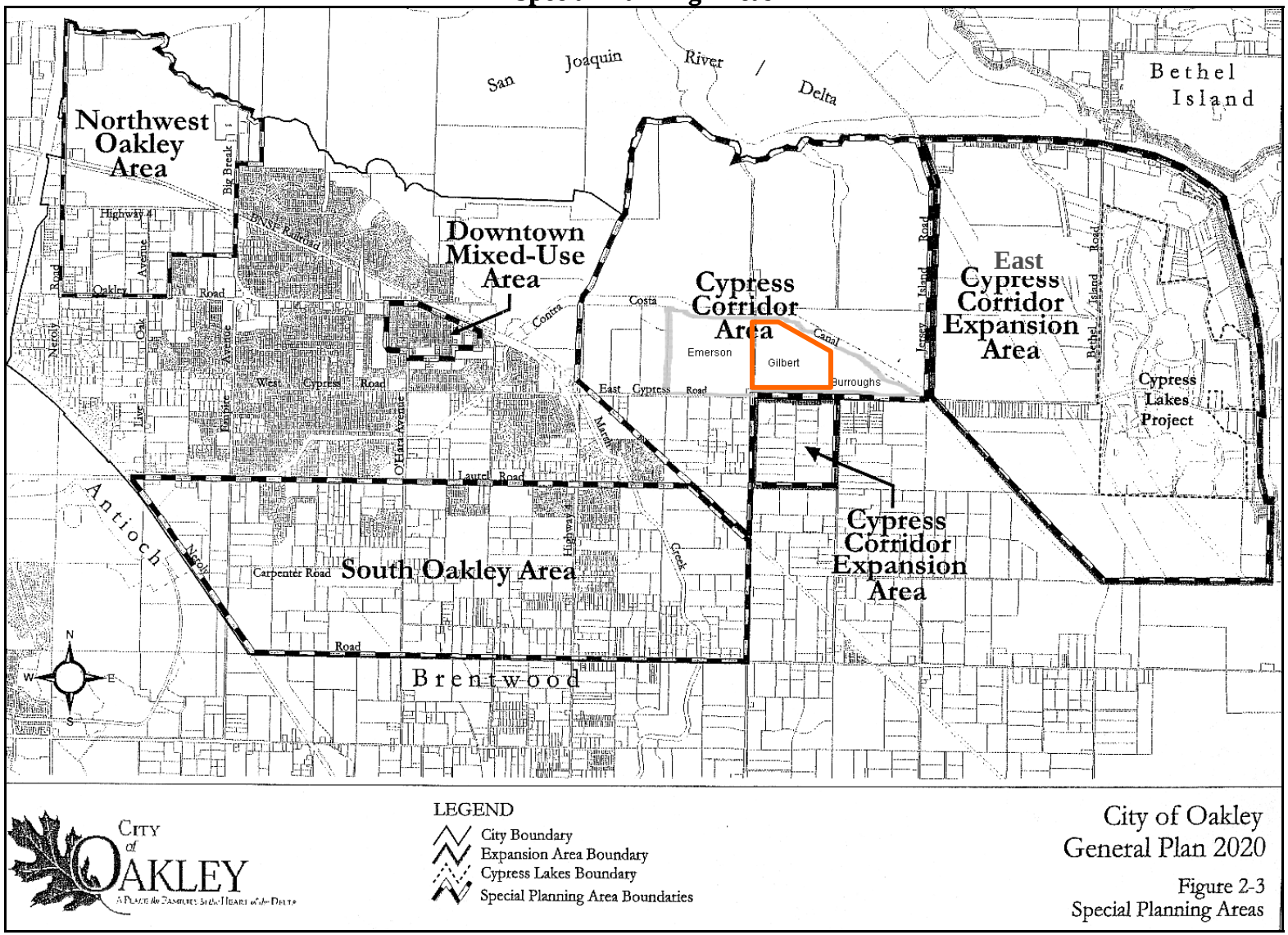
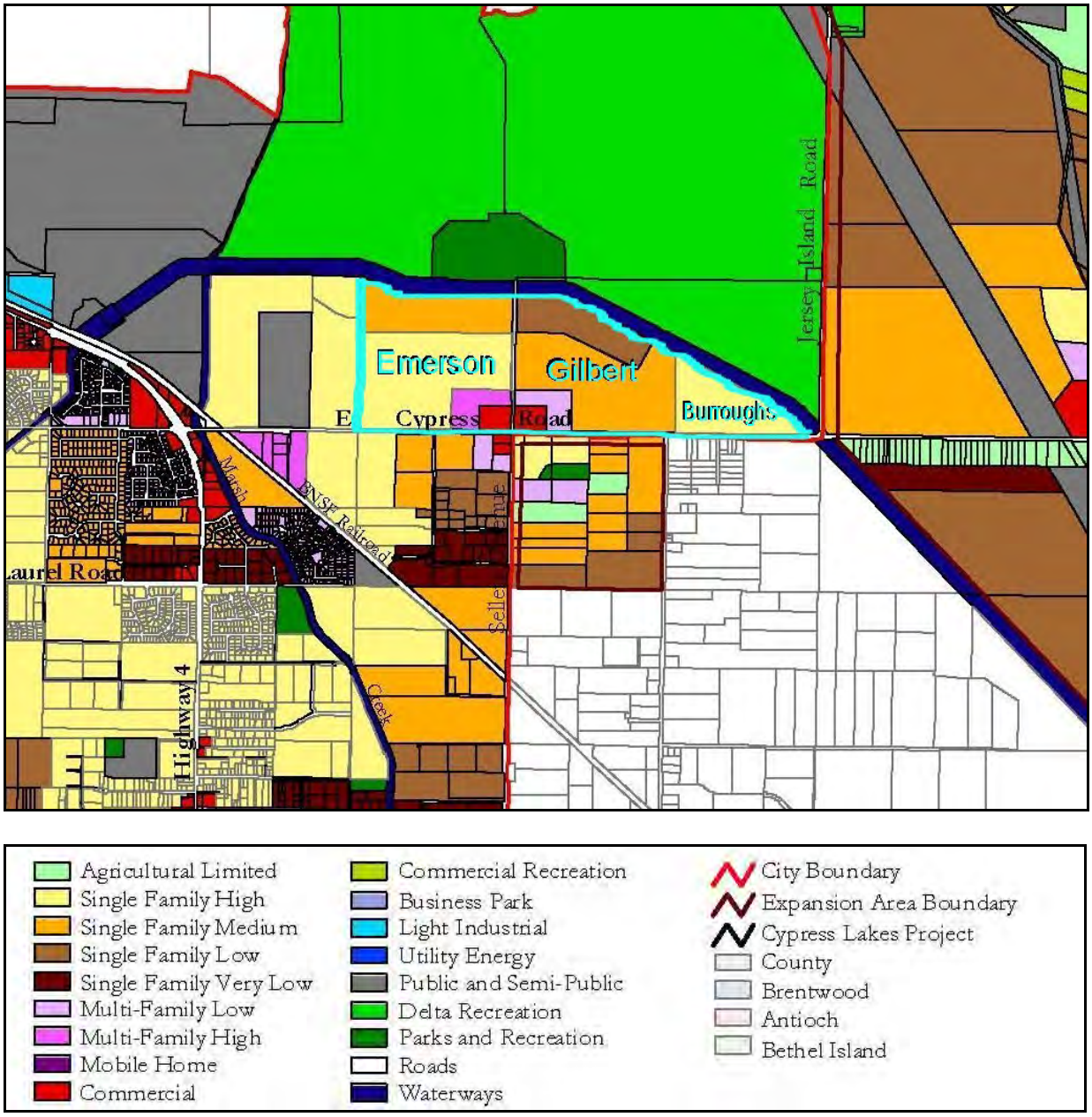


Figure 4.3-2
Existing Land Use Designations



Single-Family Residential, High Density (3.8-5.5 du/ac)
The purpose of the Single-Family Residential, High Density (SH) land use designation is to provide for moderately dense single-family residential development that is consistent with suburban uses. This designation allows for a minimum of 3.8 dwelling units per acre (du/ac) and a maximum of 5.5 du/ac. Sites generally range from approximately 6,000 to 8,600 square feet. Population density in this land use designation generally ranges from 12 to 18 persons per acre.

Primary land uses include detached single-family homes and accessory structures. Secondary uses may include home occupations, small residential care and childcare facilities, churches and other places of worship, and other uses and structures incidental to the primary use.

Single-Family Residential, Medium Density (2.3-3.8 du/ac)
The purpose of the Single-Family Residential, Medium Density (SM) land use designation is to accommodate moderate density, single-family residential development. Neighborhoods comprised of this designation would more closely resemble a typical suburban development with spacious yards and little resemblance to a rural neighborhood. This designation allows for a minimum of 2.3 du/ac and a maximum of 3.8 du/ac, with parcel sizes ranging from 8,600 to 14,000 square feet. Population density generally ranges from eight to 12 persons per acre.

Primary permitted land uses include detached single-family homes and accessory structures. Secondary uses may include home occupations, small residential care and childcare facilities, churches and other places of worship, and other uses and structures incidental to the primary use.

Multi-Family Residential, High Density (9.6-16.7 du/ac)
The purpose of the Multi-Family Residential, High Density (MH) land use designation is to provide affordable and rental residential units, and to maximize urban residential space. This designation allows for a typical apartment-style building or a condominium complex. This designation allows a minimum of 9.6 du/ac and a maximum of 16.7 du/ac. Expected population density would normally range between 20 to 36 persons per acre.

Appropriate primary land uses include attached single-family residences (such as duplexes and duets), multiple-family residences (such as condominiums, town houses, apartments, and mobile home parks), and accessory structures normally auxiliary to the primary uses. Secondary uses may include home occupations, group care and/or childcare facilities, and private schools.

Commercial (1.0 maximum floor area ratio)

This designation allows for a broad range of commercial uses typically found adjacent to residential neighborhoods, downtowns, and freeways. The particular form of commercial zoning for different areas of the City will depend, among other factors, on the

characteristics of surrounding land uses. General types of commercial uses include retail and service facilities, and limited office uses. Through sensitive design, commercial uses can be located near single-family residences with minimal disruption or impact. Typical uses may vary widely in size and purpose and include large-scale retail, regional-serving retail, grocery and convenience stores, salons, professional offices, restaurants, drug stores, dry cleaners, post office facilities, banks, and other uses of similar character and impacts. The following standards apply to commercial uses in this CO land use designation:

- Maximum Site Coverage: 40 percent
- Maximum Building Height: 35 feet
- Maximum Floor Area Ratio (FAR): 1.0
- Average Employees per Gross Acre: 26

Proposed Project

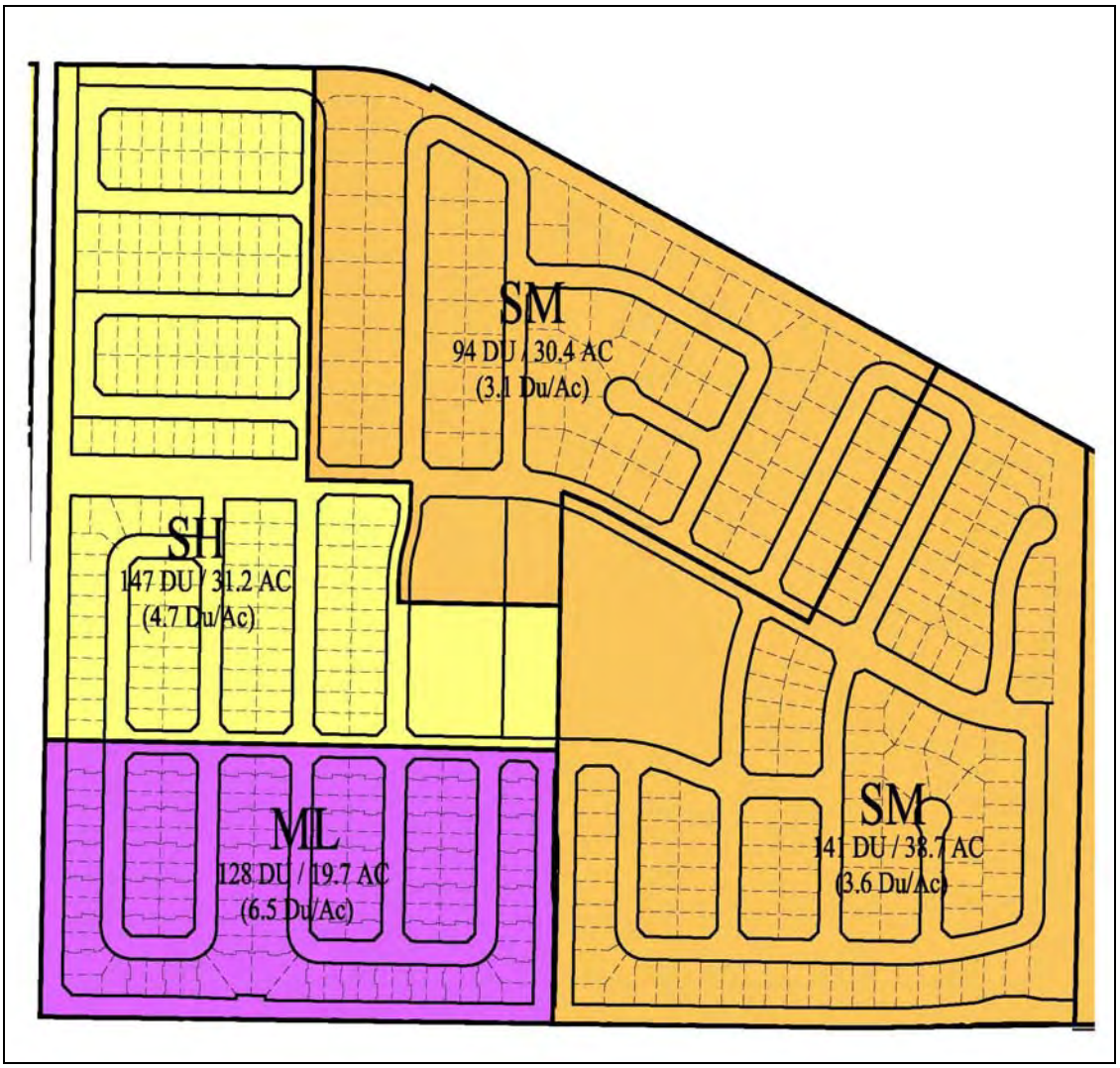
The proposed project would include single-family residential construction, trails, parks, levees, a storm water detention pond, as well as the infrastructure improvements necessary to accommodate the new development. The Oakley General Plan, page 2-13, states that the Land Use Diagram is approximate and requires some flexibility when interpreting the plan. The September 2005, Dutch Slough Planning Framework Study, which was preformed for the Emerson, Gilbert and Burroughs properties, elaborated on the development of the proposed project area, specifying that a 10-acre commercial development would be included in the southeast corner of the Emerson at the corner of Cypress Road and Sellers Avenue.

Although the General Plan Land Use Diagram places the commercial space on both the Emerson and Gilbert sites, the General Plan does not explicitly state that the commercial development be situated on the Gilbert site. The General Plan states that the "intersection of East Cypress Road and Sellers Avenue is designated for higher intensity uses, including a node of commercial uses at the intersection with multi-family or high density single family surrounding." (City of Oakley General Plan Land Use Element, Page 2-24.) The Framework Study specifies that the totality of the commercial development would be shifted onto the Emerson site. The Gilbert Project would include multi-family high-density land uses in the southeast corner of the project site (see Figure 4.3-3, Gilbert Land Use Diagram.)

Thus, the Gilbert Property project is consistent with the Oakley General Plan as to urbanizing the site and at the residential density proposed. In addition, the Gilbert

Property project is consistent with the land use densities included in the Development Agreement as well as those shown in the Framework Study.

Figure 4.3-3
Gilbert Land Use Diagram



Existing and Proposed Zoning

Under State law, cities and counties have broad latitude in establishing zoning standards and procedures. Outside of a general requirement for open space zoning and several special requirements governing residential zoning, State law establishes only broadly the scope of zoning regulation and sets minimum standards for its adoption and administration. One key requirement, however, is that zoning is consistent with the General Plan.

When the City of Oakley incorporated in 1999, it adopted the Contra Costa County Zoning Ordinance. On October 24, 2005, the City of Oakley adopted its own Zoning Ordinance, which went into effect on November 27, 2005. However, an updated zoning map has not been approved; therefore, the project site currently retains its County zoning designation, which is inconsistent with the General Plan land use designations for the site. The land use designations are therefore considered better descriptors of the types of uses intended and anticipated for the project site.

The Oakley 2020 General Plan Background Report lists the zoning classifications that are currently used within the City of Oakley (see Background Report; Table 2-2). Current zoning for the project site is Heavy Agriculture (A-3). In the Heavy Agriculture Zone, the following uses are permitted:

(1) All types of agriculture, including general farming, horticulture, floriculture, nurseries and greenhouses, mushroom rooms, dairying, livestock production, fur farms, poultry raising, animal breeding, aviaries, apiaries, forestry, and similar agricultural uses;
(2) Other agricultural uses, including the erection and maintenance of sheds, warehouses, granaries, dehydration plants, hullers, fruit and vegetable packing plants, and agricultural cold storage plants on parcels at least ten acres in size and buildings for the storage of agricultural products and equipment;
(3) A stand not exceeding two hundred square feet for sale of agricultural products grown on the premises. The stand shall be set back at least twenty-five feet from the front property line;
(4) Foster home or family care home operated by a public agency, or by a private agency which has obtained state or local approval (license) for the proposed operation, where not more than six minors reside on the premises with not more than two supervisory persons;
(5) A family day care home where care, protection and supervision of twelve or fewer children in the provider's own home are provided for periods of less than twenty-four hours per day, while the parents or guardians are away; and
(6) The residence of the owner, owners, lessee, or lessor of the land on which the use is conducted is permitted.

The project application includes a request to redesignate the properties in the project site from the existing zoning designation to Planned Development (P-1). The City of Oakley Zoning Ordinance states the following intent and purpose of the P-1 Planned Development zoning:

> A large-scale integrated development, infill development, or a General Plan special area of concern provides an opportunity for, and requires cohesive design when flexible regulations are applied, whereas the application of conventional regulation, designed primarily for individual lot development, to a large-scale development, infill development, or special area may create a monotonous and inappropriate neighborhood or development. The purpose of the P-1 District is to allow diversification in the relationship of various uses, buildings, structures, lot sizes and open spaces, ensure compatibility with surrounding land uses, and to ensure substantial compliance with the General Plan and the intent of the Municipal Code in requiring adequate standards necessary to satisfy the requirements of the public health, safety and general welfare. These standards shall be observed without unduly inhibiting the advantages of a large-scale site or special area planning.

The P-1 district permits any land use permitted in an approved final development plan, consistent with the General Plan. The applicant for the Gilbert Property has submitted a Tentative Map, which includes the final development plans for the P-1 zoning district. The applicant is also required to undergo Design Review in order to be compliant with the permitted uses, development standards, landscaping, and public improvements associated with the development of the proposed Gilbert Property project.

Surrounding Land Uses and Designations

The surrounding land uses consist of agricultural activities to the north, south, and east, including farming and livestock grazing, and construction activities to the west. The Gilbert Property project site is located to the east of the central area of the City of Oakley. The project site is surrounded by several existing and proposed subdivisions, the Contra Costa Canal, as well as park and recreational areas. North of the Gilbert Property site, the General Plan land use designations are Delta Recreation, and Parks and Recreation, including the future site for a Community Park. The Cypress Grove subdivision, and Delta Vista Middle and Iron House Elementary Schools are located west of the Emerson property, which is adjacent to the Gilbert property's western boundary. The Emerson property is designated for similar uses as the Gilbert property.

Surrounding General Plan Land Use Designations

The Burroughs property, which is designated for similar uses as the Gilbert property, is located directly east of the project site. The East Cypress Corridor Specific Plan area is located east of the Burroughs property. To the south are a variety of land use designations, including Commercial; Single Family Very Low, Low, Medium, and High; Multi-Family Low; Parks and Recreation; Agriculture; and Agricultural Limited.

The purpose of the Single-Family Residential, Low Density, Medium Density, High Density, Multi-Family Residential, Low Density, and Commercial land use designations are described above under the Gilbert land use designations discussion.

Delta Recreation

This land use designation encompasses the lowlands of the San Joaquin Delta along the City's northern edge. Most of the land designated Delta Recreation is currently within the 100-year flood plain as mapped by FEMA, which means the area is subject to periodic flooding.

The potential for flooding on lands designated Delta Recreation is due to the possibility that bay and river waters will overtop existing levees during periods of storms. Another possibility is that portions of the earthen levees may fail entirely during storms or earthquakes, resulting in flooding of low-lying areas. The effects of subsidence and high tides coincident with major storms may increase the danger of flooding.

Due to the proximity of the Delta, these lands have substantial recreational value and offer important opportunities for public access to the Oakley waterfront, including parklands and trails offering public access. Agriculture and wildlife habitat are also considered appropriate uses of these areas. Additional uses that may, at the City's discretion, be allowed within this designation include but are not limited to marinas, shooting ranges, duck and other hunting clubs, campgrounds, golf courses and other outdoor recreation complexes.

Conditional uses allowed in the Delta Recreation land use designation are limited to those low- to medium-intensity establishments that do not rely on urban levels of service or infrastructure, and which will not draw large concentrations of people to flood-prone areas. Specific regulations for development within the Delta Recreation designation are provided within the Goals, Policies and Programs section of the Land Use Element of the General Plan.

Additionally, lands within this designation may support valuable wildlife habitat, possibly including state and federally protected wildlife species. This area is an important component of the Pacific Flyway, a major waterfowl migration route in North America.

Parks and Recreation

The Parks and Recreation designation includes publicly owned City, County, and regional parks facilities, as well as publicly or privately owned golf courses. The City should strive to maintain a ratio of six acres of park for every 1,000 residents. The ratio of six acres of park per 1,000 population is based upon the existing inventory of developed and undeveloped park and open space lands within Oakley that are under the jurisdiction of the City, the local school districts and the East Bay Regional Park District.

Appropriate uses in this designation are passive and active recreation oriented activities, local and regional park and trails facilities, and ancillary commercial uses specifically related to the adjoining recreational activities. The construction of privately owned residences or general commercial uses, or the subdivision of land for purposes of urban development, is inconsistent with the Parks and Recreation land use designation.

Agriculture

This land use designation was established to allow agricultural uses to continue under appropriate best management practices. Typically, lands designated as Agriculture have either active cultivation of crops or some other type of use that is substantially agricultural in nature.

Due to the range of agricultural uses allowed in this designation, consideration must be given to the potential for use conflicts when urban development is proposed adjacent to designated Agriculture lands.

This designation allows for parcel sizes ranging between 2.5 and 20 acres. Population density would normally not exceed approximately one person per acre. Primary land uses include typical commercial agricultural uses, one single-family dwelling per legal parcel, and accessory structures normally auxiliary to the primary uses.

Agricultural Limited

The purpose of the Agriculture Limited (AL) designation is to accommodate light agriculture including vineyards, orchards, and row crops, animal husbandry and very low-density residential uses - reflections of the historic and continuing agrarian practices within Oakley. This designation provides for a minimum of 0.1 du/ac and a maximum of 1.0 du/ac, with a typical parcel size of 1.0 to 10.0 acres. Based on the above assumption, population density would normally range between one (1) to three (3) persons per acre.

Primary land uses may include single-family residences, secondary residential units, and limited agriculture and animal husbandry, subject to developmental and operational standards. Equestrian and livestock uses are permitted within the Agriculture Limited district, subject to the following limits: one horse or head of livestock allowed per parcel, with additional horses or livestock allowed on lots greater than one-half acre at the following rate – one additional animal per 10,000 square feet in excess of one-half acre. Limited commercial activities are possible under this land use designation, including roadside produce stands, animal boarding and breeding, and other products and services associated with the agrarian lifestyle. The Zoning Code provides specific restrictions on the application of herbicides and pesticides, addresses the proper maintenance of livestock corrals, stables and runs, and provides specific guidelines and expectations for agricultural practices within the City. Development standards for street widths, sidewalks, street lighting may, at the City's discretion, vary from typical improvements standards. Septic systems are allowed on parcels of one acre or greater, subject to site conditions and approval of the Contra Costa County Environmental Health Department. Additional land uses include home occupations, small residential care and childcare facilities within a residential dwelling, and other uses and structures incidental to the primary use.

Surrounding Zoning Designations

Surrounding Contra Costa County zoning designations include General Agricultural District (A-2) and Heavy Agricultural District (A-3) to the east, Planned Unit District (P-1) to the west, and A-2 to the south. A conservation area is located to the north and is planned for wetland restoration.

The purpose of the A-2, A-3, and P-1 zoning designations are described below.

General Agricultural District (A-2)

All types of agriculture, including general farming, horticulture, floriculture, nurseries and greenhouses, mushroom rooms, dairying, livestock production, fur farms, poultry raising, animal breeding, aviaries, apiaries, forestry, etc. are permitted in the A-2 district. Other related uses are also permitted, including agricultural accessory structure, detached single-family dwellings and accessory structures, foster homes, and family day care homes.

Heavy Agricultural District (A-3)

All uses designated in the A-2 district are permitted in the A-3 district, with minor residential exceptions. Refuse disposal is allowed with a permit.

Planned Unit District (P-1)

This designation provides for a large-scale integrated development or a general plan special area of concern in order to allow for a cohesive design and flexible regulations. The P-1 district is intended to allow diversification in the relationship of various uses, buildings, structure, lot sizes, and open spaces, while insuring substantial compliance with the General Plan and the intent of the County Code in requiring adequate standards necessary to satisfy the requirements of the public health, safety, and general welfare.

Agricultural Resources

The following describes current farmland and soil productivity classification systems, as well as the extent and quality of the agricultural resources present on the project site.

Farmland Classifications

The United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) uses two systems to determine a soil's agricultural productivity: the Soil Capability Classification and the Storie Index Rating System. The "prime" soil classification of both systems indicates the absence of soil limitation, which if present, would require the application of management techniques (e.g., drainage, leveling, special fertilizing practices) to enhance production. The Farmland Mapping and Monitoring Program, part of the Division of Land

Resource Protection, California Department of Conservation, uses the information from the USDA and the NRCS to create maps illustrating the types of farmland in the area.

Soil Capability Classification

The Soil Capability Classification System takes into consideration soil limitations, the risk of damage when soils are used, and the way in which soils respond to treatment. Capability classes range from Class I soils, which have few limitations for agriculture, to Class VIII soils, which are unsuitable for agriculture. Generally, as the rating of the capability classification system increases, the yields and profits are difficult to obtain. A general description of soil classification, as defined by the NRCS, is provided in Table 4.3-1, Soil Capability Classification.

Table 4.3-1
Soil Capability Classification

Class	Definition
I	Soils have few limitations that restrict their use.
II	Soils have moderate limitations that reduce the choice of plants, or that require special conservation practices.
III	Soils have severe limitations that reduce the choice of plants, require conservation practices, or both.
IV	Soils have very severe limitations that reduce the choice of plants, require very careful management, or both.
V	Soils are not likely to erode but have other limitations; impractical to remove that limit their use largely to pasture or range, woodland, or wildlife habitat.
VI	Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat.
VIII	Soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife habitat, or water supply or to aesthetic purposes.

Source: USDA Soil Conservation Service, Soil Survey of Contra Costa County, 1977.

Storie Index Rating System

The Storie Index Rating system ranks soil characteristics according to their suitability for agriculture from Grade 1 soils (80 to 100 rating), which have few or no limitations for agricultural production to Grade 6 soils (less than 10), which are not suitable for agriculture. Under this system, soils deemed less than prime can function as prime soils when limitations such as poor drainage, slopes, or soil nutrient deficiencies are partially or entirely removed. The six grades, ranges in index rating, and definition of the grades, as defined by the NRCS, are provided below in Table 4.3-2, Storie Index Rating System.

Table 4.3-2
Storie Index Rating System

Grade	Index Rating	Definition
1 – Excellent	80 through 100	Soils are well suited to intensive use for growing irrigated crops that are climatically suited to the region.
2 – Good	60 through 79	Soils are good agricultural soils, although they may not be so desirable as Grade 1 because of moderately coarse, coarse, or gravelly surface soil texture; somewhat less permeable subsoil; lower plant available water holding capacity, fair fertility; less well drained conditions, or slight to moderate flood hazards, all acting separately or in combination.
3 – Fair	40 through 59	Soils are only fairly well suited to general agriculture use and are limited in their use because of moderate slopes; moderate soils depths; less permeable subsoil; fine, moderately fine or gravelly surface soil textures; poor drainage; moderate flood hazards; or fair to poor fertility levels, all acting alone or in combination.
4 – Poor	20 through 39	Soils are poorly suited. They are severely limited in their agricultural potential because of shallow soil depths; less permeable subsoil; steeper slope; or more clayey or gravelly surface soil texture than Grade 3 soils, as well as poor drainage; greater flood hazards; hummocky micro-relief; salinity; or poor fertility levels, all acting alone or in combination.
5 – Very Poor	10 through 19	Soils are very poorly suited for agriculture, are seldom cultivated and are more commonly used for range, pasture, or woodland.
6 – Non-agriculture	Less and 10	Soils are not suited for agriculture at all due to very severe to extreme physical limitations, or because of urbanization.

Source: USDA Soil Conservation Service, Soil Survey of Contra Costa County, 1977.

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the U.S. Department of Agriculture, Soil Conservation Service (USDA-SCS). The intent of the USDA-SCS was to produce agriculture maps based on soil quality and land use across the nation. As part of the nationwide agricultural land use mapping effort, the USDA-SCS developed a series of definitions known as Land Inventory and Monitoring (LIM) criteria. The LIM criteria classified the land's suitability for agricultural production; suitability included both the physical and chemical characteristics of soils and the actual land use. Important Farmland Maps are derived from the USDA-SCS soil survey maps using the LIM criteria.

Since 1980, the State of California has assisted the USDA-SCS with completing its mapping in the state. The FMMP was created within the State Department of Conservation (DOC) to carry on the mapping activity on a continuing basis, and with a greater level of detail. The DOC applied a greater level of detail by modifying the LIM criteria for use in California. The LIM criteria in California utilizes the SCS and Storie Index Rating systems, but also considers

physical conditions such as dependable water supply for agricultural production, soil temperature range, depth of the ground water table, flooding potential, rock fragment content and rooting depth.

Important Farmland Maps for California are compiled using the modified LIM criteria (as described above) and current land use information. The minimum mapping unit is 10 acres unless otherwise specified. Units of land smaller than 10 acres are incorporated into surrounding classifications. The Important Farmland Maps identify seven agriculture-related categories: prime farmland, farmland of statewide importance (statewide farmland), unique farmland, farmland of local importance (local farmland), grazing land, urban and built-up land (urban land), and other land. Each is summarized below, based on *A Guide to Farmland Mapping and Monitoring Program (1998)*, prepared by the Department of Conservation.

Prime Farmland: Prime farmland is land with the best combination of physical and chemical features able to sustain the long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. The land must have been used for the production of irrigated crops at some time during the two update cycles (a cycle is equivalent to 2 years) prior to the mapping date of 1998 (or since 1994).

Statewide Farmland: Farmland of Statewide Importance is land similar to prime farmland, but with minor shortcomings, such as greater slopes or with less ability to hold and store moisture. The land must have been used for the production or irrigated crops at sometime during the two update cycles prior to the mapping date (or since 1994).

Unique Farmland: Unique farmland is land of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards, as found in some climatic zones in California. The land must have been cultivated at some time during the two update cycles prior to the mapping date (or since 1994).

Local Farmland: Farmland of local importance is land of importance to the local agricultural economy, as determined by each county's Board of Supervisors and a local advisory committee. Contra Costa County local farmland includes lands which do not qualify as Prime, Statewide, or Unique designation, but are currently irrigated crops or pasture or non-irrigated crops; lands that would meet the Prime or Statewide designation and have been improved for irrigation, but are now idle; and lands that currently support confined livestock, poultry operations and aquaculture.

Grazing Land: Grazing land is land on which the existing vegetation, whether grown naturally or through management, is suited to the grazing of livestock. The minimum mapping unit for this category is 40 acres.

Urban Land: Urban and built-up land is occupied with structures with a building density of at least one unit to one-half acre. Uses may include but are not limited to, residential, industrial, commercial, construction, institutional, public administration purposes, railroad yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures, and other development purposes. Highways, railroads, and other transportation facilities are mapped as part of this unit, if they are part of a surrounding urban area.

Other Land: Other land is land that is not included in any other mapping categories. The following uses are generally included: rural development, brush timber, government land, strip mines, borrow pits, and a variety of other rural land uses.

Project Site Characteristics

According to the Contra Costa County Soil Survey, the project site is made up of the Dehli sand (DaC), Marcuse clay (Mb), Piper loamy sand (Pe), and Sycamore silty clay loam (So) soil series. The California Department of Conservation Farmland Mapping and Monitoring Program *Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, Contra Costa County*,[4] lists Sycamore silty clay loam (So) as being a soil that meets the criteria for Prime Farmland, and Dehli sand (DaC) and Piper loamy sand (Pe) as being soils that meet the criteria for Farmland of Statewide Importance. Table 4.3-3 lists the characteristics of the Dehli sand (DaC), Marcuse clay (Mb), Piper loamy sand (Pe), and Sycamore silty clay loam (So) soil types as determined in the Contra Costa County Soil Survey (1973).

Table 4.3-3
On-Site Soil Capability Classification and Storie Index Rating

Soil Map Symbol and Name	Soil Capability Classification	Storie Index Rating	Grade
Dehli sand (DaC)	IIIs-4 - irrigated	49	3
Marcuse clay (Mb)	IVw-6 - irrigated	16	5
Piper loamy sand (Pe)	IVw-9 - pasture	36	4
Sycamore silty clay loam (So)	I	81	1

Source: USDA Soil Conservation Service, Soil Survey of Contra Costa County, 1973.

California Land Conservation Act – Williamson Act

The California Land Conservation Act, better know as the Williamson Act, has been the State's premier agricultural land protection program since its enactment in 1965. The California legislature passed the Williamson Act in 1965 to preserve agricultural and open space lands by

discouraging premature and unnecessary conversion to urban uses. The Act creates an arrangement whereby private landowners contract with counties and cities to voluntarily restrict land to agricultural and open-space uses. The vehicle for these agreements is a rolling term 10-year contract (i.e., unless either party files a "notice of nonrenewal," the contract is automatically renewed annually for an additional year). In return, restricted parcels are assessed for property tax purposes at a rate consistent with their annual use, rather than potential market value. The Gilbert Property is not in a Williamson Act contract.

REGULATORY CONTEXT

Local Regulations

The Urban Limit Line

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

City of Oakley General Plan

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

General Land Use

Goal 2.1 Guide development in a manner that creates a balanced and desirable community that maintains and enhances the character and best qualities of Oakley.

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

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

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

Policy 2.1.8 Avoid development that results in land use incompatibility. Specifically, avoid locating sensitive uses (residential) adjacent to existing potentially objectionable uses and avoid locating potentially objectionable uses adjacent to sensitive uses.

Residential

Goal 2.2 Create new residential developments and reinforce existing neighborhoods to reflect the high quality of life in Oakley.

Policy 2.2.1 Recognize Oakley's predominantly single family residential character and distinctive qualities in planning and development decisions.

Policy 2.2.2 Require that new development be generally consistent with the scale, appearance, and small town character of Oakley.

Policy 2.2.3 Protect existing residential areas from intrusion of incompatible land uses and disruptive traffic to the extent reasonably possible.

Policy 2.2.4 Promote, in areas where different land uses abut one another, land use compatibility by utilizing buffering techniques such as landscaping, setbacks, screening and, where necessary, construction of sound walls.

Policy 2.2.5 Promote the transition from higher density centers to lower densities at City boundaries. Where high density residential is directly adjacent to low density residential or agricultural uses, buffers should be provided.

Policy 2.2.7 Consider modified development standards for large-lot development that reflects the rural nature of the development. This may include reducing or eliminating the need for traditional sidewalks, street lighting or other subdivision improvements, if the absence of such improvements will not result in conflicts with adjacent land uses and treats to the public health, safety and welfare.

Policy 2.2.8 Preserve the limited areas planned for multi-family residential development and discourage General Plan amendments and rezoning of such areas or other uses.

Policy 2.2.9 Consider the cumulative effects of development on community facilities and services, such as transportation and schools, throughout the planning process.

Policy 2.2.13 Restrict or require increased setbacks for residential development proposed and adjacent to industrially or agriculturally designated or developed land to minimize conflicts.

Trails

Goal 2.7 Provide a system of multi-use trails that connect residential districts, employment centers and natural areas, throughout Oakley, including the Delta.

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

Agriculture

Goal 6.1 Allow agriculture to continue as a viable use of land that reflects the community's origins and minimizes conflicts between agricultural and urban uses.

Policy 6.1.1 Participate in regional programs that promote the long-term viability of agricultural operations within the City.

Policy 6.1.2 Reduce the negative impacts resulting from urban uses and neighboring agricultural uses in close proximity.

Policy 6.1.4 Incorporate parks, open space and trails between urban and agricultural uses to provide buffer and transition between uses.

Implementation Programs

6.1.B Encourage consolidated development; with appropriate land use buffers of parks, open space and trails, for proposed major subdivisions adjacent to prime agricultural lands.

6.1.C Modify the land use classifications and allowed use provisions and development standards to reflect current agricultural uses and land use compatibility.

6.1.D Require adequate setbacks for any non-agricultural structures adjacent to cultivated agriculture.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Land Use

Based on CEQA Guidelines, a land use impact may be considered significant if any of the following conditions, or potential thereof, would result if the proposed project's implementation would do any of the following:

- Result in substantial potential for conflict as a result of incompatible land uses;
- Result in land use inconsistent with existing city plans and policies. The land use impact analysis considers the proposed project's consistency with several standards, including the existing land uses, the general plan, and the zoning ordinance;
- Disrupt or divide the physical arrangement of an established community;
- Conflict with any applicable habitat conservation plan or natural community conservation plan; or,
- Conflict with any applicable land use plan, policy, 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.

Agricultural Resources

An agricultural impact may be considered to be significant if implementation of the proposed project would do any of the following:

- Result in the conversion of prime farmland, unique farmland, or farmland of statewide importance to nonagricultural use or impairs the agricultural productivity of prime agricultural land;
- Adversely affect agricultural viability by placing incompatible, or potentially incompatible land uses near active agricultural areas;
- Adversely affect agricultural production; or
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.

Method of Analysis

Land Use

The land use impact evaluation qualitatively compares the uses proposed for the project to the existing and other proposed uses in the vicinity of the project site in order to determine compatibility between existing and proposed uses. The determination of compatibility is based on the anticipated environmental effects of proposed uses and the sensitivity of adjacent uses to those effects. The evaluation also assesses the consistency of the proposed project with the goals and policies of the *Oakley General Plan.*

Agricultural Resources

This section utilized the following resources to assess the impacts of the project: the *City of Oakley General Plan EIR*, the *Department of Conservation: Contra Costa County Important Farmland, 1973*, the *Soil Survey for Contra Costa County*, and the *Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, Contra Costa County*. This section assesses the impacts of the project on agricultural resources by applying the standards of significance listed above to the proposed project. If the analysis determines that the proposed project would have significant impacts on agricultural resources, mitigation measures, if available, are recommended which would reduce impacts.

Project-Specific Impacts and Mitigation Measures – Land Use

The following discussion of impacts is based on the implementation of the proposed project.

4.3-1 Compatibility with existing or planned surrounding land uses.

The determination of compatibility of land uses typically relies on a general discussion of the types of adjacent uses to a proposed project and whether any sensitive receptors exist either on the adjacent properties or associated with the proposed project. Incompatibilities typically exist when uses such as residences, parks, churches, and schools are located adjacent to more disruptive uses such as heavy industrial, major transportation corridors, and regional commercial centers where noise and traffic levels may be high. The identification of incompatible uses occurs if one land use is anticipated to be disruptive of the existing or planned use of an adjacent property.

The proposed land plan for the Gilbert Property project site includes residential development, trails, a park, levees, a storm water detention pond, as well as the infrastructure improvements necessary to accommodate the new development. The single-family areas of the proposed project have densities that range from 3.1 to 4.6 du/ac. Although these dwelling unit densities are greater than the surrounding rural residential uses, the proposed project density is consistent with the densities specified in the General Plan, and is also consistent with surrounding land uses, including Cypress Grove, a residential subdivision, to the west, and another residential subdivision to the southwest of the project site.

Potential land use conflicts associated with the project could result from the agricultural-residential interface with adjacent properties and the proposed project's close proximity to the Contra Costa Canal.

The Contra Costa Canal is located at the northern boundary of the project site. Impacts related to potential conflicts between residential uses and the Canal are discussed in Chapter 4.7, Hazards, of this Draft EIR.

Existing agricultural operations adjacent to the site are limited to cattle grazing to the south. The development of some of the land uses proposed for the site that are either adjacent to or in close proximity to cattle grazing activities could have land use conflicts between uses.

For instance, odors and flies from cattle grazing activities could be a nuisance to potential residents in close proximity to the cattle. The use of pesticides or herbicides to control weeds and pests on the grazing land could cause health problems for potential residents on the proposed project site. The cattle grazing operations could have impacts associated with nuisances and hazards, such as pesticide, herbicide and fungicide use on the agricultural properties adjacent to residential areas, as well as odors, dust, and slow moving vehicles on area roads.

In addition, impacts to agricultural operations could result from agricultural-residential land use conflicts, such as trespassing onto adjacent grazing land by project residents. Trespassing could have potential impacts, including illegal trespass, destruction of private property, vandalism, and personal injury liability to the trespassers.

However, a 120-foot right-of-way that is located between the project site and farming operations to the south of Cypress Road would help to prevent land use conflicts. The sound wall proposed contiguous to the southern boundary of the project site would also protect residences and farming operations from land use conflicts. The Contra Costa Canal on the northern boundary of the project site, and the existing and proposed fences along the canal would serve as buffers between agricultural operations to the north and east and proposed residential uses to the south and west. The potential land use conflicts would thus not impact the continuation of the existing agricultural activities adjacent to the project site and would not result in adverse affects to the potential residential uses on the project site. In addition, the City of Oakley General Plan 2020 EIR concluded that at buildout (which includes the development of the proposed project site to urban uses) the impacts associated with potentially conflicting land uses would be less-than-significant. Therefore, consistent with the Oakley General Plan 2020 EIR, the proposed project would result in a ***less-than-significant*** impact from the agricultural-residential interface between existing and proposed uses in the project area.

Mitigation Measure(s)
None required.

4.3-2 Consistency with adopted General Plan designations and policies.

The City of Oakley General Plan 2020 Land Use Diagram (Figure 2-2 of the General Plan) designates the following land uses for the Gilbert Property project site:

Single Family Low (0.8-2.3 du/ac)
Single Family Medium (2.3-3.8 du/ac)
Single Family High (3.8-5.5 du/ac)
Multi-Family Low (9.6-16.7 du/ac)

Commercial (1.0 maximum floor area ratio)

The proposed project would include single-family residential construction, as well as trails, a park, levees, a storm water detention pond, and the infrastructure improvements necessary to accommodate the new development. The Gilbert Property, as a component of the 303-acre Dutch Slough Planning Area is consistent with the 1990 Contra Costa County General Plan Mixed Use (M-8) land use designation as well as being consistent with the Oakley General Plan as to urbanizing the site as a residential corridor with supporting commercial and community uses. The proposed project would also be consistent with the land uses included in the Dutch Slough Properties Development Agreement and is consistent with the Framework Study for the proposed project area. Furthermore, because the General Plan requires flexibility in the interpretation of the Land Use Diagram, the proposed project would not require a General Plan Amendment.

The City's policy documents have provided the primary planning direction for the planning area. The proposed project would be consistent with *Policy 2.2.1* of the General Plan, because the proposed project would maintain the single-family residential character and distinctive qualities in planning and development decisions by keeping with the scale, appearance, and small town character of Oakley, as required in Design Review. In addition, the proposed project is consistent with *Policy 2.2.8* of the General Plan because the project does not require a General Plan amendment, thereby preserving the limited areas planned for multi-family residential development.

Although the proposed project abuts agricultural land uses, the project does incorporate open space and trails between urban and agricultural uses to provide buffers and transitions between uses (*Policy 6.1.4*). The proposed project is also consistent with *Policy 2.2.4* of the General Plan because, in areas where different land uses abut, the project would promote land use compatibility by utilizing buffering techniques such as landscaping, setbacks, screening and, where necessary, construction of sound walls.

Adequate access and consistent design with a community theme are consistent components proposed for the project. The project also provides a system of multi-use trails that connect the residential neighborhoods, employment centers and natural areas, throughout Oakley, including the Delta (*Goal 2.7*).

In terms of the goals and policies in the Oakley General Plan, the project is consistent; therefore, a ***less-than-significant*** impact would result.

Mitigation Measure(s)
None required.

4.3-3 Impacts to Prime Farmland or Farmland of Statewide Importance, Williamson Act contracts and conversion of farmland.

Though the proposed project area is currently zoned for agricultural uses, the City of Oakley General Plan designates the proposed project area for residential uses. The

conversion of the proposed project area to residential land uses would be consistent with the General Plan land use designation for the proposed project site. In addition the project area is not under Williamson Act Contract, and the proposed project area is not zoned for inclusion within the Williamson Act.

The proposed project site does not include any Prime Farmland or Farmland of Statewide importance, nor is the proposed project under Williamson Act Contracts. Therefore, the proposed project would have a ***less-than-significant*** impact in regard to the loss or conversion of prime farmlands.

Mitigation Measure(s)
None required.

4.3-4 Consistency with existing zoning.

The proposed project site is currently zoned heavy Agriculture (A-3). The current zoning on the project site is not consistent with the urban development proposed for the Gilbert Property project. The proposed project would change the zoning to Planned Unit District (P-1). However, the rezone of the project site from A-3 to P-1, with the uses proposed in the project, would make the project site consistent with the recently adopted Oakley 2020 General Plan land use designations. The project site has been designated for urban uses and densities by the General Plan. Although the surrounding uses are primarily agricultural, the adjacent properties are also designated for development. The proposed P-1 zoning, which allows for residential, commercial, recreational, and public uses, would be consistent with the City's goals for the Cypress Corridor Planning Area. Although the proposed project does require a rezone, the project is consistent with the City's anticipated use of the site; therefore, impacts resulting from a rezone would be considered ***less-than-significant.***

Mitigation Measure(s)
None required.

Cumulative Impacts – Land Use

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.3-5 Increases in the intensity of land uses in the region due to the proposed project and all other projects in the Oakley area.

The proposed Gilbert Property project, along with all known projects in the City of Oakley would change the intensity of land uses in the City's Planning Area. However, the 2020 General Plan designates this area for urban development. Furthermore, the 2020 General Plan and General Plan EIR anticipated such growth. The proposed project site was designated M-8 for urban land uses prior to the City's annexation of the proposed project area. Subsequently, the City's General Plan designated the proposed project area

for urban development, and the Development Agreement for the Cypress Corridor anticipated that the proposed project area be developed for urban uses. In addition, all development proposed and constructed within the City are reviewed for consistency with citywide land use controls and development standards during the course of the project review and approval process. Given the land use controls and development standards presently in use within the City of Oakley, and the consistency of the project with the land uses and densities in the General Plan, cumulative land use impacts would be minimized to a level that is considered to be ***less-than-significant***.

Mitigation Measure(s)
None required.

Project-Specific Impacts and Mitigation Measures – Agricultural Resources

The following discussion of impacts is based on the implementation of the proposed project. It should be noted that land use incompatibilities between proposed uses and adjacent agricultural uses are addressed in Impact 4.3-1 above.

4.3-6 Conversion of Prime Farmland to urban uses.

The Gilbert Property project site has historically been used for agricultural purposes and thus has an agricultural character, with many non-native grasses and forbs and generally disturbed land. Although the site is zoned Heavy Agriculture (A-3), and the current agriculture/grazing practices are generally consistent with the zoning, the intended urban uses of the site are designated in the Oakley General Plan Land Use Element. The proposed project would develop suburban uses and densities consistent with those anticipated by the General Plan.

The project site is comprised of approximately ±120 acres of agricultural land, which currently contains vacant fallow agricultural lands and pasture lands. The proposed project includes the development of 510 residential units which would result in the conversion of the parcel to an suburban site.

According to the Contra Costa County Soil Survey, the project site is made up of the Dehli sand (DaC), Marcuse clay (Mb), Piper loamy sand (Pe), and Sycamore silty clay loam (So) soil series. According the California Department of Conservation Farmland Mapping and Monitoring Program *Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, Contra Costa County* Sycamore silty clay loam (So) is listed as a soil that meets the criteria for Prime Farmland, and Dehli sand (DaC) and Piper loamy sand (Pe) are listed as soils that meet the criteria for Farmland of Statewide Importance.

The certified Oakley 2020 General Plan EIR states that the General Plan accommodates agriculture while providing the balanced needs of the City (General Plan DEIR, p.3-77). The General Plan states that the City of Oakley through its General Plan is primarily completing the urbanization of the area as originally intended by Contra Costa County.

Sixty-five (65) percent of the County is protected as undeveloped. The Oakley Planning Area falls in the thirty-five (35) percent that is designated for development.

In addition, agricultural resources are currently fragmented and commercial agriculture is substantially compromised. The Oakley 2020 General Plan EIR found that the incremental environmental effect of the development of the City consistent with the General Plan would have a less-than-significant impact on agriculture, which includes the project site.

The proposed project would be consistent with the Mixed Use (M-8) land use designation for the proposed project site included in the 1990 Contra Costa County General Plan. In 1997, the County approved statutory development agreements providing vested rights to develop these properties, consistent with the County General Plan and EIR. In 1997, the County for CEQA purposes relied upon the General Plan EIR and approved development agreements providing vested rights to develop the M-8 area.

In 1999, the City of Oakley incorporated. This incorporation area included the M-8 area of the County. In 2000, the City of Oakley embarked on a process to prepare and process a new General Plan to specifically service the needs of the City. The General Plan included the 120-acre Gilbert Property with residential and commercial land use designations (see Figure 4.3-2, Existing Land Use Designations).

Moreover, the Gilbert Property is subject to a development agreement that vests the property with urban land use designations. The development agreement approvals have already undergone CEQA review and, at that time, a negative declaration was issued finding that agricultural land conversion to urban use was a less-than-significant impact. At that stage in the CEQA process, for the development agreement approval, agricultural impacts associated with the proposed project were addressed and the City approved the development agreement.

The implementation of the General Plan goals and policies regarding agriculture land would reduce the impact of converting the agriculture lands on the project site to urban use as designated by the Oakley 2020 General Plan. Therefore, in accordance with the findings of the certified Oakley 2020 General Plan EIR and the Gilbert Property Development Agreements Initial Study/Negative Declaration, the loss of Prime Farmland and Farmland of Statewide Importance caused by the project would be considered a ***less-than-significant*** impact because the project would be required to implement General Plan policies and programs that are designed to preserve the agricultural heritage of Oakley.

Mitigation Measure(s)
None required.

Cumulative Impacts – Agricultural Resources

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.3-7 Cumulative loss of agricultural land.

The Contra Costa County General Plan incorporates an Urban Limit Line (ULL) and has established a minimum 40-acre lot size for prime agricultural lands outside the Urban Limit Line. The entire Oakley Planning Area is located inside the County ULL and was, therefore, determined generally appropriate for urban development.

Although the General Plan Policies and Programs do preserve a buffer between urban development and agricultural land, the Oakley 2020 General Plan is primarily completing the urbanization of this area as originally intended by the County in the 1990 Contra Costa County General Plan, which designated the proposed project site for Mixed Use land uses. In addition, the proposed project area is within the area is within the Cypress Corridor Special Planning Area. The Cypress Corridor Special Planning Area is envisioned as a primarily residential area with supporting commercial and public uses (Oakley 2020 General Plan, p. 2-23). The General Plan describes Special Planning Areas as distinct geographic areas within and surrounding the City of Oakley that merit special consideration. Special Planning Areas are established to identify opportunities and constraints unique to each planning area and to provide further direction regarding the City's expectations for development in these areas. The Gilbert Property project occupies a portion of the Cypress Corridor Special Planning Area

As mentioned above, 65 percent of the County is protected as undeveloped. The Oakley Planning Area falls in the 35 percent that is designated for development. Although agricultural resources are currently fragmented and commercial agriculture is substantially compromised, the Oakley 2020 General Plan EIR found that the General Plan accommodates agriculture while providing for the balanced needs of the City (General Plan DEIR, p. 3-77).

Therefore, the proposed project and cumulative development within the ULL resulting from the buildout of the General Plan would not result in a significant regional and/or statewide loss to Prime Farmland. The incremental environmental effect of the General Plan on agriculture is determined to be ***less-than-significant*** upon implementation of the Policies and Programs of the Oakley 2020 General Plan (Oakley 2020 General Plan EIR, pp. 3-75, 77).

Mitigation Measure(s)
None required.

Endnotes

[1] City of Oakley, *City of Oakley General Plan*, 2002.
[2] City of Oakley, *City of Oakley Land Use Element and EIR*, 2002.
[3] USDA Soil Conservation Service. *Contra Costa County Soil Survey.* 1973.
[4] The California Department of Conservation Farmland Mapping and Monitoring Program *Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, Contra Costa County*, 2004.

4.4 TRAFFIC AND CIRCULATION

4.4 TRAFFIC AND CIRCULATION

Introduction

This section describes the existing and future conditions for transportation and circulation both with and without the proposed project. The analysis provides information on local roadway networks, levels of service, and potential effects on the local transportation system associated with traffic generated by the project. In addition, this section provides an assessment of the site access and internal site circulation. The information in this section is based upon a transportation impact analysis for the Gilbert Property[1], conducted by Abrams Associates Traffic Engineering (See Appendix D of this Draft EIR).

Environmental Setting

The Gilbert Property project site is a 120-acre site located north of Cypress Road within the City of Oakley. The Gilbert Property is proposed for residential development consisting of 510 single-family residential units. The project is proposing to include four different neighborhoods with densities ranging from approximately 3.1 to 6.5 dwelling units per acre.

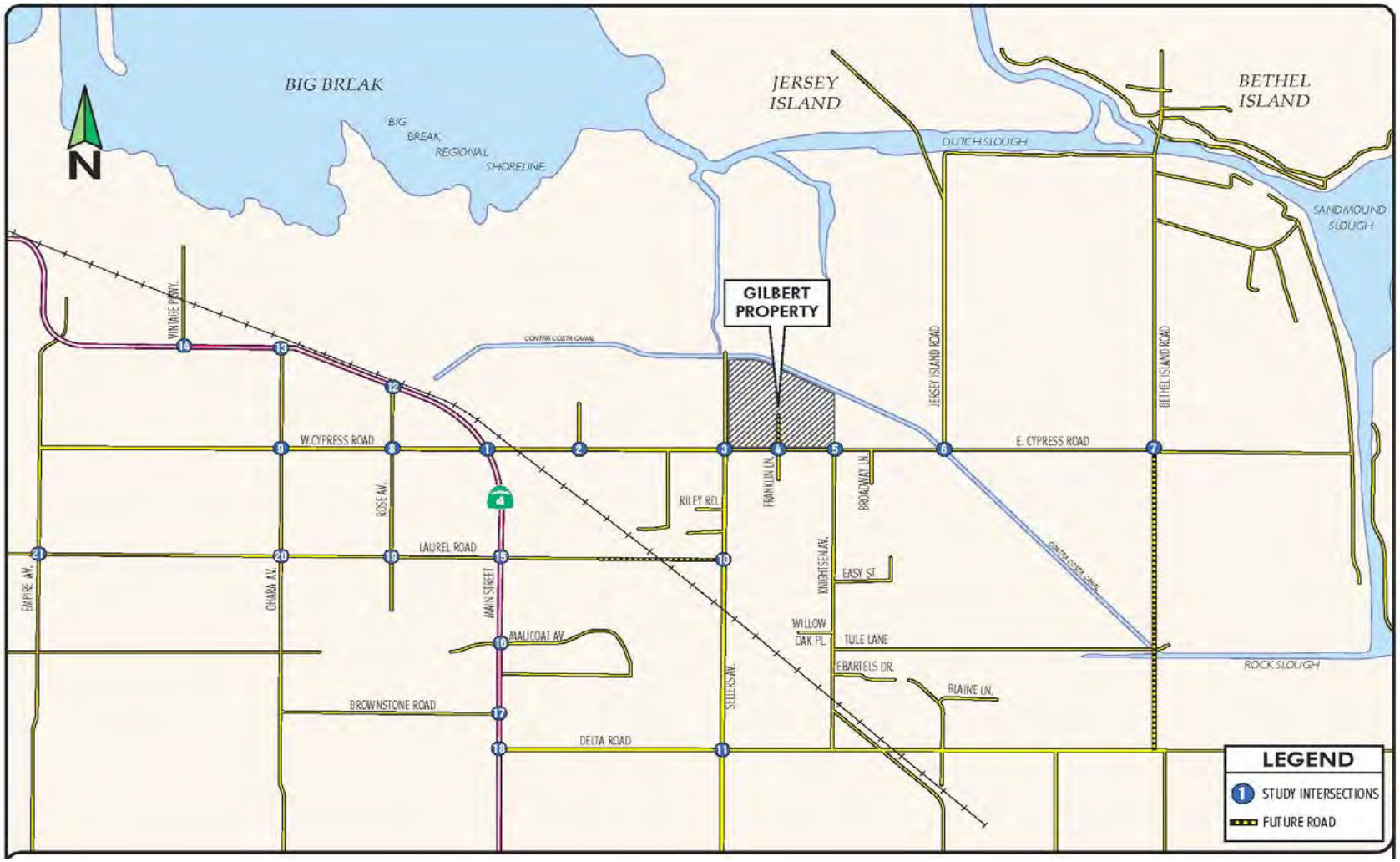
Implementation of the project would increase vehicular traffic in the area, which could adversely affect traffic operations, particularly at critical intersections in the area. Figure 4.4-1 shows the project location and the study intersections that were included in the analysis. Figure 4.4-2 shows the project site plan. A discussion of the existing traffic and transportation conditions in the project study area is provided below.

Existing Conditions

Land Use

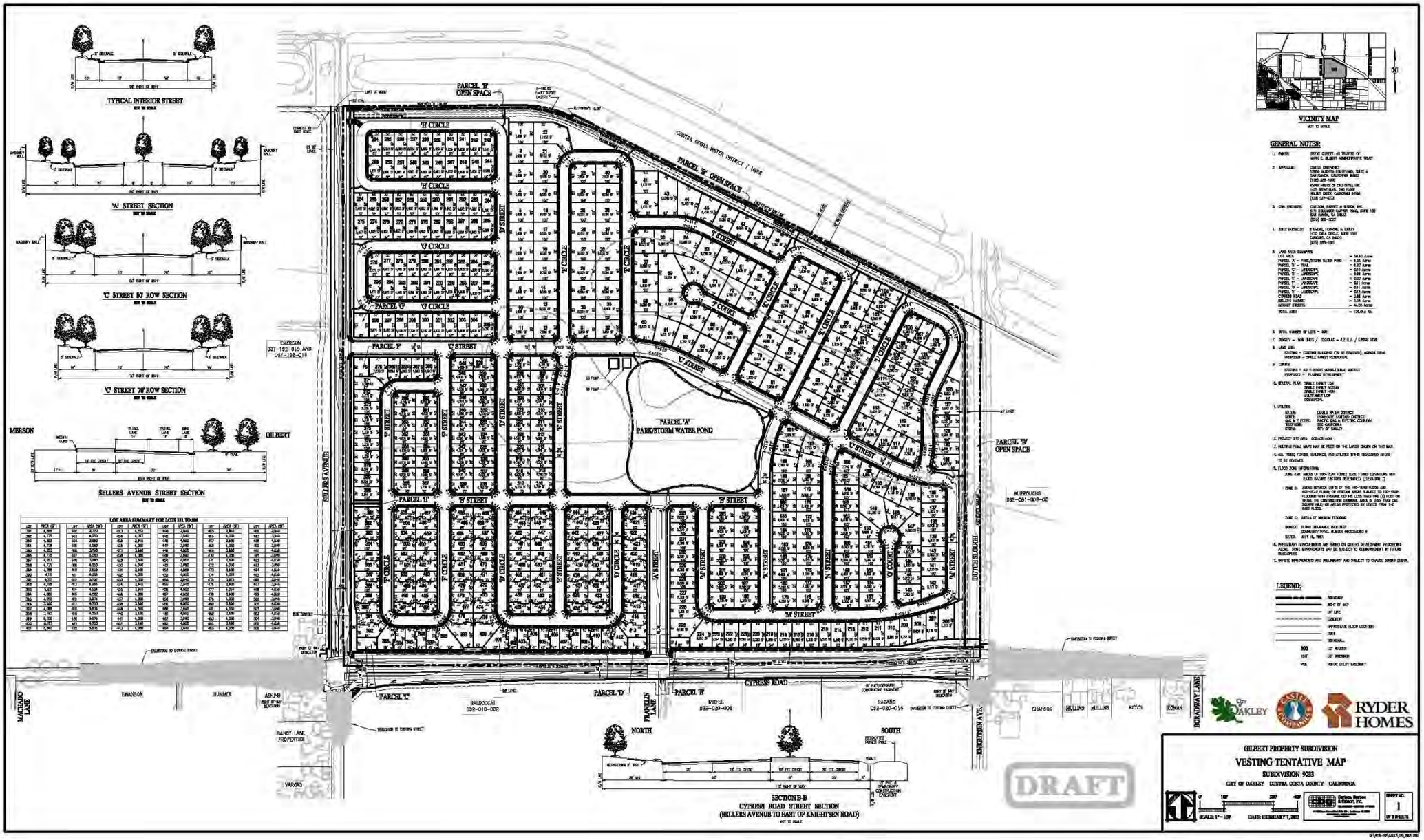
The project site has historically been used for agricultural purposes and is located between the vacant Emerson site to the west and Burroughs site to the east. The Emerson and Burroughs sites are also part of the Cypress Corridor and development of these sites is anticipated in the future. Other nearby land uses include Cypress Grove project, Delta Vista Middle School to the west, and Iron House Elementary School, Cypress Road to the south, and the Contra Costa Water District Canal (CCWD/USBR Canal) to the north, which separates the project site from the open space acreage to the north. A 55-acre portion of land immediately to the north of the CCWD/USBR canal and the project site at the end of Sellers Avenue is held in escrow for future conveyance to the City of Oakley as a community park (See page 3-2 of the Project Description for more information).

Figure 4.4-1
Project Location and Study Intersections



Source: Abrams Associates Inc., February 2007

Figure 4.4-2
Project Tentative Map



Roadways

Abrams Associates conducted an extensive analysis of the existing roadways in the vicinity of the project site. The following are descriptions of the primary roadways studied: State Route 4 (SR-4)/Main Street, Cypress Road, Sellers Avenue, Knightsen Avenue, Laurel Road, and Delta Road.

State Route 4/Main Street is a two-lane major arterial that carries approximately 25,500 vehicles per day. Main Street is currently the only major north-south transportation corridor in the vicinity of the project. The Corridor provides direct access from Oakley to the greater Bay Area, as well as providing a link between Contra Costa County and San Joaquin County to the east. Mixed residential, commercial, and agricultural uses characterize the lands along both sides of SR-4 between Rose Avenue and Laurel Road. Maximum speeds posted on SR-4 in the project vicinity are: 35 miles per hour (mph) west of Rose Avenue, 45 mph between Rose and Bernard Road, and 40 mph south of Bernard Road.

Cypress Road is an east-west, two-lane residential arterial west of SR-4, and a two-to-four lane arterial east of SR-4 that is referred to as East Cypress Road. The posted speed limit on Cypress Road is 50 mph east of SR-4 in the vicinity of the project site.

Sellers Avenue is a north-south, two-lane rural road that currently is bordered by residential lots south of Cypress Road, and by farmlands north of Cypress Road.

Knightsen Avenue is a north-south, two-lane rural road that extends north from Eden Plains Road and terminates at East Cypress Road.

Laurel Road is an east-west two-lane residential collector street with residential and vacant land on both sides. The posted speed on Laurel Road is 45 mph. Laurel Road is located approximately one-half mile south of the project site, parallel to Cypress Road, and is planned to be extended to Sellers Avenue.

Delta Road is an east-west, two-lane rural road that extends east from Main Street and connects to the north end of the Byron Highway.

Traffic Operations

During the AM peak hour, the primary direction of traffic in the vicinity of the project is westbound as area residents use SR-4 and other roadways to travel to employment in the Bay Area. During the PM peak hour, the primary direction of traffic is eastbound as residents return home. Main Street is currently used as the primary route of travel to the nearest freeway (SR-4). Main Street is designated as a state highway in the study area and serves as a high truck volume (about 10 percent of vehicles are multi-axle trucks) that contributes to the congestion along the corridor. The crossing located west of the proposed project along East Cypress Road and is currently at-grade and controlled by gates on East Cypress Road. Based on current observations, when trains cross East Cypress Road the eastbound East Cypress Road traffic can back to Main

Street and interfere with the regular operations at the East Cypress Road/Main Street intersection, mainly during the PM peak hour. Although East Cypress Road is being improved in the area there are no plans to grade-separate the railroad crossing.

Intersection Operations

Abrams Associates conducted new turning movement counts for nine of the intersections in April 2005, where current data was not available. Information for the remaining intersections were obtained from counts conducted in March and October of 2004 for the East Cypress Road Corridor Specific Plan Traffic Study[2]. The existing peak hour traffic volumes are shown on Figure 4.4-3 and the existing lane configurations are shown in Figure 4.4-4. Each project study intersection was analyzed according to the methodology and standards set forth in the "Impacts and Mitigations" section.

Existing intersection operations were evaluated for the weekday AM and PM peak hours at the study intersections. Detailed intersection LOS calculation worksheets are provided in Appendix D. All signalized study intersections currently operate at acceptable levels-of-service (LOS), which is LOS D or better according to City and County standards. However, two unsignalized intersections have side street approaches operating at LOS F (See Table 4.4-1 for description of LOS levels).

The stop-controlled T-intersections of Main Street with Rose Avenue and with Delta Road, though operating at LOS A overall, both operate at LOS F on the stop-controlled side street movements during the peak hours. The motorists on unsignalized side streets such as these often have substantial delays before they can enter the stream of traffic on Main Street.

The Main Street/Rose Avenue intersection currently does not meet any of the Caltrans' traffic signal warrants. Eleven possible tests (called "warrants") are set forth by Caltrans for determining whether a traffic signal should be considered for installation. The tests consider criteria such as traffic volumes and delay, pedestrian volumes, presence of school children, and accident history. Usually, two or more warrants must be met before a signal is installed. Normally when the Peak Hour Volume Warrant (Warrant #11) is met at an intersection that is a strong indication that a more detailed signal warrant analysis covering all possible warrants is appropriate.

However, the intersection of Main Street with Delta Road already meets the peak hour volume warrant under existing conditions. A review of the queue lengths for the southbound left-turn movement on Main Street indicates that the current traffic controls do not cause problems to the mainline operations. Observations at this intersection indicate that the current operations are acceptable with stop control on the Delta Road approach because the majority of traffic on the side street turns right onto Main Street. It should be noted that the majority of this side street traffic appears to be generated by commuters attempting to bypass congestion on SR-4 by using side streets such as the Byron Highway and Delta Road. Table 4.4-2 summarizes the existing conditions at the project study intersections.

Table 4.4-1: Level of Service for Signalized Intersections

Level-of-Service		Description
LOS "A"		Free flow. If signalized, conditions are such that no vehicle phase is fully utilized and no vehicle waits through more than one red indication. Very slight or no delay.
V/C Range	0.00 - 0.60	
Average Stop Delay (seconds)	0.0 - 10.0	
LOS "B"		Stable flow. If signalized, an occasional approach phase is fully utilized; vehicle platoons are formed. Slight delay.
V/C Range	0.61 - 0.70	
Average Stop Delay (seconds)	10.1 - 20.0	
LOS "C"		Stable flow or operation. If signalized, drivers occasionally may have to wait through more than one red indication. Acceptable delay.
V/C Range	0.71 - 0.80	
Average Stop Delay (seconds)	20.1 – 35.0	
LOS "D"		Approaching unstable flow or operation; queues develop but quickly clear. Tolerable delay.
V/C Range	0.81 - 0.90	
Average Stop Delay (seconds)	35.1 - 55.0	
LOS "E"		Unstable flow or operation; the intersection has reached ultimate capacity; Congestion and intolerable delay.
V/C Range	0.91 - 1.00	
Average Stop Delay (seconds)	55.1 - 80.0	
LOS "F"		Forced flow or operation. Intersection operates below capacity. Jammed.
V/C Range[1]		
- Measured	1.00 or less	
- Forecast	1.01 or more	
Average Stop Delay (seconds)	> 80	

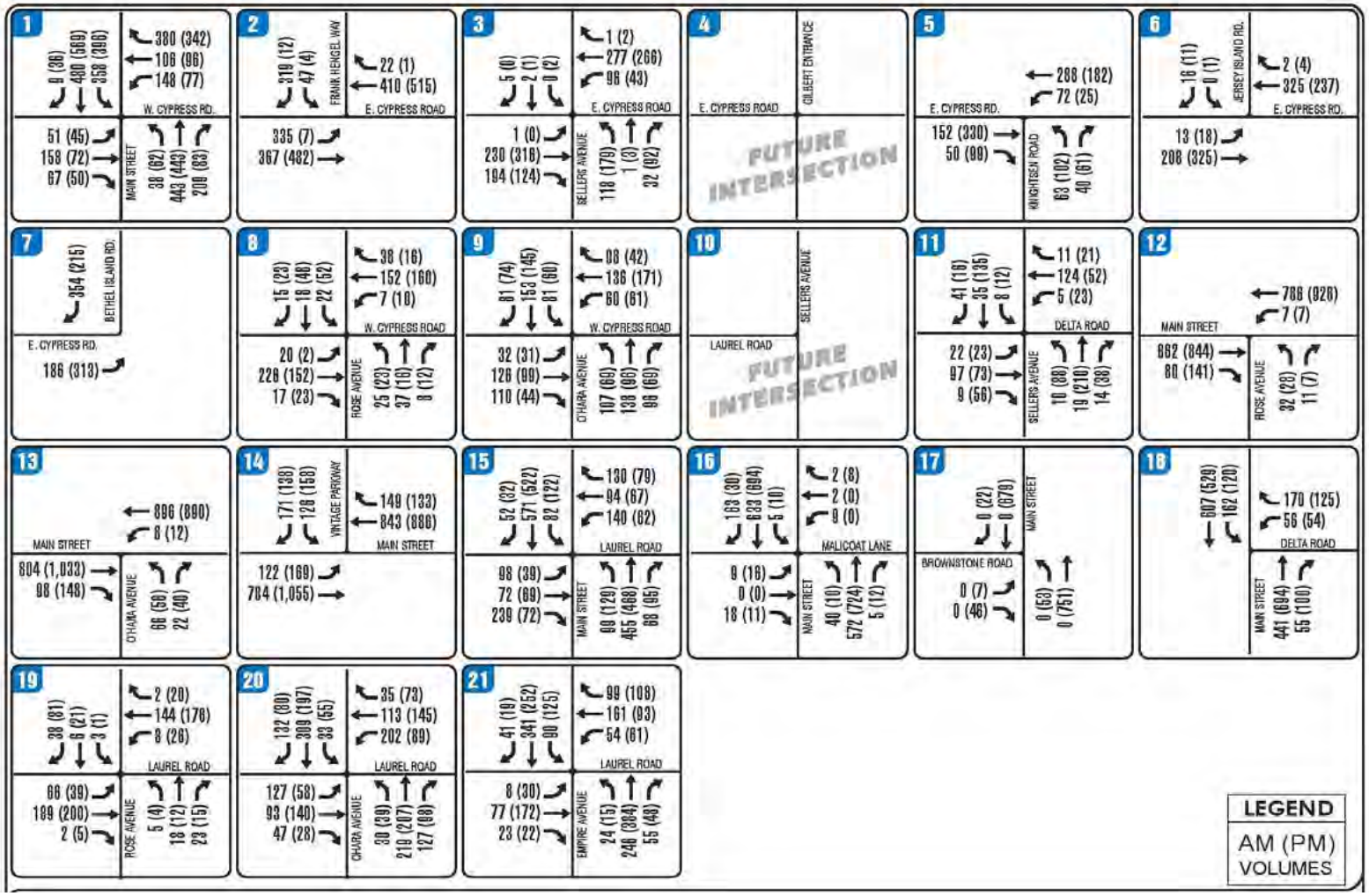
The **2000 HIGHWAY CAPCITY MANUAL** methodology for analyzing signalized intersections measures the performance by the control delay per vehicle in seconds. The **CRITICAL MOVEMENT ANALYSIS METHODOLOGY**[2], required by the CCTA is described in Transportation Research Board's Circular 212, defines Level of Service (LOS) for signalized intersections in terms of the ratio of critical movement traffic volumes to an estimate of the maximum capacity for critical volume at an intersection. Critical movements at an intersection are calculated by determining the maximum traffic volumes for conflicting traffic movements (i.e., left-turns plus opposing through traffic) per single stream of traffic (by lane). For the Critical Movement Methodology the **LOS** for intersections is determined by the ratio of critical movement volume to critical movement capacity (volume-to-capacity ratio = V/C) for the entire intersection. Six categories of LOS are defined, ranging from **LOS "A"** with minor delay to **LOS "F"** with delays averaging more than 40 seconds during the peak hour.

[1] While forecast demands can exceed maximum capacity, actual measured volumes theoretically cannot. Since traffic inefficiencies arise at capacity demand conditions, the calculated V/C ratios for LOS "F" conditions can be substantially below a V/C of 1.00.

[2] Source: "Planning Level Methodology - Signalized Intersections" *Circular 212*, Transportation Research Board, Washington D.C., January, 1980

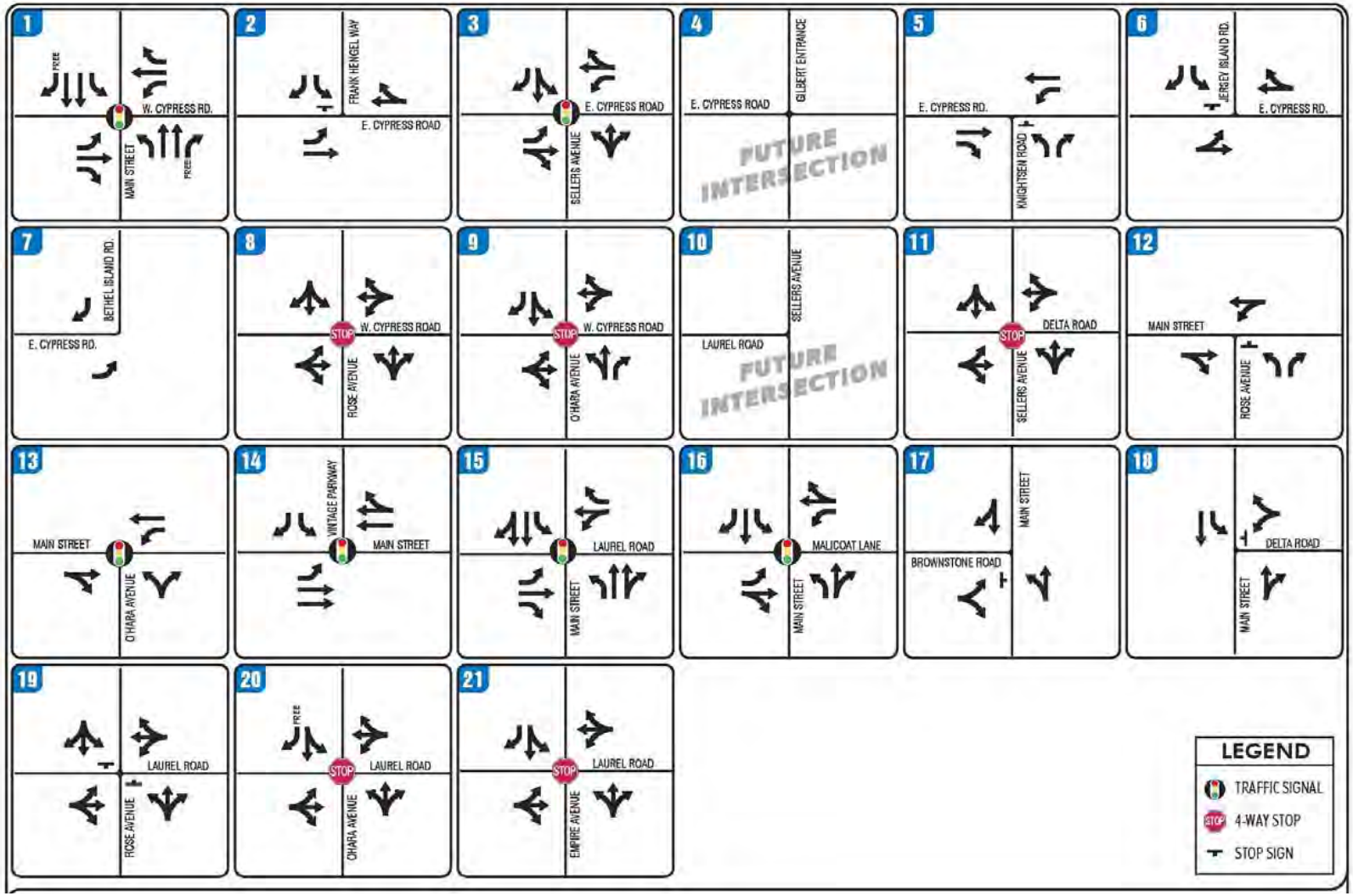
Source: Abrams Associates Inc., February 2007

Figure 4.4-3
AM(PM) Existing Peak Hour Traffic Volumes



Source: Abrams Associates Inc., February 2007

Figure 4.4-4
Existing Lane Configurations



Source: Abrams Associates Inc., February 2007

Table 4.4-2
Existing Intersection Operations

	INTERSECTION	CONTROL	PEAK HOUR	EXISTING	
				MEASURE	LOS
1	Main Street (SR-4) and Cypress Road	Traffic Signal	AM	v/c = 0.54	A
			PM	v/c = 0.47	A
2	East Cypress Road/Frank Hengel Way	Stop Sign	AM	23.1 sec	C
			PM	13.4 sec	B
3	East Cypress Road/Sellers Avenue	Traffic Signal	AM	v/c = 0.41	A
			PM	v/c = 0.46	A
4	East Cypress Road/Main Project Entrance	Future	AM	N/A	N/A
			PM	N/A	N/A
5	East Cypress Road/Knightsen Avenue	Stop Sign	AM	12.3 sec	B
			PM	13.1 sec	B
6	East Cypress Road/Jersey Island Road	Stop Sign	AM	10.1 sec	B
			PM	9.8 sec	A
7	East Cypress Road/Bethel Island Road	Stop Sign	AM	9.3 sec	A
			PM	10.1 sec	B
8	West Cypress Road at Rose Avenue	Stop Sign	AM	8.1 sec	A
			PM	7.9 sec	A
9	West Cypress Road at O'Hara Avenue	Stop Sign	AM	10 sec	B
			PM	8.9 sec	A
10	Sellers Avenue at Laurel Road	Future	AM	N/A	N/A
			PM	N/A	N/A
11	Sellers Avenue at Delta Road	Stop Sign	AM	7.6 sec	A
			PM	8.5 sec	A
12	Main Street (SR-4) at Rose Avenue	Stop Sign	AM	33.5 sec	D
			PM	**>50 sec**	**F**
13	Main Street (SR-4) at O'Hara Avenue	Traffic Signal	AM	v/c = 0.57	A
			PM	v/c = 0.66	B
14	Main Street (SR-4) at Vintage Parkway	Traffic Signal	AM	v/c = 0.43	A
			PM	v/c = 0.49	A
15	Main Street (SR-4) at Laurel Road	Traffic Signal	AM	v/c = 0.45	A
			PM	v/c = 0.35	A
16	Main Street (SR-4) at Malicoat Avenue	Traffic Signal	AM	v/c = 0.42	A
			PM	v/c = 0.47	A
17	Main Street (SR-4) at Brownstone Rd	Stop Sign	AM	33 sec	D
			PM	26.3 sec	D
18	Main Street (SR-4) at Delta Road	Stop Sign	AM	**45.1 sec**	**E**
			PM	**>50 sec**	**F**
19	Laurel Road at Rose Avenue	Stop Sign	AM	9.5 sec	A
			PM	12 sec	B
20	Laurel Road at O'Hara Avenue	Stop Sign	AM	13.1 sec	B
			PM	10.6 sec	B
21	Laurel Road at Empire Avenue	Stop Sign	AM	11.1 sec	B
			PM	12.8 sec	B

Source: Abrams Associates Inc., February 2007

Transit Service

Tri-Delta Transit provides transit service in the area, providing three lines connecting Brentwood and the Pittsburg/Bay Point Bay Area Rapid Transit (BART) station. Tri-Delta Transit Route 391 operates during the commute hours on weekdays and Route 392 operates on weekends only. Both routes travel through local streets in Brentwood, Oakley, and Antioch. Route 300 is an express route on SR-4 with only four stops between Brentwood and the BART station. In the vicinity of the project, all three lines have bus stops located at the Main Street/SR-4 and Cypress Road intersection just to the southwest of the project site. However, service is not currently provided on Cypress Road east of SR-4/Main Street.

Baseline Conditions

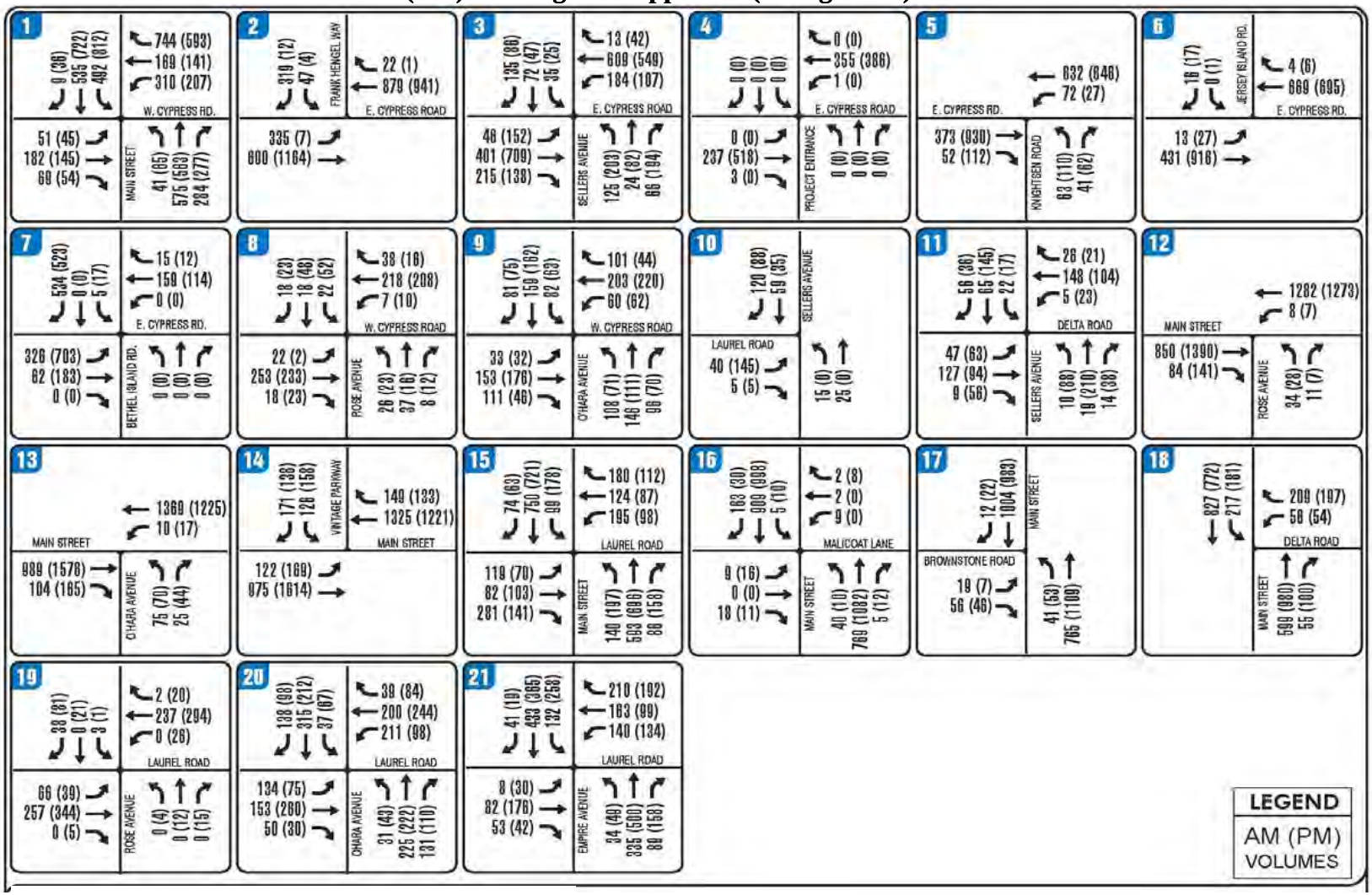
In order to provide a more accurate forecast of the impact of the Gilbert Property project on traffic in the area an analysis was also conducted to determine the traffic that would be added from approved projects that could affect the study area. The adjusted data is based on a complete list of approved projects provided by the City of Oakley and contained in the East Cypress Road Specific Plan Traffic Study. The analysis assumed that less than approximately 50 percent of the East Cypress Road Specific Plan development could be constructed and occupied before the proposed project is completed. Figure 4.4-5 shows the Baseline traffic volumes that were used in this analysis. The data was used to analyze the baseline (or "background") traffic conditions from which the effects of the Gilbert Property project will be measured. The baseline represents the traffic conditions that are forecast to exist once already approved projects (and other reasonably foreseeable projects) are completed and occupied.

Baseline Roadway Improvements

Funded roadway improvements planned for the next few years were assumed to be in place under the Baseline conditions. The baseline conditions assumed include the projects listed in the cumulative impacts section in chapter five of this DEIR. Major roadway improvements planned in the study area include:

- Extension of Neroly Avenue from its current terminus east to Main Street;
- Extension of East Cypress Road from Bethel Island Road to Sandmound Boulevard as a four-lane arterial;
- Signalization of East Cypress Road/Bethel Island Road intersection;
- Widening of Main Street/Laurel Road intersection;
- Signalization and widening of the Laurel Road/O'Hara Avenue intersection;
- Signalization and widening of the Laurel Road/Empire Avenue intersection; and
- Signalization of West Cypress Road/Empire Avenue intersection.

Figure 4.4-5
AM (PM) Existing Plus Approved (Background) Volumes



Source: Abrams Associates Inc., February 2007

Intersections

With the addition of the approved projects traffic to existing traffic volumes, several intersections would exceed the standards set forth by the City of Oakley and Contra Costa County (LOS D or better). Because Main Street provides the primary access to regional transportation facilities, most of the expected Baseline traffic would be added to Main Street. As a result, several study intersections along Main Street/SR-4 would degrade to LOS E or LOS F including the intersections at O'Hara Avenue, Malicoat Avenue, and Brownstone Road.

One other unsignalized intersection would also operate at LOS F on the side street approach – East Cypress Road at Knightsen Avenue. In general, some additional roadway improvements are already needed to adequately accommodate the projected traffic growth due to approved projects. Although the improvements are not assumed to be in place as part of the Baseline, many of the improvements required to address these problems (i.e the Main Street Bypass) are already planned for the area and are discussed in the "Impacts and Mitigations Measures" section. The results of the levels of service analysis for the baseline conditions are given in Table 4.4-3.

REGULATORY CONTEXT

Existing policies, laws and regulations that would apply to the proposed project are summarized below.

State

The California Department of Transportation (Caltrans) has jurisdiction over State highways. Therefore, Caltrans controls all construction, modification, and maintenance of State highways, such as SR-4. Any improvements to SR-4 would require Caltrans approval.

Local

Contra Costa County Transportation Authority

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

Table 4.4-3
Baseline Intersection Operations

INTERSECTION		CONTROL	PEAK HOUR	BASELINE	
				MEASURE	LOS
1	Main Street (SR-4) and Cypress Road	Traffic Signal	AM	v/c = 0.60	A
			PM	v/c = 0.63	B
2	East Cypress Road/Frank Hengel Way	Traffic Signal	AM	v/c = 0.48	A
			PM	v/c = 0.34	A
3	East Cypress Road/Sellers Avenue	Traffic Signal	AM	v/c = 0.50	A
			PM	v/c = 0.53	A
4	East Cypress Road/Main Project Entrance	Future	AM	N/A	N/A
			PM	N/A	N/A
5	East Cypress Road/Knightsen Avenue	Stop Sign	AM	29.5 sec	D
			PM	**>50 sec**	**F**
6	East Cypress Road/Jersey Island Road	Stop Sign	AM	10.6 sec	B
			PM	11.6 sec	B
7	East Cypress Road/Bethel Island Road	Traffic Signal	AM	v/c = 0.32	A
			PM	v/c = 0..34	A
8	West Cypress Road at Rose Avenue	Stop Sign	AM	8.5 sec	A
			PM	8.3 sec	A
9	West Cypress Road at O'Hara Avenue	Stop Sign	AM	11.4 sec	C
			PM	9.9 sec	A
10	Sellers Avenue at Laurel Road	Stop Sign	AM	9.2 sec	A
			PM	9.3 sec	A
11	Sellers Avenue at Delta Road	Stop Sign	AM	7.9 sec	A
			PM	9.1 sec	A
12	Main Street (SR-4) at Rose Avenue	Stop Sign	AM	**>50 sec**	**F**
			PM	**>50 sec**	**F**
13	Main Street (SR-4) at O'Hara Avenue	Traffic Signal	AM	v/c = 0.85	D
			PM	**v/c = .99**	**E**
14	Main Street (SR-4) at Vintage Parkway	Traffic Signal	AM	v/c = 0.57	A
			PM	v/c = 0.58	A
15	Main Street (SR-4) at Laurel Road	Traffic Signal	AM	v/c = 0.60	A
			PM	v/c = 0.52	A
16	Main Street (SR-4) at Malicoat Avenue	Traffic Signal	AM	v/c = 0.59	A
			PM	v/c = 0.68	B
17	Main Street (SR-4) at Brownstone Rd	Stop Sign	AM	**>50 sec**	**F**
			PM	**>50 sec**	**F**
18	Main Street (SR-4) at Delta Road	Stop Sign	AM	**>50 sec**	**F**
			PM	**>50 sec**	**F**
19	Laurel Road at Rose Avenue	Stop Sign	AM	10.1 sec	B
			PM	15.0 sec	B
20	Laurel Road at O'Hara Avenue	Traffic Signal	AM	v/c = 0.43	A
			PM	v/c = 0.39	A
21	Laurel Road at Empire Avenue	Stop Sign	AM	32.7 sec	D
			PM	**>50 sec**	**F**

Source: Abrams Associates Inc., February 2007

Measure C

To receive 18 percent Local Street Maintenance and Improvement funds, Measure C requires each jurisdiction in Contra Costa County to take the following actions: adopt a Growth Management Element that sets traffic level-of-service and facility performance standards; adopt both a development mitigation program and a transportation systems management ordinance; participate in cooperative planning to reduce traffic impacts; develop a five-year capital improvement program; and address housing options and job opportunities.

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

City of Oakley General Plan

The Transportation and Circulation Element included in the City of Oakley General Plan was prepared pursuant to Section 65302(b) of the California Government Code. The Transportation and Circulation Element is required to address the location and extent of existing and planned transportation routes, terminals, and other local public utilities and facilities. Furthermore, the Transportation and Circulation Element must be consistent with the other elements of the General Plan, accommodating future travel demand and contributing to, rather than inhibiting, the attainment of desired land use patterns in the Land Use Element.

The General Plan identifies several roadway and transit goals and policies that have been adopted to ensure that the transportation system of the City will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multi-modal transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the City and provide for the transport of goods and services within the City.

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

Open Space

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

Policy 2.6.1 Provide public access to the Delta and the waterfront wherever appropriate and feasible. Typically, such access should be

unobstructed to the public by foot or bicycle, and where appropriate by horse, automobile and/or boat.

Policy 2.6.4 All public recreational areas and facilities shall be accessible by a publicly maintained road.

Policy 2.6.B Through the development review process, ensure that development projects provide increased public access to the Delta and the waterfront. Consider the appropriate type of access (pedestrian, equestrian, vehicular, etc.) and require developer improvements to support such access.

Trails

Goal 2.7 Provide a system of multi-use trails that connects residential districts, parks and schools, employment centers and natural areas, throughout Oakley and the region, including the Delta.

Policy 2.7.1 Promote a comprehensive trail program throughout the Oakley community and give preference to developments that incorporate the design of the trails, including trails of neighboring communities where feasible, and associated open space into their design.

Policy 2.7.A Adopt and regularly update a City of Oakley Comprehensive Trail Plan within 2 years.

Policy 2.7.B Require dedications from developers proposing projects located adjacent to designate trail alignments.

Policy 2.7.C Seek grant funding and participation from regional, state and federal entities and agencies to support implementation of the City's Trail Plan.

Policy 2.7.D Coordinate Oakley's trail system with regional trail programs through the review of plans and programs of neighboring communities, the County and associated agencies that provide trails within the region.

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

Roadway Goals

Goal 3.1 Provide an efficient and balanced transportation system.

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

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

Policy 3.1.3 Keep roadway facilities in optimal condition.

Policy 3.1.5 Encourage a multi-modal circulation system that supports non-automobile travel.

Policy 3.1.6 Address future roadway needs through both new road construction and management of existing and planned roadway capacity.

Policy 3.1.8 Mitigate conflicts between new roadway improvements and existing rural roadways when the identified conflicts threaten public health, safety and welfare.

Bicycles and Pedestrians

Goal 3.2 Promote and encourage walking and bicycling.

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

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

Policy 3.2.3 Create a bicycle and pedestrian system that provides connections throughout Oakley and with neighboring areas, and serves both recreational and commuter users.

Public Transportation

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

Policy 3.3.1 Design new roadways and facilities to accommodate public transit.

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

Policy 3.3.3 Encourage transit providers to improve transit routes, frequency, and level of service to adequately serve the mobility needs of Oakley residents, including those dependent on public transit.

Neighborhood Traffic Management

Goal 3.4 Minimize the intrusion of through traffic on residential streets.

Policy 3.4.1 Direct non-local traffic onto collector streets and arterials.

Policy 3.4.2 Maintain traffic speeds and volumes on neighborhood streets consistent with residential land uses.

Policy 3.4.3 Provide adequate capacity on collector and arterial streets to accommodate travel within the City.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Based on the adopted policies of CCTA, the City of Oakley, and Contra Costa County a traffic impact would be considered significant if any of the following conditions, or potential thereof, would result from implementation of the proposed project.

- Substantially increased traffic volumes in relation to existing traffic load and capacity of the street system;
- A decline in LOS at a signalized intersection to unacceptable Level E (V/C = 0.90) or lower;
- A decline in LOS at an unsignalized intersection to unacceptable level - LOS E (Average Delay = 35 seconds) or lower;
- An unsignalized intersection is forecast to meet the warrants for installation of a traffic signal, as set forth by Caltrans;
- Failure of any street or portion of a street to meet accepted safety and design standards or guidelines;
- Failure to meet adopted alternative transportation policies, plans, or programs; or
- Inadequate access for emergency vehicles.

Method of Analysis

Abrams Associates Traffic Engineering, Inc. conducted a Traffic Impact Analysis for the Gilbert Property project. The analysis is intended to quantify the traffic impacts of the project and to address the circulation and roadway improvements needed to mitigate these impacts. The analysis, summarized herein, addresses traffic conditions occurring during the morning and evening peak hours, and the area studied encompasses all of the major intersections that would be affected by the proposed project. The analysis considers the project's impacts on the baseline

traffic conditions as well as conditions occurring in the future under the City of Oakley and Contra Costa County General Plans.

Intersections Studied

For this purposes of this analysis, observations of peak hour traffic conditions and a test for peak hour volumes were conducted at all unsignalized project study intersections. The intersections in Table 4.4-4 were studied for project-related impacts.

Table 4.4-4
Intersections Studied

Number	Intersection Name	Traffic Control
1	East Cypress Road and Main Street (State Route 4)	Traffic Signal
2	East Cypress Road and Hengel Way (Middle School)	Stop sign
3	East Cypress Road and Sellers Avenue	Traffic Signal
4	East Cypress Road and Entrance to Gilbert (Franklin)	Future
5	East Cypress Road and Knightsen Avenue	Stop sign
6	East Cypress Road and Jersey Island Road	Stop sign
7	East Cypress Road and Bethel Island Road	Future
8	West Cypress Road and Rose Avenue	All-way stop
9	West Cypress Road and O'Hara Avenue	Traffic Signal
10	Seller Avenue and Laurel Road	Future
11	Seller Avenue and Delta Road	All-way stop
12	Main Street (State Route 4) and Rose Avenue	Stop sign
13	Main Street (State Route 4) and O'Hara Avenue	Traffic Signal
14	Main Street (State Route 4) and Vintage Parkway	Traffic Signal
15	Main Street (State Route 4) and Laurel Road	Traffic Signal
16	Main Street (State Route 4) and Malicoat Avenue	Traffic Signal
17	Main Street (State Route 4) and Brownstone Road	Stop sign
18	Main Street (State Route 4) and Delta Road	Stop sign
19	Laurel Avenue and Rose Avenue	Stop sign
20	Laurel Road and O'Hara Avenue	All-way stop
21	Laurel Road and Empire Avenue	All-way stop

Levels of Service Evaluations

Levels of service at each of the intersections studied were evaluated to demonstrate how the proposed project would impact the transportation and circulation system. Three near-term and two long-term cumulative scenarios were considered:

- Existing Conditions – The current (2004 and 2005) traffic volumes and roadway conditions were evaluated. These traffic counts are less than three years old and there have not been any changes to the approved projects list that would result in any changes to the traffic volumes presented in the 2004 and 2005 data, therefore considered adequate for the proposes of the traffic study for the proposed project.

- *Existing-Plus-Approved-Projects (Baseline) Conditions* – This scenario evaluates conditions that would result when adding traffic generated by already approved projects that might affect the study intersections to existing traffic conditions.
- *Baseline-Plus-Project Conditions* – This scenario begins with the conditions determined for the existing-plus-approved-projects scenario and adds traffic that would be generated by the proposed Gilbert Property project.
- *Year 2030 Conditions* – Future traffic conditions at the study intersections were projected based on "Eastern Contra Costa County Travel Demand Model" developed by the Contra Costa Transportation Authority (CCTA).
- *Year 2030 Plus Project Conditions* – This scenario begins with the conditions determined for the year 2030 conditions above and adds traffic that would be generated by the proposed Gilbert Property project.

Already approved projects consist of developments that are either under construction, are completed but fully or partially unoccupied, or that are not yet built but have final development-plan approval from the City. The methodology used assumes that all approved projects are completed and fully occupied in the year 2030 traffic scenarios.

Trip Generation

Trip generation is defined as the number of one-way vehicle trips produced by a particular land use or study site. Trips generated by the Gilbert Property Project were estimated using the rates contained in *Trip Generation, Seventh Edition*, published by the Institute of Transportation Engineers.

As mentioned previously, the Gilbert Property is proposed for residential development consisting of 510 single-family residential units, but for the purposes of this analysis it is assumed there could be up to 515 units. The additional five units provide a conservative analysis. The trip generation rates for this project were based on the most current ITE rates from the seventh edition of the ITE Trip Generation Manual for Single-family Detached Housing (Land Use Code 210) as shown in Table 4.4-5.

Table 4.4-5
Trip Generation Rates for the Gilbert Property

		AM PeakHour (8:00-9:00AM)			PM Peak Hour (5:00-6:00 PM)		
Development	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Single-Family Detached Housing	9.57	0.19	0.56	0.75	0.64	0.37	1.01
Source: Abrams Associates Inc., February 2007							

Trip Distribution and Assignment

Trip distribution is the process of determining in what proportion vehicle trips would travel between different locations within a traffic study area. Trip assignment is the allocation of vehicle trips to available routes (local streets) between locations in the traffic study area. Traffic was distributed to the roadway system manually based on existing travel patterns. Future traffic generated by approved and buildout developments was distributed and assigned to the local street system using information from the City of Oakley and Contra Costa County General Plans and from the "Eastern Contra Costa County Travel Demand Model," which takes into account likely peak-hour route choices.

Roadway Improvements Assumptions

Based on information provided to Abrams Associates by the City and the data contained in the East County Travel Demand Model, the long-term scenarios include major improvements to the traffic network including a SR-4 bypass, improvements to Laurel Road, an extension of Laurel Road connecting to Sellers Avenue, and improvements to Sellers Avenue between Cypress Road and Laurel Road. The Year 2030 analyses were prepared based on the assumption that these key roadway improvements in the study area will be fully completed as planned.

Intersection Capacity Analysis

The level of service (LOS) measurement is a qualitative description of traffic operating conditions for intersections and roadways. Levels of service describe these conditions in terms of such factors as speed, travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. Levels of service are given letter designations ranging from A to F, which are defined in Tables 4.4-5 and 4.4-6 below. The LOS measurement that is used to determine the significance of any impacts a project might have on traffic and circulation is an intersection's *overall* LOS. Separate methodologies are used to determine levels of service at signalized and unsignalized intersections.

Signalized Intersections

The operating conditions at the signalized study intersections were evaluated using the most recent 1995 update of the Contra Costa County Transportation Authority's CCTALOS Program (Version 2.35). This is the intersection analysis methodology currently required by the CCTA. This program uses the TRB (Transportation Research Board) Circular 212 methodology to analyze the operations at signalized intersections based on the utilization of intersection capacity. The LOS definitions for signalized intersections are included in Table 4.4-1.

Unsignalized Intersections

For unsignalized intersections the methodology set forth in Chapter 10 of the 2000 Highway Capacity Manual was used. This methodology is based on average total delay (seconds/vehicle). The HCM analysis was conducted using Traffix 7.7 and the level-of-service calculations are included in Appendix D.

As with signalized intersections, six levels of service for unsignalized intersections, A through F, which represent conditions from best to worst, respectively. Table 4.4-6 shows the corresponding average total delay per vehicle at unsignalized intersections for each LOS category from A to F.

Table 4.4-6
Level-of-Service for Unsignalized Intersections

Level of Service (LOS)	Average Total Delay (sec/veh)	Traffic Condition
A	< 10	No Delay
B	>10 - 15	Short Delay
C	>15 – 25	Moderate Delay
D	>25 – 35	Long Delay
E	>35 – 50	Very Long Delay
F	> 50	Volume>Capacity

Source: Abrams Associates Inc., February 2007

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.4-1 Project contribution to unacceptable LOS operations on Main Street at O'Hara Avenue, Cypress Road, and at Malicoat Avenue.

Based on these ITE trip rates, the daily and peak hour project trips have been calculated. At the three proposed entrances the project is expected to generate about 4,900 vehicle trips per day, with about 386 trips during the AM peak hour and about 520 trips during the PM peak hour. A summary of the estimated trip generation during the AM and PM peak hours is shown on Table 4.4-7. The project trips forecast to be added to each of the study intersections are shown on Figure 4.4-6.

Trip Distribution

Figure 4.4-7 shows the trip distribution percentages that were used in the analysis. Figure 4.4-8 shows the resulting background plus project turning movements at each of the study intersections. Although Cypress Road would remain the primary access to the project, in the future a large portion of the traffic from this area is assumed to travel to and from the south on Sellers Avenue to access the SR-4 Bypass via the planned extension of Laurel Road. It should also be noted that approximately 22 percent of the project traffic would be internal trips within the Oakley city limits.

Table 4.4-7
Trip Generation for the Gilbert Property

		AM Peak Hour (8:00-9:00 AM)			PM Peak Hour (5:00-6:00 PM)		
Development	**Daily Trips**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Single-Family Detached Housing (515 units)	4,929	98	288	386	330	190	520
Total Project Trips	4,929	98	288	386	330	190	520

Source: Abrams Associates Inc., February 2007

Project Roadway Improvements

Consistent with the Oakley 2020 General Plan, roadway infrastructure would be constructed to meet the needs of new residential neighborhoods and provide access to this portion of Oakley. Street widths would be designed in accordance with traffic studies completed for the project as well as the Oakley 2020 General Plan.

Cypress Road will be improved along the project boundary with a landscaped median, as well as a landscaped corridor with a trail on the north side of the road. The project would complete the northern half of Cypress Road with three westbound through lanes from Sellers Avenue to the western boundary of the CCWD/USBR right of way.

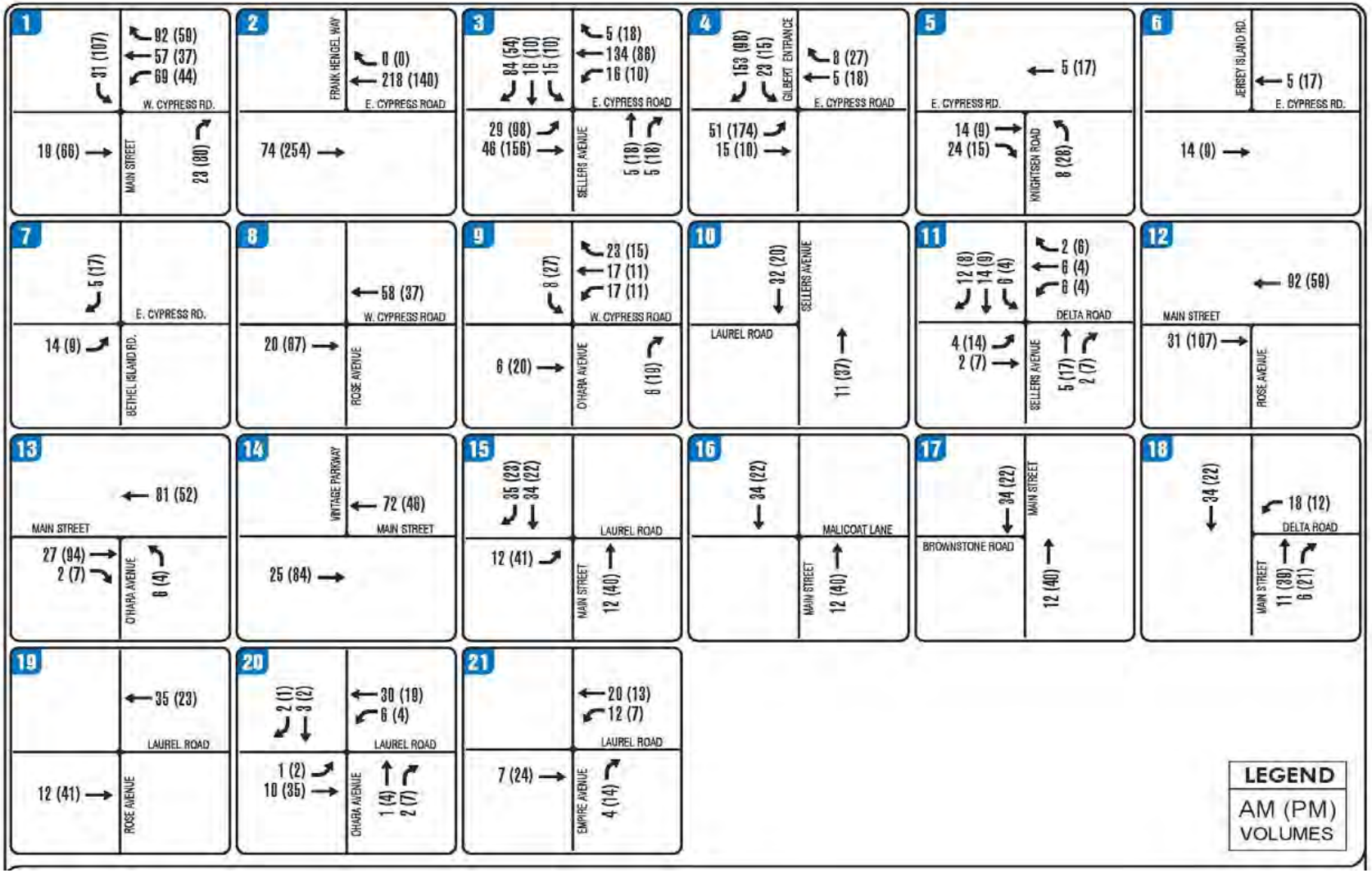
Sellers Avenue will be constructed as a two lane divided road from Cypress Road north to the project boundary with the CCWD/USBR Right of Way, as adopted by the Development Agreement.

Local streets will be designed and constructed per City of Oakley and Contra Costa County standards.

Other roadway improvements associated with the Gilbert Property project include the following:

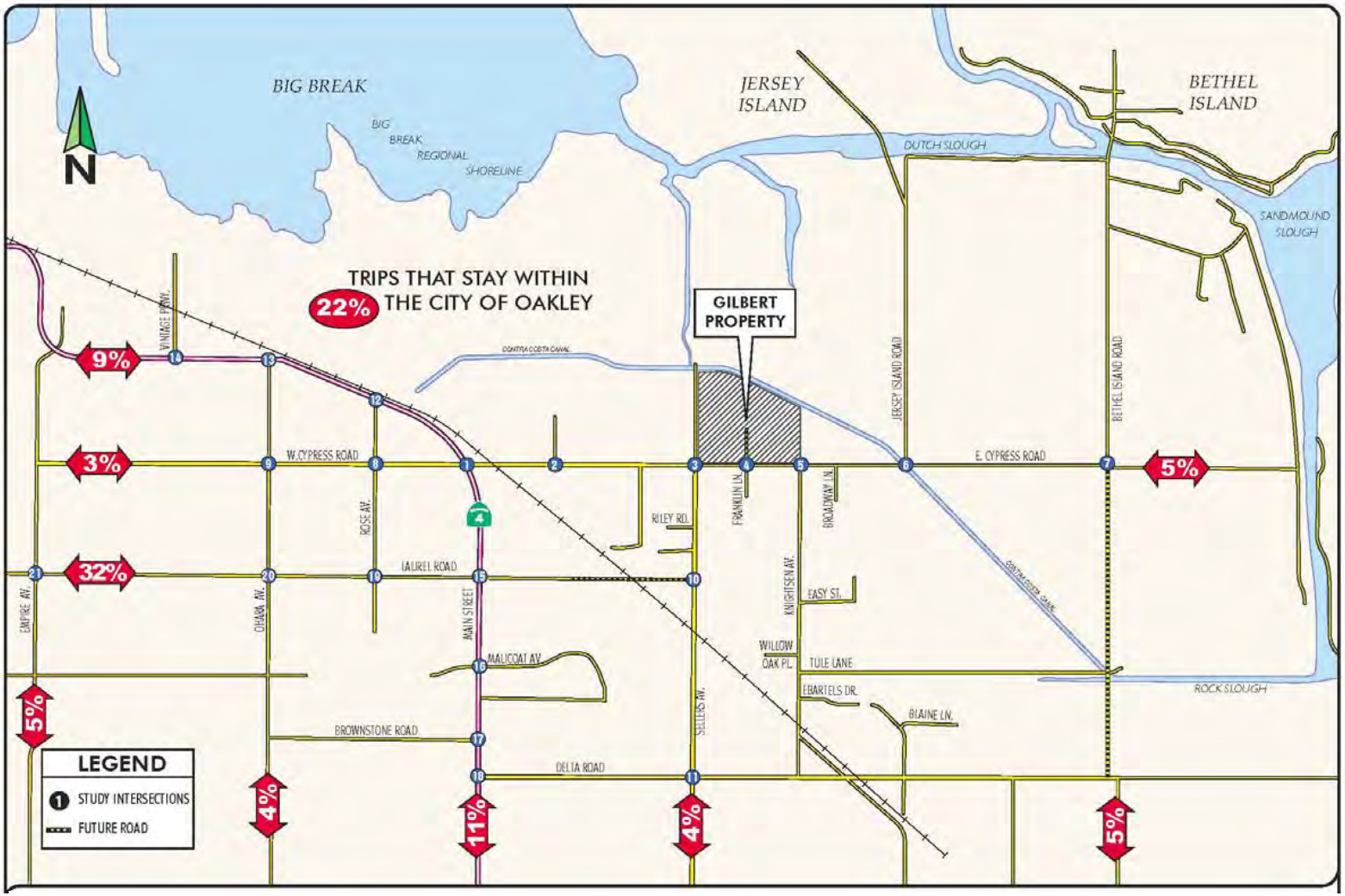
- Transition of Sellers Avenue north to the future community park;
- Modification of existing traffic signals and installation of new traffic signal at the main entry;
- Intersection improvements for Franklin Lane and Knightsen Avenue at Cypress Road; and
- Modification of existing driveways to adjacent properties.

Figure 4.4-6
AM (PM) Project Trip Generation Volumes



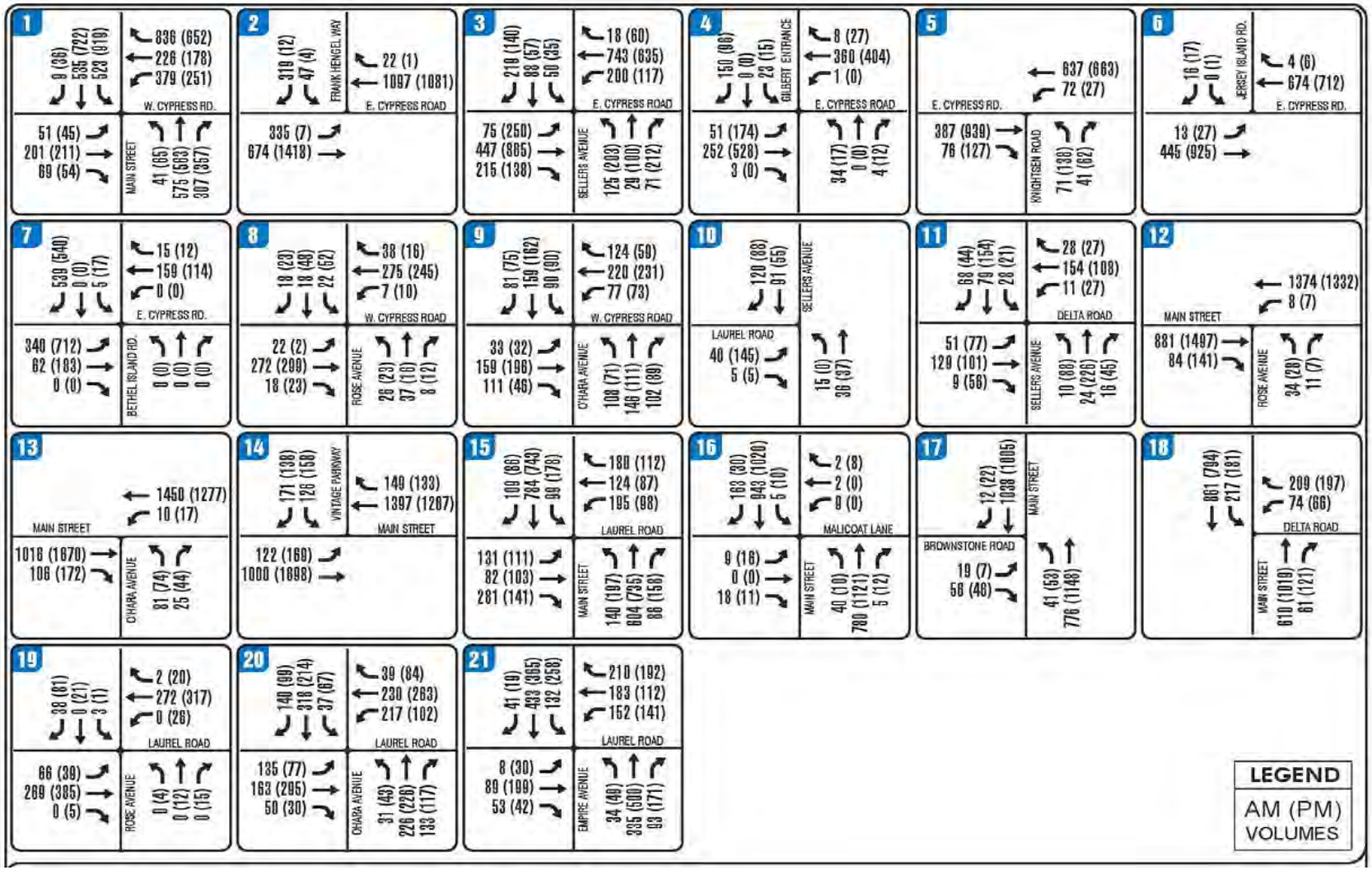
Source: Abrams Associates Inc., February 2007

Figure 4.4-7
Cumulative Trip Distribution



Source: Abrams Associates Inc., February 2007

Figure 4.4-8
AM (PM) Background Plus Project Volumes



Source: Abrams Associates Inc., February 2007

Intersection Operations

The capacity calculations for the Baseline Plus Project scenario are shown in Table 4.4-8. As seen in this table, the addition of traffic from the Proposed Project results in one additional intersection degrading to unacceptable levels – intersections at Main Street at O'Hara Avenue (Intersection #13) which would degrade to LOS "F" in the PM peak hour. This would exceed the established intersection LOS standards (LOS "D") and would be considered a potentially significant impact. Beyond this intersection the analysis indicates the project would not cause any other significant impacts on traffic operations in the area.

The project LOS shown in Table 4.4-8 does not include the mitigation measures discussed in the "2006 Baseline Plus Project Impacts and Mitigation Measures" section. Many of the proposed mitigation measures are intended to accommodate cumulative traffic conditions. With these mitigations in place all intersections would have acceptable operations (LOS "D" or better) and the project's impacts on traffic operations would be mitigated to a less-than-significant level. The complete LOS calculations for all the alternatives are included in the appendix to the traffic study contained in Appendix D.

Conclusion

The implementation of the proposed project would contribute to the volume of traffic in the area. As illustrated in Table 4.4-8, the development of the proposed project would lead to an increase in waiting times at nearby intersections. As a result, the intersections at Main Street at O'Hara Avenue would likely fall to LOS F and have a negative impact on intersection delay during peak times.

Mitigation of the unacceptable conditions at intersections on Main Street would be partially achieved through the planned construction of Segment 1 of the SR-4 Bypass, the Laurel Road Interchange, and improvements to Laurel Road and Sellers Avenue as discussed below. The improvement would provide an alternative route to Main Street and alleviate some of its congestion.

Improvements to Laurel Road would include extending the western portion to connect with the SR-4 Bypass, widening it to a four-lane arterial between Empire Avenue and Main Street, and extending Laurel Road on the east from Laurel Road's current terminus just west of the Union Pacific Railroad to Sellers Avenue. Sellers Avenue would be upgraded to a four-lane arterial between East Cypress Road and Laurel Road. The roadway improvements on Laurel Road and Sellers Avenue in conjunction with the construction of Segment 1 of the SR-4 Bypass would provide access to and from the SR-4 freeway, and improve operations along East Cypress Road and Main Street.

Table 4.4-8
Baseline Plus Project Intersection Operations

	INTERSECTION	CONTROL	PEAK HOUR	BASELINE		CONTROL	BASELINE + GILBERT	
				MEASURE	LOS		MEASURE	LOS
1	Main Street (SR-4) and Cypress Road	Traffic Signal	AM	v/c = 0.60	A	Traffic Signal	v/c = 0.66	B
			PM	v/c = 0.63	B		v/c = 0.71	C
2	East Cypress Road/Frank Hengel Way	Traffic Signal	AM	v/c = 0.48	A	Traffic Signal	v/c = 0.55	A
			PM	v/c = 0.34	A		v/c = 0.42	A
3	East Cypress Road/Sellers Avenue	Traffic Signal	AM	v/c = 0.50	A	Traffic Signal	v/c = 0.58	A
			PM	v/c = 0.53	A		v/c = 0.62	B
4	East Cypress Road/Main Project Entrance	Future	AM	N/A	N/A	Traffic Signal	v/c = 0.22	A
			PM	N/A	N/A		v/c = 0.53	A
5	East Cypress Road/Knightsen Avenue	Stop Sign	AM	29.5 sec	D	Stop Sign	19.0 sec	C
			PM	**>50 sec**	**F**		**>50 sec**	**F**
6	East Cypress Road/Jersey Island Road	Stop Sign	AM	10.6 sec	B	Stop Sign	10.6 sec	B
			PM	11.6 sec	B		11.6 sec	B
7	East Cypress Road/Bethel Island Road	Traffic Signal	AM	v/c = 0.32	A	Traffic Signal	v/c = 0.32	A
			PM	v/c = 0..34	A		v/c = 0..35	A
8	West Cypress Road at Rose Avenue	Stop Sign	AM	8.5 sec	A	Stop Sign	8.9 sec	A
			PM	8.3 sec	A		8.3 sec	A
9	West Cypress Road at O'Hara Avenue	Stop Sign	AM	11.4 sec	C	Stop Sign	12.9 sec	B
			PM	9.9 sec	A		9.9 sec	A
10	Sellers Avenue at Laurel Road	Stop Sign	AM	9.2 sec	A	Stop Sign	9.5 sec	A
			PM	9.3 sec	A		9.3 sec	A
11	Sellers Avenue at Delta Road	Stop Sign	AM	7.9 sec	A	Stop Sign	8.0 sec	A
			PM	9.1 sec	A		9.1 sec	A
12	Main Street (SR-4) at Rose Avenue	Stop Sign	AM	**>50 sec**	**F**	Stop Sign	**>50 sec**	**F**
			PM	**>50 sec**	**F**		**>50 sec**	**F**
13	Main Street (SR-4) at O'Hara Avenue	Traffic Signal	AM	v/c = 0.85	D	Traffic Signal	v/c = 0.90	D
			PM	**v/c = 0 .99**	**E**		**v/c = 1.05**	**F**
14	Main Street (SR-4) at Vintage Parkway	Traffic Signal	AM	v/c = 0.57	A	Traffic Signal	v/c = 0.59	A
			PM	v/c = 0.58	A		v/c = 0.60	A
15	Main Street (SR-4) at Laurel Road	Traffic Signal	AM	v/c = 0.60	A	Traffic Signal	v/c = 0.63	B
			PM	v/c = 0.52	A		v/c = 0.56	A
16	Main Street (SR-4) at Malicoat Avenue	Traffic Signal	AM	v/c = 0.59	A	Traffic Signal	v/c = 0.38	A
			PM	v/c = 0.68	B		v/c = 0.36	A
17	Main Street (SR-4) at Brownstone Rd	Stop Sign	AM	**>50 sec**	**F**	Stop Sign	**>50 sec**	**F**
			PM	**>50 sec**	**F**		**>50 sec**	**F**
18	Main Street (SR-4) at Delta Road	Stop Sign	AM	**>50 sec**	**F**	Stop Sign	**>50 sec**	**F**
			PM	**>50 sec**	**F**		**>50 sec**	**F**
19	Laurel Road at Rose Avenue	Stop Sign	AM	10.1 sec	B	Stop Sign	10.4 sec	B
			PM	15.0 sec	B		15.0 sec	B
20	Laurel Road at O'Hara Avenue	Traffic Signal	AM	v/c = 0.43	A	Traffic Signal	v/c = 0.39	A
			PM	v/c = 0.39	A		v/c = 0.33	A
21	Laurel Road at Empire Avenue	Stop Sign	AM	32.7 sec	D	Traffic Signal	v/c = 0.34	A
			PM	**>50 sec**	**F**		v/c = 0.52	A

Source: Abrams Associates Inc., February 2007

The West Cypress Road/Main Street intersection additions of a second southbound left-turn lane, reconfiguration of the eastbound right-turn lane to a shared through/right-turn lane, and reconfiguration of the westbound through lane to a shared through/right-turn lane would result in acceptable conditions.

The Main Street/O'Hara Avenue intersection acceptable LOS can be achieved through the construction of the Main Street Downtown Bypass. The bypass project would realign Main Street north of its current alignment as a new four-lane arterial between west of Vintage Parkway and 2nd Street and provide an alternative to Main Street through Downtown Oakley. The Main Street Downtown Bypass was included in the Old Town Oakley Specific Plan in 1999. The creation of the bypass would decrease the total traffic load on the existing roadways and decrease the total traffic volumes on the above-identified intersections.

The development of the Gilbert Property project would result in an increased demand on local traffic circulation in the vicinity of the proposed development. Therefore, without the implementation of recommended mitigations, the development of the proposed project would result in a ***potentially significant*** impact to the LOS of these three intersections along Main Street.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impacts to *less-than-significant* level.

4.4-1 *Prior to final map approval, the proposed project would contribute to the mitigation of the above-identified impacts by paying the proposed project's fair share of the cost through the payment of regional traffic fees to the East Contra Costa Regional Fee and Finance Authority (ECCRFFA) and the City's Transportation Impact Fee.*

4.4-2 Impacts related to the need for traffic signals at currently unsignalized intersections.

Traffic signals are used to provide for an orderly flow of traffic through an intersection. Many times they are needed to provide side street traffic and opportunity to access a major road where high volumes and/or high vehicle speeds block crossing or turn movements. The signals do not, however, necessarily increase the capacity of an intersection (i.e., increase the intersection's ability to accommodate additional vehicles) and, in fact, often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at improper locations.

Eleven possible tests exist (called "warrants") set forth by Caltrans (and the Manual of Uniform Traffic Control Devices) for determining whether a traffic signal should be considered for installation. These tests consider criteria such as traffic volumes and delay, pedestrian volumes, presence of school children, and accident history. Usually,

two or more warrants must be met before a signal is installed. If the Peak Hour Volume Warrant (Warrant #11) is met at an intersection that is usually a strong indication that a more detailed signal warrant analysis covering all possible warrants is appropriate.

Future traffic signals are already planned at the four unsignalized intersections that have side streets that operate at LOS E or LOS F. Although the project would contribute to the need for these traffic signals, they would not be required as mitigations because the overall LOS at these intersections would remain at acceptable levels and the traffic from the proposed project alone would not cause any intersections to meet the warrants where they were not already warranted.

The development of the proposed project would increase the total traffic during both AM and PM peak hours and result in a decrease in the levels of service of existing intersections which are currently regulated by stop signs. The traffic study conducted by Abrams Associates Traffic Engineering reveals, the AM/PM peak hour levels of service (LOS) is currently F (failing) at the intersections of Main Street and Rose Avenue, Main Street and Brownstone Road, Main Street and Delta Road, and East Cypress Road and Knightsen Avenue. Wait times at these intersections would be expected to be more than 50 seconds (Table 4.4-8).

The development of the proposed project would increase the traffic through these intersections, resulting in additional waiting times at these stop signs. Although the overall LOS at these unsignalized intersections would remain unchanged with the addition of project generated trips, traffic would be added to minor movements that would continue to operate at LOS F. Traffic signals will ultimately be warranted at each of these locations regardless of whether or not the proposed project is implemented. The addition of these signals would provide the necessary traffic controls to bring the LOS delays at these intersections within acceptable levels. However, the proposed project would be required to contribute by paying its fair share of the signals through the payment of the City's Transportation Impact Fees.

Therefore, because the above intersections would fail with or without the proposed project and project would contribute to the City's Transportation Impact Fee Program, a ***less-than-significant*** impact would result.

Mitigation Measure(s)
None required.

4.4-3 Traffic impacts related to the railroad crossing on Cypress Road.

The proposed project is expected to generate additional trips on Cypress Road during the evening peak hour. Despite the proposed widening of Cypress Road from two to four lanes, which would help increase the flow of peak evening traffic, the increase in vehicle trips during peak hours would result in congestion at the existing railroad crossing on Cypress Road to the west of the project site.

The proposed project would result in an increase in traffic flows that would create congestion at the current railroad crossing, resulting in a ***potentially significant*** impact to traffic at the railroad crossing at Cypress Road.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level.

4.4-3(a) *Prior to approval of building permits, the applicant shall contribute its fair share, to be determined by the City at the time of the approval of the building permits, toward the reconstruction of the Main Street/Cypress Road intersection as determined by the City Engineer for the following improvements:*

- *To provide approximately 600 feet of storage on Main Street for the southbound left-turn and northbound right-turn movements.*
- *Interconnect all signals.*

4.4-3(b) *Implement Mitigation Measure 4.4-1.*

4.4-4 Impacts related to alternative transportation facilities.

Oakley currently has limited bicycle facilities within the City. Bicycle lanes are provided on Cypress Road between Rose Avenue and Marsh Creek. The Contra Costa Countywide Transportation Plan designates Oakley Road/Empire Avenue/Cypress Road as a Regional Bicycle Route, providing a connection to the Marsh Creek Regional Trail. The Marsh Creek Regional Trail, along with the Delta de Anza Regional Trail (between Neroly Road and Cypress Road), is a multi-use, paved trail for hikers, horses, and bicycles. The proposed roadway improvements are designed to meet minimum City of Oakley standards, which could accommodate transit services.

For pedestrian access the roadways within the project would provide sidewalks on at least one side of the roadway. Trails would also be provided on top of the levees surrounding the project site. For bicycles off-street multi-use trails (class I facilities) would be located along the on top of the levees surrounding the project site, and the park within the site. On-street bicycle lanes (class II) would be provided along both sides of East Cypress Road and Sellers Avenue. Dedicated bicycle facilities would not be provided along the internal roads or local streets within the neighborhoods.

Transit services do not currently service the site. However, given the amount of planned development in the area surrounding the project, Tri Delta Transit, the local transit service provider, may decide to provide regular transit service in the area. The arterials and collectors within the project area would provide adequate lane widths to accommodate future transit vehicles and bus pullouts are currently planned for East Cypress Road at Sellers Avenue. In general, the project's current design would not conflict with the City's adopted alternative transportation policies and plans.

Transit for the local area, but not the project site itself, is provided by Tri-Delta Transit. The proposed project would increase demand for public transit service. The proposed roadway improvements are designed to meet minimum City of Oakley standards, which could accommodate transit services. Tri-Delta Transit, after reviewing the conceptual development plan, indicated that the proposed project could be served in the future if bus stops and/or shelters are included in the designs. The lack of bus service to the project area would be a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce impacts related to transit to a *less-than-significant* level.

4.4-4 *The project shall include bus stops on both sides of Cypress Road near Sellers Avenue. The final design and location of these bus stops shall be subject to the approval of the Oakley City Engineer prior to approval of final maps. The City Engineer shall coordinate with Tri-Delta Transit as to the placement of the bus stops.*

4.4-5 Impacts related to site access and circulation.

The Gilbert Property residential development would have a signalized primary entrance on Cypress Road at Franklin Lane and a secondary stop controlled entrance on Sellers Avenue. The entrance on Sellers Avenue would be aligned with the potential future entrance to the Emerson Project and the project would also have the potential for a connection to the Burroughs property to the east.

The Gilbert Property project would include primary entrance along the southern portion of the project site connecting to Cypress Road. According to Abrams Associates, the proposed site plan circulation is anticipated to function well and would not cause any safety or operational problems. The project site design has been required to conform to City design standards and is not expected to create any significant impacts to pedestrians, bicyclists or traffic operations. All necessary truck turning movements can also be accommodated. Therefore, impacts related to site access and circulation to the proposed project would be ***less-than-significant***.

Mitigation Measure(s)
None required.

4.4-6 Impacts regarding emergency vehicle access on and surrounding the proposed project.

Factors such as number of access points, roadway width, and proximity to fire stations determine whether a project has sufficient emergency access. The land use plan (see Figure 3-3 in Chapter 3 of this Draft EIR) for the proposed Gilbert Property project would provide two access points from the arterials in the area including one access point

to Cypress Road and one to Sellers Avenue and on the west side of the project site. All lane widths within the project would meet the minimum width that can accommodate an emergency vehicle; therefore, the width of the internal roadways would be adequate. Fire Station 93, located at 215 Second Street in Oakley, would allow for timely emergency response within the project area. Additionally, a fire station site is planned for construction on East Cypress Road immediately east of Bethel Island Road. Therefore, the development of the proposed project is expected to have ***less-than-significant*** impacts regarding emergency vehicle access.

Mitigation Measure(s)
None required.

4.4-7 Impacts relating to the presence and availability of adequate parking.

The proposed project would include the construction of up to 510 residential units. The proposed project would provide a minimum of two off-street parking spaces for each residential unit to ensure consistency with the City requirements. New on-street parking spaces would be created along the new internal project roadways and would not infringe upon other streets in the area. Therefore, the proposed project is not expected to create negative parking impacts on the surrounding area and the impacts related to adequate parking would be ***less-than-significant***.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

Cumulative (2030) traffic forecasts for this study were based on information obtained from the East County Travel Demand Model and the East Cypress Road Specific Plan Traffic Study. The model was executed with the following assumptions: buildout of the Oakley General Plan within the City of Oakley; and the Association of Bay Area Governments (ABAG) Projections 2000 land use forecasts extended to year 2030 for areas outside of Oakley.

Cumulative (2030) Planned Roadway Improvements

The analysis assumes that several roadway improvements would be constructed in the interim period between the Baseline and Cumulative analysis years. Only roadway improvements with identified funding or identified as mitigation measures under the Baseline conditions were included in this scenario. Please note that some portions of these improvements would be constructed as part of the proposed project. Major roadway improvements that are fully funded and planned to be completed by 2030 include:

- Completion of SR-4 Bypass Segment 1 as a four-lane freeway between SR-4 and Lone Tree Way with a partial interchange at SR-4/SR 160, and interchanges at Laurel Road and Lone Tree Way;

- Completion of SR-4 Bypass Segment 2 as a four-lane freeway between Lone Tree Way and Balfour Road with interchanges at Sand Creek Road and Balfour Road;
- Completion of SR-4 Bypass Segment 3 as a two-lane expressway between Balfour Road and Vasco Road with at-grade intersections at Marsh Creek Road and Walnut Boulevard;
- Widening of Main Street to a six-lane arterial between Big Break Road and SR 160;
- Extension of Laurel Road from Empire Avenue to Antioch City Limits;
- Completion of a two-lane bridge over Rock Slough connecting Bethel Island Road and Byron Highway;
- Widening of East Cypress Road to a six-lane arterial between Sellers Avenue and Jersey Island Road and to a four-lane divided on either side of that;
- Extension of Laurel Road between Burlington Northern Railroad and Sellers Avenue as a four-lane arterial;
- Widening of Sellers Road to a four-lane arterial between East Cypress Road and Laurel Road;
- Widening of Laurel Road to a four-lane arterial between Empire Avenue and Main Street;
- Signalization of the intersections of Main Street with Rose Avenue, Brownstone Road, and Delta Road and the intersections of Sellers Avenue with Laurel Road and Delta Road; and
- Completion of the Main Street Downtown Bypass.

Cumulative (Year 2030) Without Project Scenario

The results of the Year 2030 (No Project) levels of service are summarized in Table 4.4-9. Under the No Project scenario, the above-listed assumptions were made as to transportation improvements. Based on the information provided by the City and the data contained in the East County Travel Demand Model, the long-term scenarios considered major improvements to the traffic network including the SR-4 Bypass and the extension of Laurel Road to Sellers Avenue. Assuming completion of the proposed transportation network improvements, only the intersection of West Cypress Road at O'Hara Avenue is forecast to degrade to unacceptable operations with the traffic growth estimated by the year 2030.

Year 2030 With Project Scenario

The Cumulative (2030) traffic volumes with the addition of traffic from the proposed project are shown in Figure 4.4-9 and the future lane configurations are shown in Figure 4.4-10. The resulting levels of service for the "Cumulative Plus Project" scenario are compared to the "No Project" scenario in Table 4.4-9.

Assuming completion of the proposed transportation network improvements, only the intersection of West Cypress Road at O'Hara Avenue is forecast to have unacceptable operations with the traffic growth estimated by the year 2030. As mentioned above, this intersection is forecast to operate at LOS F in the PM peak hour regardless of whether or not the proposed project is implemented. Although some of the intersections would be operating at a high LOS D

(near LOS E), all study intersections would have acceptable operations with the implementation of the recommended mitigation measures outlined in this chapter.

4.4-8 Cumulative impacts of the proposed project at the intersection at West Cypress Road and O'Hara Avenue.

Assuming completion of the proposed transportation network improvements, only the intersection of West Cypress Road and O'Hara Avenue is forecasted to have unacceptable LOS of F with the traffic growth estimated by the year 2030. The development of the proposed project would contribute to this cumulative condition. The degradation of the LOS of the intersection to unacceptable levels during a peak hour is considered a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level. These measures would minimize impacts to the intersection and change the LOS F to an LOS C during the evening peak hour.

4.4-8(a) *Applicant shall be responsible for the project's fair share of the cost to revise the Main Street southbound approach with two left-turn lanes, one through lane, and one shared through and right-turn lane. The project's fair share funding shall be submitted as determined by the City Engineer prior to the recording of final maps.*

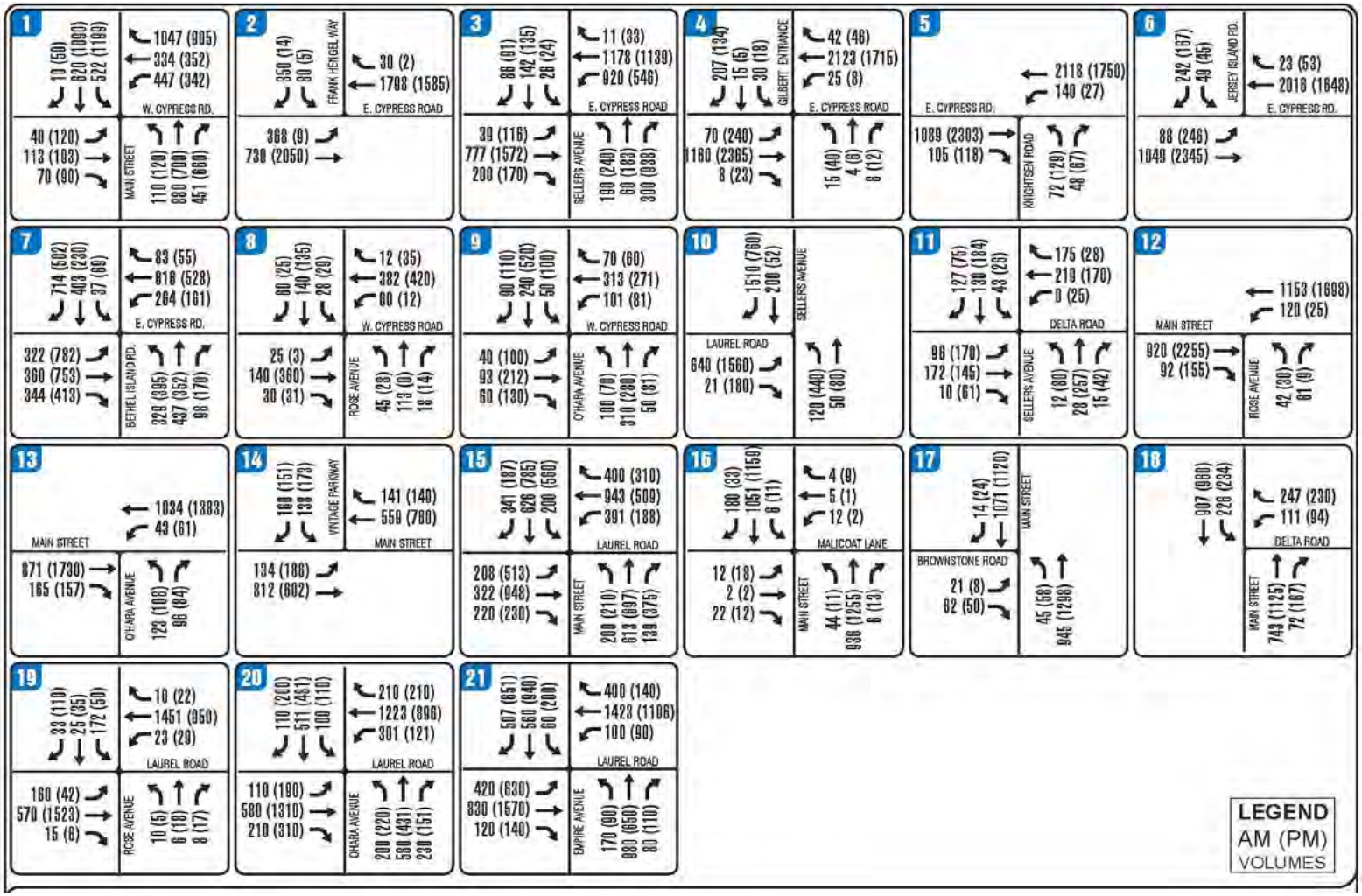
4.4-8(b) *Implement Mitigation Measure 4.4-1.*

Table 4.4-9
Cumulative and Cumulative Plus Project Intersection Operation

INTERSECTION		CONTROL	PEAK HOUR	CUMULATIVE NO PROJECT		CUMULATIVE + PROJECT	
				MEASURE	LOS	MEASURE	LOS
1	Main Street (SR-4) and Cypress Road	Traffic Signal	AM	v/c = 0.78	C	v/c = 0.83	D
			PM	v/c = 0.84	D	v/c = 0.9	D
2	East Cypress Road/Frank Hengel Way	Traffic Signal	AM	v/c = 0.74	C	v/c = 0.79	C
			PM	v/c = 0.52	A	v/c = 0.6	A
3	East Cypress Road/Sellers Avenue	Traffic Signal	AM	v/c = 0.68	B	v/c = 0.74	C
			PM	v/c = 0.77	C	v/c = 0.89	D
4	East Cypress Road/Main Project Entrance	Traffic Signal	AM	v/c = 0.78	C	v/c = 0.79	C
			PM	v/c = 0.77	C	v/c = 0.77	C
5	East Cypress Road/Knightsen Avenue	Traffic Signal	AM	v/c = 0.65	B	v/c = 0.66	B
			PM	v/c = 0.74	C	v/c = 0.76	C
6	East Cypress Road/Jersey Island Road	Traffic Signal	AM	v/c = 0.73	C	v/c = 0.73	C
			PM	v/c = 0.70	C	v/c = 0.71	C
7	East Cypress Road/Bethel Island Road	Traffic Signal	AM	v/c = 0.73	C	v/c = 0.74	C
			PM	v/c = 0.79	C	v/c = 0.8	C
8	West Cypress Road at Rose Avenue	Stop Sign	AM	10.7 sec	B	11.6 sec	B
			PM	10.5 sec	B	11.7 sec	B
9	West Cypress Road at O'Hara Avenue	Stop Sign	AM	10.6 sec	C	19.2 sec	C
			PM	**39.5 sec**	**E**	**>50 sec**	**F**
10	Sellers Avenue at Laurel Road	Traffic Signal	AM	v/c = 0.59	A	v/c = 0.64	B
			PM	v/c = 0.72	C	v/c = 0.78	C
11	Sellers Avenue at Delta Road	Traffic Signal	AM	v/c = 0.33	A	v/c = 0.34	A
			PM	v/c = 0.36	A	v/c = 0.37	A
12	Main Street (SR-4) at Rose Avenue	Traffic Signal	AM	v/c = 0.38	A	v/c = 0.39	A
			PM	v/c = 0.69	B	v/c = 0.73	C
13	Main Street (SR-4) at O'Hara Avenue	Traffic Signal	AM	v/c = 0.39	A	v/c = 0.41	A
			PM	v/c = 0.31	A	v/c = 0.35	A
14	Main Street (SR-4) at Vintage Parkway	Traffic Signal	AM	v/c = 0.35	A	v/c = 0.36	A
			PM	v/c = 0.46	A	v/c = 0.47	A
15	Main Street (SR-4) at Laurel Road	Traffic Signal	AM	v/c = 0.76	C	v/c = 0.83	D
			PM	v/c = 0.80	C	v/c = 0.89	D
16	Main Street (SR-4) at Malicoat Avenue	Traffic Signal	AM	v/c = 0.41	A	v/c = 0.42	A
			PM	v/c = 0.39	A	v/c = 0.41	A
17	Main Street (SR-4) at Brownstone Rd	Traffic Signal	AM	v/c = 0.38	A	v/c = 0.39	A
			PM	v/c = 0.41	A	v/c = 0.43	A
18	Main Street (SR-4) at Delta Road	Traffic Signal	AM	v/c = 0.45	A	v/c = 0.45	A
			PM	v/c = 0.57	A	v/c = 0.59	A
19	Laurel Road at Rose Avenue	Traffic Signal	AM	v/c = 0.62	B	v/c = 0.67	B
			PM	v/c = 0.47	A	v/c = 0.54	A
20	Laurel Road at O'Hara Avenue	Traffic Signal	AM	v/c = 0.83	D	v/c = 0.87	D
			PM	v/c = 0.83	D	v/c = 0.9	D
21	Laurel Road at Empire Avenue	Traffic Signal	AM	v/c = 0.87	D	v/c = 0.9	D
			PM	v/c = 0.85	D	v/c = 0.88	D

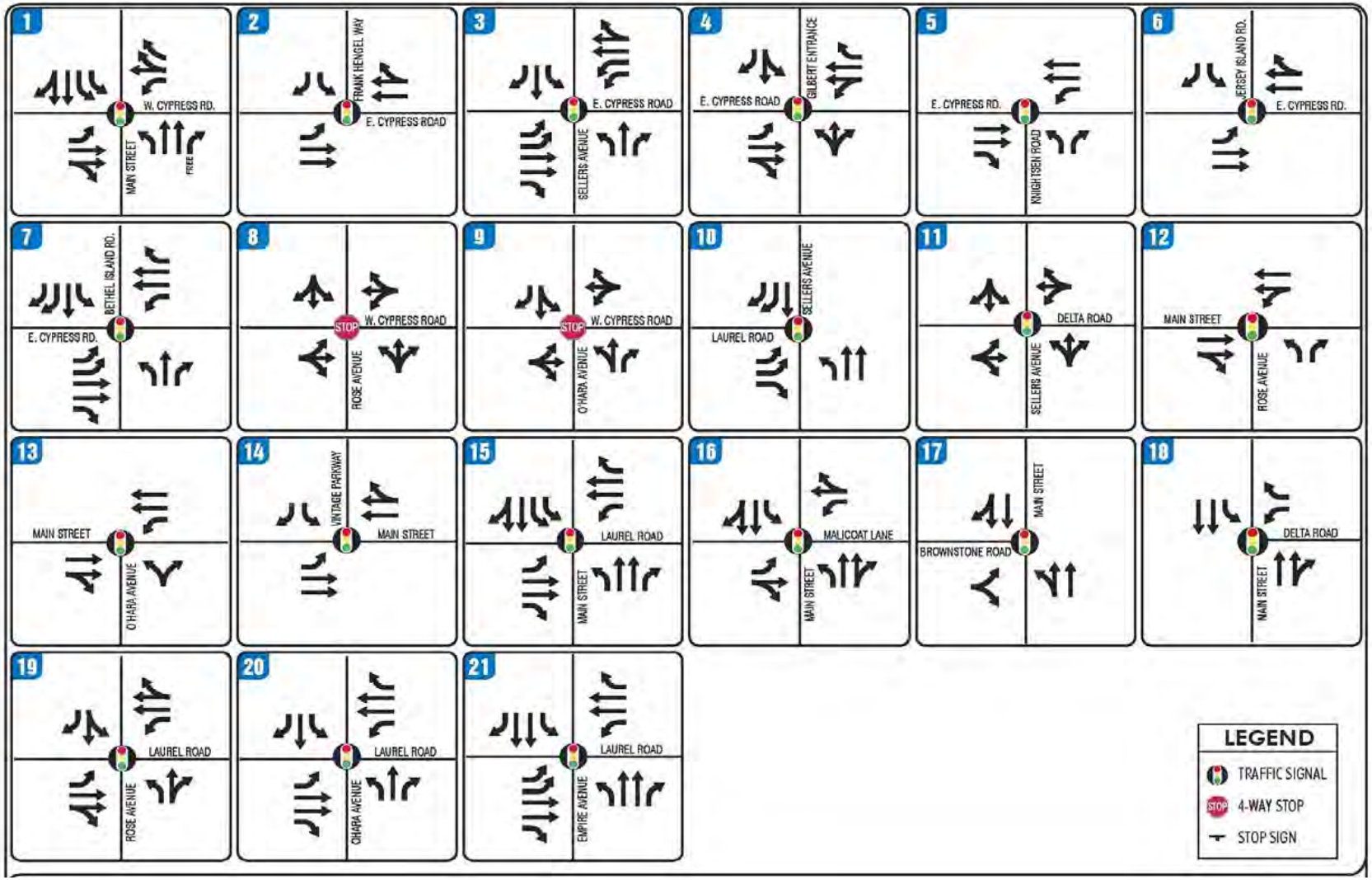
Source: Abrams Associates Inc., February 2007

Figure 4.4-9
AM (PM) Cumulative Plus Project Volumes



Source: Abrams Associates Inc., February 2007

Figure 4.4-10
Cumulative Plus Project Lane Configurations



Source: Abrams Associates Inc., February 2007

Endnotes

[1] Abrams Associates Traffic Engineering, *Gilbert Traffic Study*. February 2007.
[2] East Cypress Road Specific Plan – Draft Traffic Study, Fehr & Peers Associates, March, 2005

4.5 AIR QUALITY

4.5 AIR QUALITY

INTRODUCTION

This chapter describes the effects of the proposed Gilbert Property project on local and regional air quality. The chapter discusses existing air quality, construction-related impacts, direct and indirect emissions associated with the project, the impacts of these emissions on both the local and regional scale, and mitigation measures to reduce or eliminate any identified significant impacts. This chapter is based upon on an *Air Quality Impact Analysis for the Proposed Dutch Slough Properties Project*[1] prepared by Don Ballanti (See Appendix E of this Draft EIR).

ENVIRONMENTAL SETTING

Air Basin Characteristics

The City of Oakley is located on the south side of the San Joaquin River Delta, east of the Carquinez Strait, between the Bay Area and the Central Valley. The climate and air quality in Oakley is greatly influenced by both the Bay Area and Central Valley. Oakley is located at the eastern boundary of the nine-county San Francisco Bay Area Air Basin. Oakley is a few miles west of San Joaquin County, which is part of the eight-county San Joaquin Valley Air Basin.

Oakley has a relatively low potential for air pollution, given the persistent strong winds that are typical of the area. Wind records from the closest wind-measuring sites show a strong predominance of westerly winds. Average wind speed is relatively high and the frequency of calm winds is quite low. The winds dilute pollutants and transport them away from the area, so that emissions released in the project area have more influence on air quality in the Sacramento and San Joaquin Valleys than they do locally. However, the City of Oakley is located downwind of the greater Bay Area. The proximity to the Bay Area negatively affects the air quality of the City of Oakley.

Ambient Air Quality Standards

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards for each contaminant represent safe levels that avoid specific adverse health effects. The ambient air quality standards cover what are called "criteria" pollutants because the effects of each pollutant are described in the criteria documents. Table 4.5-1 identifies the major pollutants, characteristics, health effects and typical sources. The federal and California ambient air quality standards are summarized in Table 4.5-2.

Table 4.5-1
Major Criteria Pollutants

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

Source: Don Ballanti, December 2005.

Table 4.5-2
Ambient Air Quality Standards

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

ppm = Parts per Million
ug/m^3 = Micrograms per Cubic Meter
Source: California Air Resources Board, *Ambient Air Quality Standards*, May 17, 2006.

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

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

Ozone

Ozone is the most prevalent of a class of photochemical oxidants formed in the urban atmosphere. The creation of ozone is a result of a complex chemical reaction between reactive organic gases (ROG) and nitrogen oxide (NO_X) emissions in the presence of sunshine. Unlike other pollutants, ozone is not released directly into the atmosphere from any sources. Factories, automobiles, and evaporation of solvents and fuels are the major sources of ozone precursors. The health effects of ozone are difficulty breathing, lung tissue damage, and eye irritation.

Particulate Matter

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

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

Particles greater than 10 microns in diameter can cause irritation in the nose, throat, and bronchial tubes. Natural mechanisms remove many of these particles, but smaller particles are able to pass through the body's natural defenses and the mucous membranes of the upper respiratory tract and enter into the lungs. The particles can damage the alveoli, tiny air sacs responsible for gas exchange in the lungs. The particles may also carry carcinogens and other toxic compounds, which adhere to the particle surfaces and can enter the lungs.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, poisonous gas produced by incomplete burning of carbon-based fuels such as gasoline, oil, and wood. When CO enters the body, the CO combines with chemicals in the body, which prevents blood from carrying oxygen to cells, tissues, and organs. Symptoms of exposure to CO can include problems with vision, reduced alertness, and general reduction in mental and physical functions. Exposure to CO can result in chest pain, headaches, and reduced mental alertness.

Nitrogen Oxide

Nitrogen oxides (NO_X) are produced from burning fuels, including gasoline and coal. Nitrogen oxides react with ROG (found in paints and solvents) to form smog, which can harm health, damage the environment, and cause poor visibility. Additionally, NO_X emissions are a major component of acid rain. Health effects related to NO_X include lung irritation and lung damage.

Sulfates

Sulfates (SO_X) are colorless gases and constitute a major element of pollution in the atmosphere. SO_X is commonly produced by fossil fuel combustion. In the atmosphere, SO_X is usually

oxidized by ozone and hydrogen peroxide to form sulfur dioxide and trioxide (a pollutants.) If SO_X is present during condensation, acid rain may occur. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. Children, the elderly, those with chronic lung disease, and asthmatics are especially susceptible to these effects.

Toxic Air Contaminants

In addition to the criteria pollutants (Table 4.5-1), Toxic Air Contaminants (TACs) are also a category of environmental concern. Toxic Air Contaminants are present in many types with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different TACs. In terms of health risks, the most volatile contaminants are diesel particulate, benzene, formaldehyde, 1,3-butadiene and acetaldehyde.

Public exposure to TACs can result from emissions from normal operations as well as accidental releases. Heath effects of TACs include cancer, birth defects, neurological damage, and death.

Attainment Status and Regional Air Quality Plans

The Federal Clean Air Act and the California Clean Air Act require all areas of California to be classified as attainment, non-attainment, or unclassified as to their status with regard to the national and/or State Ambient Air Quality Standards.

The Federal Clean Air Act of 1990 and the California Clean Air Act of 1988 require that the CARB, based on air quality monitoring data, designate portions of the State where the federal or State ambient air quality standards are not met as "nonattainment areas." Because of the differences between the national and State standards, the designation of nonattainment areas is different under the federal and State legislation.

The Bay Area is currently designated as a nonattainment area for 1-hour ozone standard. However, in April 2004, U.S. EPA made a final finding that the Bay Area has attained the national 1-hour ozone standard. The finding of attainment does not mean the Bay Area has been reclassified as an attainment area for the 1-hour standard. The region must submit a re-designation request to EPA in order to be reclassified as an attainment area.

The U.S. EPA has classified the San Francisco Bay Area as a nonattainment area for the federal 8-hour ozone standard. The Bay Area is designated as attainment for the annual condition, and unclassifiable for the 24-hour federal $PM_{2.5}$ standards.

Under the California Clean Air Act, Contra Costa County is a nonattainment area for ozone and particulate matter (PM_{10} and $PM_{2.5}$). The County is either attainment or unclassified for other pollutants. The California Clean Air Act requires local air pollution control districts to prepare air quality attainment plans. These plans must provide for district-wide emission reductions of

five percent per year averaged over consecutive three-year periods or, provide for adoption of "all feasible measures on an expeditious schedule."

Local Air Quality Monitoring

The Bay Area Air Quality Management District (BAAQMD) has for many years operated a multi-pollutant monitoring site in nearby Bethel Island. Table 4.5-3 shows historical occurrences of pollutant levels exceeding the state/federal ambient air quality standards for the three-year period 2004-2006. The number of days that each standard was exceeded is shown.

Table 4.5-3 shows that all federal ambient air quality standards are met in the Oakley area with the exception of the 8-hour ozone standard. Additionally, the State ambient standards of ozone and PM_{10} are occasionally exceeded.

Table 4.5-3
Air Quality Data Summary for Bethel Island, 2004-2006

Pollutant	Standard	Days Standard Exceeded During:		
		2004	2005	2006
Ozone	1-Hour State	1	0	9
	1-Hour Federal	0	0	0
	8-Hour Federal	0	0	1
Carbon Monoxide	8-Hour State and Federal	0	0	0
	1-Hour State	0	0	0
Nitrogen Dioxide	1-Hour State	0	0	0
Sulfur Dioxide	1-Hour State	0	0	0
	24-Hour State	0	0	0
PM_{10}	24-Hour State	0	1	0
	24-Hour Federal	0	0	0

Source: Air Resources Board, Aerometric Data Analysis and Management (ADAM), 2006. (http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start).

Sensitive Receptors

The Bay Area Air Quality Management District (BAAQMD) defines sensitive receptors as facilities where sensitive receptor population groups (children, the elderly, the acutely ill, and the chronically ill) are likely to be located. These land uses include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. Sensitive land uses near the project site include the Cypress Grove subdivision which is currently under construction, Delta Vista Middle School, and Iron House Elementary School located directly west of the project site. Scattered single-family homes are located south of the site across Cypress Road.

REGULATORY CONTEXT

Air quality is monitored through the efforts of various federal, State, and local government agencies. These agencies work jointly and individually to improve air quality through legislation,

regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for regulating and improving air quality within the Oakley area are discussed below.

Federal

U.S. Environmental Protection Agency (EPA)

The U.S. EPA is responsible for enforcement of National Ambient Air Quality Standards (NAAQS). The EPA has adopted policies requiring states to prepare State Implementation Plans (SIP) that demonstrate attainment and maintenance of the NAAQS. After a review of the SIP, the EPA will further classify non-attainment areas according to a District's projected date of attainment. Districts that project attainment of standards in three to five years would be classified as near-term non-attainment, whereas Districts that cannot meet standards within five years would be classified as long-term non-attainment. For an area to be classified as near-term non-attainment, the District would be required to demonstrate that pollutant reductions of three-percent-per-year are obtainable and that maintenance of standards could occur for ten years.

In 1997, the EPA adopted new national air quality standards for ground-level ozone and for fine particulate matter ($PM_{2.5}$). These standards determined that the existing 1-hour ozone standard of 0.12 parts-per-million (ppm) would be phased out and replaced by an 8-hour standard of 0.08 ppm. New national standards for fine particulate matter (diameter 2.5 microns or less) were established for 24-hour and annual averaging periods.

The established PM_{10} standards were retained, but the method and form for determining compliance with the standards were revised. Implementation of the new ozone and Particulate Matter standards was delayed by a lawsuit. On May 14, 1999 the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the Clean Air Act as applied in setting the new public health standards for ozone and particulate matter was unconstitutional and an improper delegation of legislative authority to the Environmental Protection Agency. The United States Supreme Court revised the District of Columbia Circuit's decision in 2001, clearing the way for implementation of the new standards. During the interim period, the California Clean Air Resources Board developed recommended designations for California air basins, proposing that Contra Costa County be designated as non-attainment for the new 8-hour ozone standard. Designations for $PM_{2.5}$ have not been made, however, a minimum three-year monitoring period is required.

State

California Air Resources Board (CARB)

The CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing Calfiornia's own air quality legislation called the California Clean Air Act (CCAA) adopted in 1988. The CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the U.S. EPA.

The CCAA requires that air quality plans be prepared for areas of the State that have not met State air quality standards for ozone, carbon monoxide, nitrogen dioxide, and sulfur dioxide. Areas that met standards by 1994 were classified as moderate, those that attained standards between 1994 and 1997 were classified as serious, and those that could not attain standards until after 1997 were classified as severe. In order to implement the transportation-related provisions of the CCAA, local air pollution control districts have been granted explicit authority to adopt and implement transportation controls.

Local

Bay Area Air Quality Management District (BAAQMD)

The Bay Area Air Quality Management District (BAAQMD) has permitting authority for stationary air pollutant sources in the region and operates a total of seven air monitoring sites within Contra Costa County. The BAAQMD has prepared guidelines to assist in CEQA review. The BAAQMD maintains annual daily thresholds for ROG, NO_x and PM_{10}. Under these guidelines, any proposed project that would have a significant air quality impact would also be considered to have a significant cumulative air quality impact.

City of Oakley General Plan

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

Air Quality

Goal 6.2 Maintain or improve air quality in the City of Oakley.

Policy 6.2.1 Support the principles of reducing air pollutants through land use, transportation, and energy use planning.

Policy 6.2.2 Encourage transportation modes that minimize contaminant emissions from motor vehicle use.

Policy 6.2.3 Interpret and implement the General Plan to be consistent with the regional Bay Area Air Quality Management Plan (AQMP), as periodically updated.

Policy 6.2.4 Ensure location and design of development projects so as to conserve air quality and minimize direct and indirect emissions of air contaminants.

Policy 6.2.5 Encourage air quality improvement through educational outreach programs, such as Spare the Air Day.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

According to California Environmental Quality Act (CEQA) Guidelines, an air quality impact may be considered significant if the proposed project's implementation would result in, or potentially result in, conditions, which violate any existing local, state or federal air quality regulations. The BAAQD provides the standards of significance for the Bay Area, which include the following:

- Carbon monoxide (CO) concentrations in excess of the State Ambient Air Quality Standard of 9 parts per million (ppm) averaged over 8 hours or 20 ppm for 1 hour.
- Generation of criteria air pollutant emissions in excess of the BAAQMD annual or daily thresholds. The current thresholds are 15 tons/year or 80 pounds/day for Reactive Organic Gases (ROG), Nitrogen Oxides (NO_x) or PM_{10}. Any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact.
- Exposure of sensitive receptors or the general public to substantial levels of pollutant concentrations.
- Exposure of substantial numbers of members of the public to objectionable odors.

Despite the establishment of both federal and state standards for $PM_{2.5}$ (particulate matter, 2.5 microns), the BAAQMD has not developed a threshold of significance for this pollutant. For this analysis, $PM_{2.5}$ impacts would be considered significant if project emissions of PM_{10} exceed 80 pounds per day.

Method of Analysis

Construction and operational emissions generated by the proposed projects were estimated by the URBEMIS-2002 computer program[2], which estimates the emissions resulting from various land-use development projects. These emissions were compared to the thresholds of significance recommended by the BAAQMD.

A screening-level form of the CALINE-4 program was used to predict concentrations. Normalized concentrations for each roadway size (two lanes, four lanes, etc.) are adjusted for the two-way traffic volume and emission factor. Calculations were made for a receptor at a corner of the intersection, located at the curb. Emission factors were derived from the CARB EMFAC7-2002 computer program based on a 2006 and 2030 Bay Area vehicle mix.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.5-1 Impacts related to construction dust emissions.

The BAAQMD significance threshold for construction dust impacts is based on the appropriateness of construction dust controls. The BAAQMD guidelines provide feasible control measures for construction emission of PM_{10}. The implementation of appropriate construction controls would result in air pollutant and emissions that would be considered less-than-significant during the construction process.

Construction activities such as demolition, clearing, excavation and grading operations, construction vehicle traffic, and wind blowing over exposed earth would generate fugitive particulate matter emissions that would temporarily affect local air quality.

Construction dust would affect local air quality during implementation of the proposed project. The dry, windy climate of the area during the summer months creates a high potential for dust generation when and if underlying soils are exposed to the atmosphere. The proposed project would involve substantial excavation and earthmoving in the grading for the construction of the drainage basins on the project site. The movement of earth on the site is a construction activity with a high potential for creating air pollutants. After grading of the site, dust would continue to affect local air quality during construction of the project.

According to the *BAAQMD CEQA Guidelines*, emissions of ozone precursors (ROG and NO_x) and carbon monoxide related to construction equipment are already included in the emission inventory that is the basis for regional air quality plans, and thus are not expected to impede attainment or maintenance of ozone and carbon monoxide standards in the Bay Area. Thus, the effects of construction activities would be increased dustfall and locally elevated levels of PM_{10}, and thus $PM_{2.5}$, downwind of construction activity. Construction dust has the potential for creating a nuisance at nearby properties, resulting in a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce any impacts related to construction dust emissions to a *less-than-significant* level.

4.5-1 *Consistent with guidance from the BAAQMD, and prior to issuance of a grading permit, the applicant shall incorporate the following mitigation measures into the construction contract documents, which shall be submitted for the review and approval of the City Engineer:*

- *Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers or dust palliatives;*
- *Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard;*

- *Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;*
- *Sweep daily (preferably with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality;*
- *Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets;*
- *Apply non-toxic soil stabilizers to inactive construction areas;*
- *Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);*
- *Limit traffic speeds on unpaved roads to 15 mph;*
- *Install sandbags or other erosion control measures to prevent silt runoff to public roadways; and*
- *Replant vegetation in disturbed areas as quickly as possible.*

The above measures include all feasible measures for construction emissions identified by the Bay Area Air Quality Management District for large sites.

4.5-2 Impacts related to increased TAC emissions as a result of construction.

In 1998 the CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[3] High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truckstop) were identified as having the highest associated risk.

Health risks from TACs are a function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks. Additionally, construction-related sources are mobile and transient in nature, and the bulk of the emission occurs within the project site at a substantial distance from nearby receptors. Because of its short duration and the fact that nearby sensitive receptors would not be down-wind of construction activity when the wind is from the prevailing west direction, health risks from construction emissions of diesel particulate would be a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

4.5-3 Impacts relating to effects of increased traffic and carbon monoxide concentrations.

The project would change traffic on the local street network, changing local carbon monoxide levels along roadways used by project traffic. In the Bay Area, automobiles

are the primary source of carbon monoxide generation, and as a result, concentrations of this gas are highest near intersections of major roads.

Carbon monoxide concentrations under worst-case meteorological conditions have been predicted for the intersections most impacted by project traffic and/or operating at the lowest level of service. PM peak hour traffic volumes were applied to a screening form of the CALINE-4 dispersion model to predict maximum 1- and 8-hour concentrations near these intersections under the worst-case assumption that project traffic changes would occur in 2007 (See Attachment 1 in Appendix E of this Draft EIR for details regarding the CALINE-4 model.) The model results were used to predict the maximum 1-and 8-hour concentrations, corresponding to the 1-and 8-hour averaging times specified in the State and federal ambient air quality standards for carbon monoxide.

Table 4.5-4 shows the results of the CALINE-4 analysis for the peak 1-hour and 8-hour traffic periods in parts per million (ppm). The 1-hour values are to be compared to the federal 1-hour standard of 35 ppm and the State standard of 20 ppm. The 8-hour values in Table 4.5-4 are to be compared to the State and federal standard of 9 PPM.

Table 4.5-4
Worst Case Carbon Monoxide Concentrations Near Selected Intersections,

Intersection	Existing (2006)		Existing + Background (2006)		Existing + Background+ Project (2006)		Cumulative + Project (2030)	
	1-Hr	8-Hr	1-Hr	8-Hr	1-Hr	8-Hr	1-Hr	8-Hr
Laurel Road/ Empire Avenue	3.8	2.8	5.8	4.2	6.0	4.3	3.4	2.5
Laurel Road/ O'Hara Avenue	3.7	2.7	4.4	3.3	4.7	3.5	2.9	2.1
Laurel Road/ Main Street	4.7	3.4	6.5	4.7	7.0	5.0	3.0	2.2
Main Street/ Cypress Road	5.6	4.0	9.1	6.5	10.7	7.7	3.3	2.4
E. Cypress Road/Sellers Avenue	4.7	3.4	6.9	5.0	8.2	5.9	3.1	2.3
Main Street/ O'Hara Avenue	5.3	4.2	8.3	5.9	8.9	6.4	3.0	2.2
Most Stringent Standard	20.0	9.0	20.0	9.0	20.0	9.0	20.0	9.0

All measurements are in parts per million (PPM).
Source: Don Ballanti, December 2005.

Table 4.5-4 shows that existing predicted concentrations near the intersections meet the 1-hour and 8-hour standards. Traffic from approved and pending projects would increase concentrations by up to 3.5 ppm. Traffic from the proposed project would increase concentrations by up to 1.6 ppm. Concentrations with project and cumulative traffic growth in 2030 would also not exceed the State or federal ambient air quality standards.

Because project traffic would not cause any new violations of the one-hour or 8-hour standards for carbon monoxide, nor contribute substantially to an existing or projected violation, project impacts on local carbon monoxide concentrations are considered to be ***less-than-significant***.

Mitigation Measure(s)
None required.

4.5-4 Impacts related to regional air pollutant emissions as a result of the proposed project.

Vehicle trips generated by the project would result in air pollutant emissions affecting the entire San Francisco Bay Air Basin. Gas powered lawn mowers in residential areas, such as the proposed project; have been found to have notable contributions to the degradation of air quality. The residential use of gas-powered lawn mowers will be discouraged on the Gilbert Property by the Covenants, Conditions and Restrictions (CC&R), and the design of the proposed project would include electric outlets on the exterior of residences to allow the use of electric lawn mowers. Operational emissions associated with project have been calculated using the URBEMIS-2002 emission model, which includes the presence of gas-power lawn mowers in the calculations.

The incremental daily emission increase associated with project land uses is identified in Table 4.5-5 for reactive organic gases and oxides of nitrogen (two precursors of ozone) and PM_{10}. The BAAQMD has established thresholds of significance for ozone precursors and PM_{10} of 80 pounds per day. Proposed project emissions shown in Table 4.5-5 would not exceed these thresholds of significance. Therefore, because the proposed project's CC&Rs restrict the use of gas-powered lawn mowers within the proposed residential development, the impacts related to the release of air pollutant emissions would be further reduced, and the proposed project would have a ***less-than-significant*** effect on regional air quality.

Mitigation Measure(s)
None required.

Table 4.5-5
Project Regional Emissions (in Pounds Per Day)

	Reactive Organic Gases	Nitrogen Oxides	PM_{10}
Gilbert Property	40.6	41.38	46.5
BAAQMD Significance Threshold	80.0	80.0	80.0

Source: Don Ballanti, December 2005.

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.5-5 Impacts relating to the cumulative effects of the proposed project on air quality.

The cumulative air quality impacts of development projects are primarily related to automobile traffic and areas sources of pollutants such as fuel combustion for heating, maintenance equipment emissions, certain consumer products, evaporation of solvents, etc. The BAAQMD considers these types of emissions to be secondary in importance to vehicle emissions, so the recommended BAAQMD thresholds of significance are to be compared to vehicular emissions only.

Emissions from development projects have several cumulative impacts. Growth in emissions will delay attainment of the ambient air quality standards for which the region is non-attainment (ozone, particulate matter), contribute to visibility reduction, and contribute to mobile-source TAC concentrations.

Because ozone, particulate matter and some constituents of ROG that are also TACs have been shown to be correlated with adverse heath effects, cumulative emissions increases in the region would have potential cumulative health effects. Studies have shown that children who participated in several sports and lived in communities with high ozone levels were more likely to develop asthma than active children living in areas with less ozone pollution. Other studies have found a positive association between some volatile organic compounds and symptoms in asthmatic children. A large body of evidence has shown significant associations between measured levels of particulate matter outdoors and worsening of both asthma symptoms and acute and chronic bronchitis. However, predicting increases in severity of disease, hospital visits or deaths from respiratory diseases such as asthma, bronchitis or lung cancer is not possible because of the following reasons:

- Estimating long-term concentrations of pollutants such as ozone, the TAC components of ROG, or particulate matter (PM_{10} and $PM_{2.5}$) resulting from an indirect source such as the project is not currently possible; and
- Dose-response relationships are lacking that would allow a quantitative analysis of health effects.

In recognition of the incremental health effects associated with these pollutants, air quality management districts have established thresholds for each pollutant, which indicate the limits of acceptability in terms of effect on health. The proposed project would result in an increase in total pollutants in an area, which is already in non-attainment. The proposed project's cumulative contribution to the non-attainment area would be cumulative considerable. Based on the BAAQMD cumulative impact threshold, this project would have a ***significant*** cumulative air quality impact.

Mitigation Measure(s)

The implementation of the following mitigation measure would reduce the magnitude of the cumulative project-related regional emissions by 10 to 20 percent. Even with this reduction, project emissions would contribute to the cumulative non-attainment condition, which currently exceeds the BAAQMD significance threshold of 80 pounds per day, thus contributing to cumulative air quality impacts. Therefore, the impacts would remain *significant and unavoidable*.

4.5-5 Implement Mitigation Measure 4.5-1.

Endnotes

[1] Don Ballanti. *Air Quality Impact Analysis for the Proposed Dutch Slough Properties Project*. December 2005.
[2] Jones and Stokes Associates, *Software User's Guide: URBEMIS2002 for Windows with Enhanced Construction Module*, Version 7.4. May 2003.
[3] California Air Resources Board. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October 2000.

4.6 NOISE

4.6 NOISE

INTRODUCTION

This section discusses the existing noise environment in the project vicinity, and identifies potential impacts and mitigation measures related to development of the Gilbert Property project in the City of Oakley, California. Specifically, this section analyzes potential noise impacts, due to and upon development of the project, relative to applicable noise criteria and to the existing ambient noise environment. In addition, the analysis addresses the impacts of construction-related noise. The noise chapter is based upon noise analyses prepared by Illingworth and Rodkin, Inc[1] (see Appendix F of this Draft EIR), as well as the City of Oakley General Plan[2].

ENVIRONMENTAL SETTING

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

In addition to the concepts of pitch and loudness, several noise measurement scales are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement that indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. A relationship exists between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical noise terms are defined in Table 4.6-1.

Several methods exist for characterizing sound. The most common in California is the *A-weighted sound level* or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 4.6-2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. The energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

Table 4.6-1
Definitions of Acoustical Terms Used in this Report

Term	Definitions
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, Leq	The average A-weighted noise level during the measurement period. The hourly Leq used for this report is denoted as dBA $L_{eq[h]}$.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels in the night between 10:00 pm and 7:00 am.
Day/Night Noise Level, L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

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

Table 4.6-2
Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 300 meters		Rock concert
	110 dBA	
Pile driver at 20 meters	100 dBA	
		Night club with live music
	90 dBA	
Large truck pass by at 15 meters		
	80 dBA	Noisy restaurant
		Garbage disposal at 1 meter
Gas lawn mower at 30 meters	70 dBA	Vacuum cleaner at 3 meters
Commercial/Urban area daytime		Normal speech at 1 meter
Suburban expressway at 90 meters	60 dBA	
Suburban daytime		Active office environment
	50 dBA	
Urban area nighttime		Quiet office environment
	40 dBA	
Suburban nighttime		
Quiet rural areas	30 dBA	Library
		Quiet bedroom at night
Wilderness area	20 dBA	
Most quiet remote areas	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

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

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus one dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus one to two dBA.

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

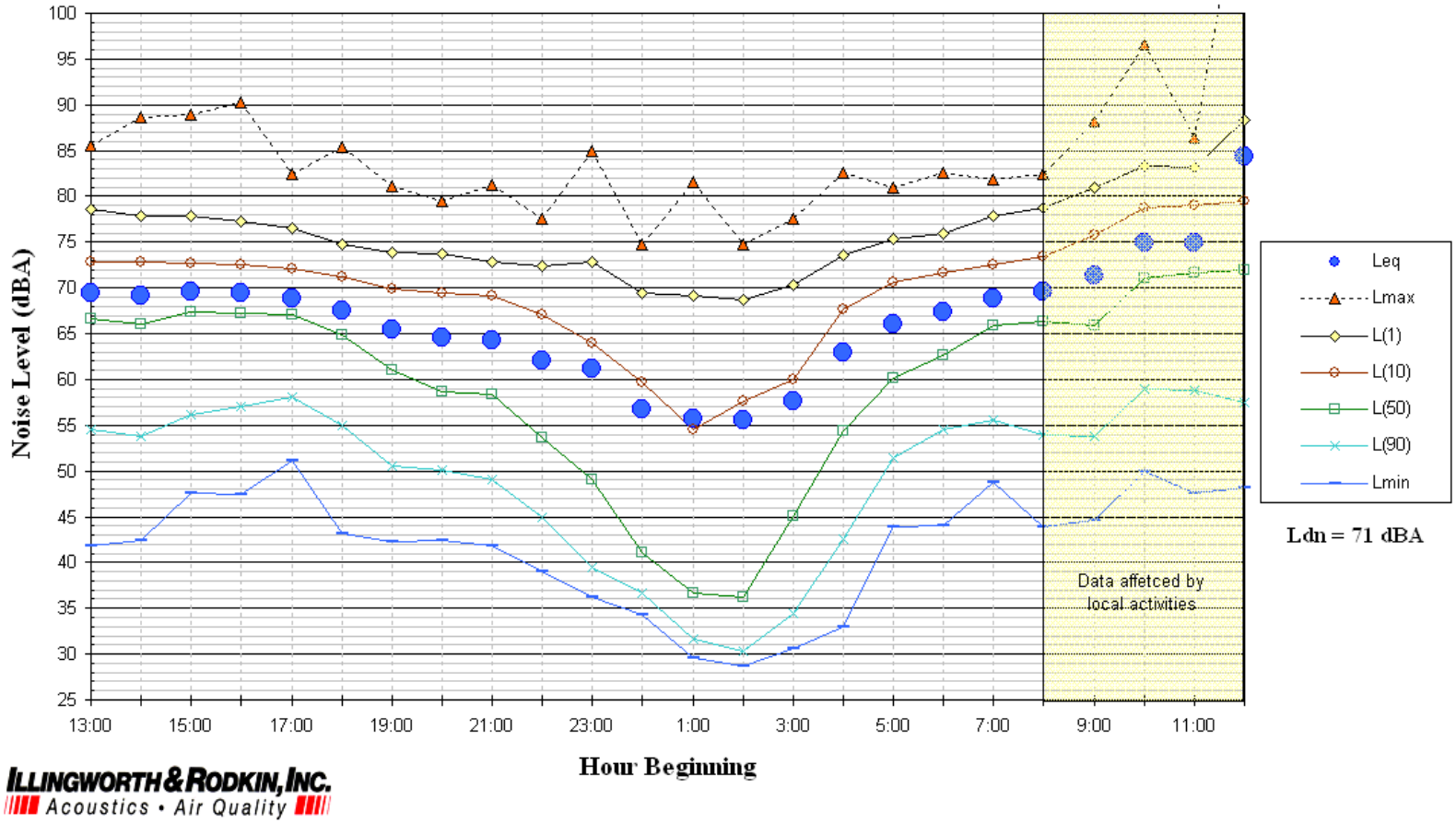
Existing Noise Environment

The proposed 120-acre Gilbert Property project site is located in the City of Oakley, Contra Costa County, California (See Figure 3-1, Regional Location Map, and Figure 3-2, Project Location Map in Chapter 3 of this Draft EIR). The Gilbert Property project site is situated north of Cypress Road, and east of the Emerson property, the Cypress Grove development, Delta Vista Middle School, and Iron House Elementary School. The project is bounded on the north by the Contra Costa Water District Canal (CCWD/USBR Canal), which separates the project site from the open space acreage to the north, which is currently owned by the State of California. A 55-acre portion of land immediately to the north of the CCWD/USBR canal and the project site at the end of Sellers Avenue is held in escrow, pursuant to a Memorandum of Understanding and Development Agreement, for future conveyance to the City of Oakley as a community park.

Currently, most of the area surrounding the proposed project site is used for agricultural purposes. Scattered existing residential homes are also present along Cypress Road and Sellers Avenue. The major existing noise sources in the area are traffic on Cypress Road, Sellers Avenue, and Knightsen Avenue. Other roadways in the area carry little traffic and are not significant noise sources. The noise measurements that contributed to the noise studies were made at locations on and in the vicinity of the project site.

A continuous 24-hour noise measurement was conducted on Cypress Road near Machado Lane from 1:00 pm on December 15, 2004 until 1:00 pm on December 16, 2004. The measurement was conducted at a distance of 75 feet from the centerline of Cypress Road. The terrain in this area is flat and the traffic travels at speeds of 50 to 60 mph. The 24-hour average Ldn at this location was measured to be 71 dB. Data gathered at this measurement site is presented in Figure 4.6-1.

Figure 4.6-1
Noise Levels at LT-1 75 Feet from East Cypress Road



Based on the traffic counts done for the transportation section of this EIR, the current average daily traffic volume in this location is 10,000 to 11,000 vehicles per day.

A 24-hour noise measurement was also conducted on Sellers Avenue south of Cypress Road. The measurement was conducted at a distance of 65 feet from the centerline of the roadway. The measurement was conducted between November 19 and November 22, 2004. The Ldn at this location was measured to be 68 dB. Data gathered at this measurement site is presented in Figure 4.6-2. Current average daily trips are about 4,500 vehicles per day.

A spot measurement was made on Knightsen Avenue south of Cypress Road at a distance of 50 feet from the centerline of Knightsen Avenue, typical of the existing setback of residences along Knightsen Avenue. The mid-afternoon average noise level was measured at 65 dBA and the Ldn is estimated to be 67 dBA at this distance. Knightsen Avenue currently carries about 3,000 vehicles per day.

Farther from these major streets, noise levels decrease significantly. Noise levels drop off at a rate of 3 to 4.5 decibels per every doubling of distance from the roadway. The City's goal for noise levels not in excess of an Ldn of 65 dB in outdoor use areas in new residential development is currently met at a distance of 220 feet from the center of Cypress Road, 120 feet from the centerline of Sellers Avenue and 80 feet from the center of Knightsen Avenue. A number of homes exist within these distances along Cypress Road, Sellers Avenue, and Knightsen Avenue. Table 4.6-3 below identifies the existing noise level contour distances from roadway centers in the project area.

Table 4.6-3
Existing Noise Level Contour Distances from Roadway Center

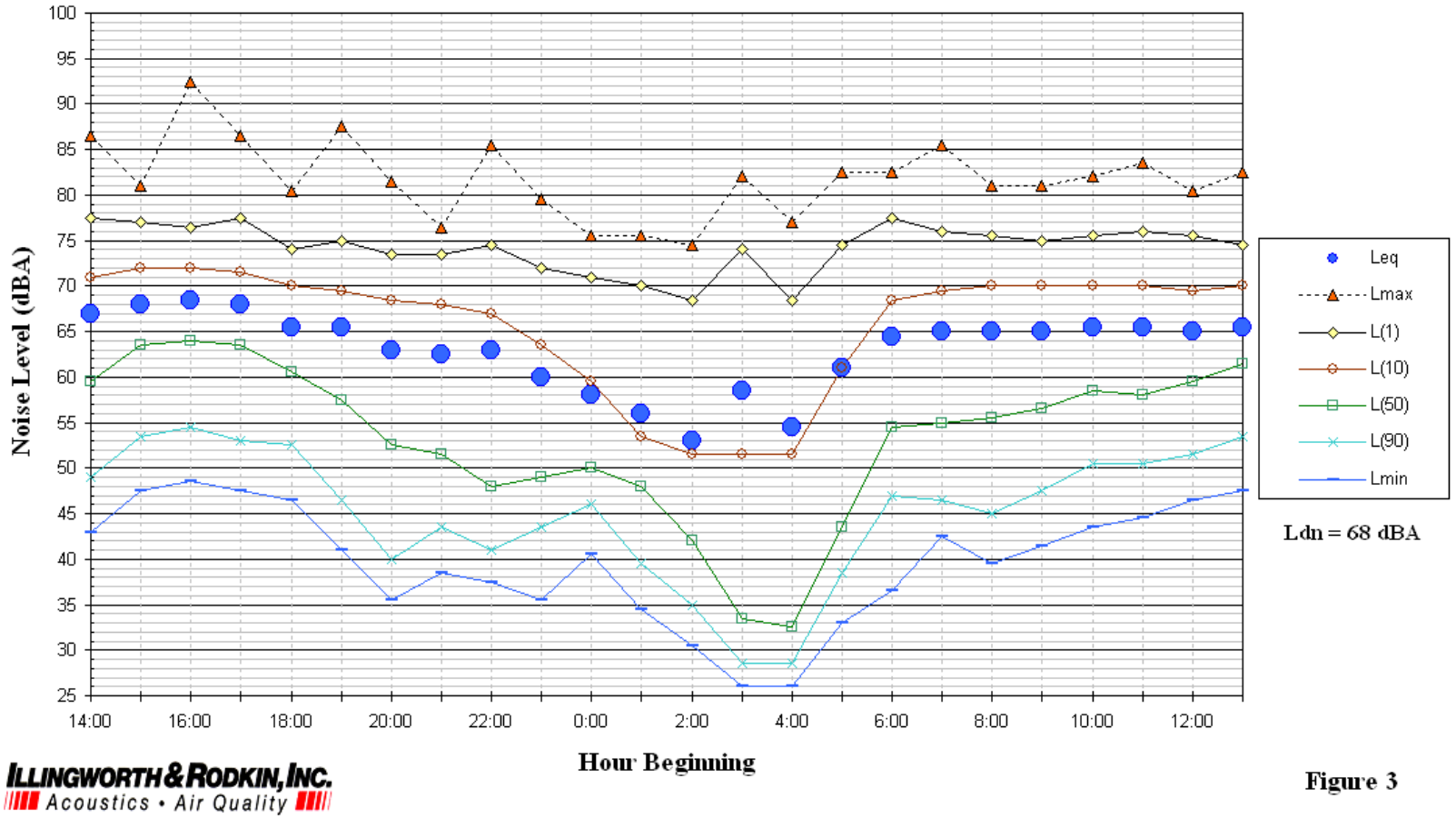
Roadway	70 L_{DN}	65 L_{dn}	60 L_{dn}
Cypress Road	100 ft.	220 ft.	475 ft.
Sellers Avenue	--[1]	120 ft.	260 ft.
Knightsen Avenue	--	80 ft.	185 ft.

Source: Illingworth & Rodkin, 2006.
Note: 1. Noise contour within roadway right-of-way

REGULATORY CONTEXT

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

Figure 4.6-2
Noise Levels at LT-2 75 Feet from Center of Sellers Avenue



ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality

Figure 3

State Regulations

California Environmental Quality Act

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

Local Regulations

City of Oakley General Plan

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

Noise Element

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

Policy 9.1.1 New development shall use the land use compatibility table shown in Figure 9.1 [See Figure 4.6-3] and the standards contained within Tables 9.1 and 9.3 [See Table 4.6-4] for determining noise compatibility.

Policy 9.1.3 Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 9-1 [See Table 4.6-4] as measured immediately within the property line of lands designated for noise-sensitive uses.

Policy 9.1.5 Noise created by new transportation noise sources shall be mitigated so as not to exceed the levels specified in Table 9-3 [See Table 4.6-4] at outdoor activity areas or interior spaces of existing noise-sensitive land uses.

Policy 9.1.6 It is anticipated that roadway improvement projects will be needed to accommodate build-out of the general plan. Therefore, existing noise-sensitive uses may be exposed to increased noise levels due to roadway improvement projects as a result of increased roadway capacity, increases in travel speeds, etc. It may not be practical to reduce increased traffic noise levels consistent with those contained in Table 9-3 [See Table 4.6-4]. Therefore, as an

alternative, the following criteria may be used as a test of significance for roadway improvement projects:

- Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant; and
- Where existing traffic noise levels range between 60 and 65 dB L_{dn}, at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant; and
- Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas, a +1.5 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant.

Policy 9.1.7 Where noise mitigation measures are required to achieve the standards of Tables 9-1 and 9-3 [See Table 4.6-4], the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

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

Policy 9.1.9 Activities associated with agricultural operations are recognized as noise sources, which may be considered annoying to some residents. These activities can occur during the daytime and nighttime hours. Activities include crop dusting, tractor operations, etc. The city will require that all new development of residential uses adjacent to agricultural uses provide full disclosure of potential noise sources to future residents.

Figure 4.6-3
Land Compatibility for Community Noise Environments

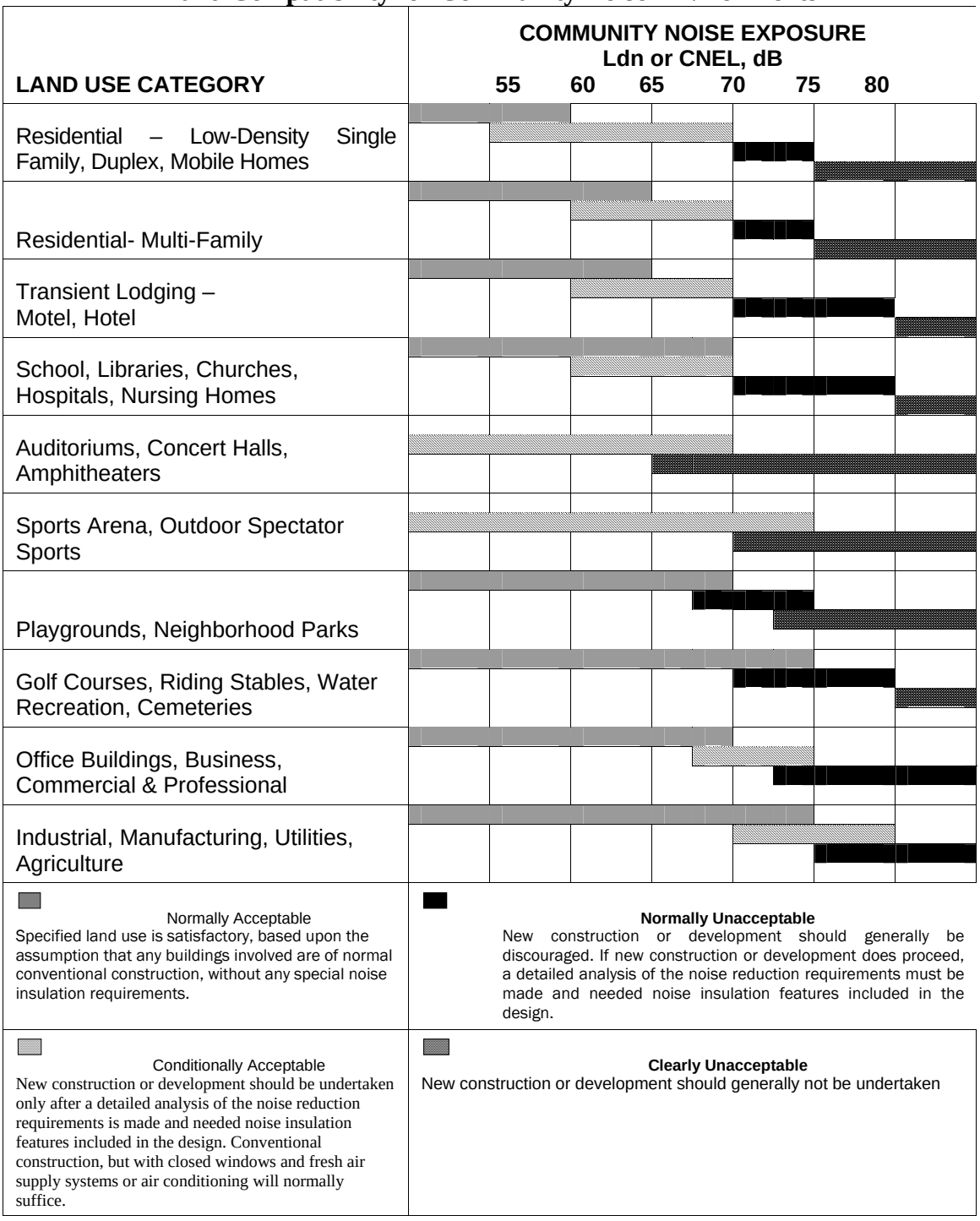


Table 4.6-4
Maximum Allowable Noise Exposure Transportation Noise Sources

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

[1] Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.
[2] As determined for a typical worst-case hour during periods of use.
[3] In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.
Source: *Illingworth & Rodkin, December 12, 2005.*

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local planning criteria or ordinances, or substantially increase noise levels at noise-sensitive land uses.

The City of Oakley General Plan specifies that a project would result in significant noise impacts if the project would result in any of the following:

- Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant; and
- Where existing traffic noise levels range between 60 and 65 dB L_{dn}, at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant; and
- Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas, a +1.5 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant.

For the purposes of this assessment, noise levels resulting from the project are assessed against the existing noise conditions. Traffic noise impacts would occur where noise levels would exceed 65 dBA L_{dn} at outdoor activity areas (i.e., rear yards) or where interior noise levels would exceed 45 dBA L_{dn}.

Method of Analysis

Traffic Noise Modeling Methodology

To generally qualify the existing ambient noise environment in the project vicinity, short-term ambient noise level measurement surveys were conducted in the project area between November and December 2004. This data represents the worst-case scenario for the proposed project area. Because the proposed project area has not experienced rapid or unplanned development, the noise 2004 analysis for the proposed project area is considered to be adequate for the proposed project.

A continuous 24-hour noise measurement was conducted on Cypress Road near Machado Lane from 1:00 pm on December 15, 2004 until 1:00 pm on December 16, 2004. The measurement was conducted at a distance of 75 feet from the centerline of Cypress Road.

A continuous 24-hour noise measurement was also conducted on Sellers Avenue south of Cypress Road. The measurement was conducted at a distance of 65 feet from the centerline of the roadway. The measurement was conducted on November 19 and November 22, 2004.

A spot measurement was made on Knightsen Avenue south of Cypress Road at a distance of 50 feet from the centerline of Knightsen Avenue, typical of the existing setback of residences along Knightsen Avenue. The measurement was conducted on February 2, 2005.

To describe existing and projected noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of $L_{dn,}$ it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Noise Impact Assessment

The analysis in this section uses information obtained from sources listed in the introduction to this chapter and compares the existing noise levels and the effects of the proposed project upon the surrounding noise levels. Conclusions are drawn using the significance criteria listed above.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.6-1 Noise impacts related to land use compatibility.

The project would develop residential properties along Cypress Road and Sellers Avenue. To accommodate future development in the Oakley area, Cypress Road would be widened to six lanes east of Sellers Avenue and four lanes west of Sellers Avenue. Sellers Avenue would be four lanes. Under cumulative traffic conditions (General Plan Buildout), the average daily traffic volume on Cypress Road is expected to reach 40,000 to 45,000 vehicles per day east of Sellers Avenue and 30,000 to 35,000 vehicles per day west of Sellers Avenue. Sellers Avenue would have an average daily traffic volume of about 6,000 vehicles per day north of Cypress Road. The change in roadway geometry and the significant increase in traffic volumes would result in a significantly different noise environment along these roads that currently exists today.

Traffic noise modeling indicates that at a distance of 35 feet from the edge-of-pavement (typical of the closest yards proposed along Cypress Road), the L_{dn} would reach 76 dB. The L_{dn} at the same distance from the edge-of-pavement of Sellers Avenue north of Cypress Road would reach 65 dB. Without mitigation, noise levels outside of the residences closest to Cypress Road could exceed the City standard of 65 dB, along Sellers Avenue north of Cypress Road noise levels would reach 65 dB.

The future noise levels along Cypress Road and Sellers Avenue would also be high enough to cause interior noise levels in the homes adjacent these roads to exceed an L_{dn} of 45 dB. Therefore, interior noise levels could also potentially exceed the guidelines contained in the Noise Element of the City of Oakley's General Plan.

The City of Oakley's General Plan requires a project-specific acoustical analysis to demonstrate how interior noise levels would be kept below 45 dB and how outdoor noise levels for residential areas would be kept below 65 dB. Alternative techniques are available to meet these criteria. The Noise Element of the City of Oakley's General Plan encourages the use of site planning and setbacks to achieve compliance with the standards. A 200-foot setback would be required along Cypress Road. Alternatively, sound walls could be built to reduce noise levels in the yards adjacent to the homes. The sound walls would also reduce noise levels inside the first floor of the homes.

Preliminary traffic noise modeling was conducted assuming level terrain between Cypress Road and adjacent receivers. Receivers were assumed to be in the center of the rear yard adjacent to the roadway, approximately 20 feet from the noise barrier. The result of this modeling indicates that sound walls nine feet high would be required along Cypress Road to reduce noise levels in rear yards to 65 dB Ldn. Table 4.6-5 summarizes the results of the traffic noise modeling and barrier insertion loss calculations.

Table 4.6-5
Future Exterior Ldn Noise Levels (dBA) With Mitigation

Roadway	No barrier	6- foot barrier	7-foot barrier	8-foot barrier	9-foot barrier	10-foot barrier	11-foot barrier
Cypress Road	74	68	67	66	65	64	63

Source: Illingworth & Rodkin, 2006.

Noise barriers would not shield upper level facades of the proposed units. Typically, standard construction with a forced-air mechanical ventilation unit (allowing the occupant to control noise by maintaining the windows shut) provides at least 20 dBA of noise reduction in interior spaces. Exterior noise levels at unshielded facades of residential units nearest Cypress Road would be expected to be approximately 74 Ldn. Interior noise levels are approximately 15 decibels lower than exterior noise levels assuming standard residential construction methods and the windows partially open for ventilation.

By incorporating some form of forced-air mechanical ventilation system into the design of the unit, interior average noise levels would be expected to be about 20 to 25 dBA lower assuming the windows are closed to control noise. Even with a forced-air mechanical ventilation system and all windows closed, interior average noise levels would still exceed 45 Ldn. However, if the sound walls were constructed, noise levels inside of the first floor of homes could be maintained at an Ldn of 45 dB or less assuming that the windows are kept closed.

Sound-rated windows would be necessary for the upper floor of units adjacent to Cypress Road. Assuming an exterior noise level of 74 Ldn at the façade of the residential unit, stucco exterior siding, and a 30 percent window-to-wall ratio of the exterior wall facing Cypress Road, windows with sound transmission class ratings (STC) of 33 to 36 would be required to maintain interior average noise levels below 45 Ldn with an adequate margin of safety. Sound-rated windows are readily available and would adequately reduce interior noise levels to acceptable levels.

Assuming standard residential construction methods, residential units along Sellers Avenue would require a forced-air mechanical ventilation unit to allow the occupant to control noise by maintaining the windows shut. Interior average noise levels with the windows closed would be less than 45 Ldn.

Because proposed residences on the project site could be impacted by noise both in exterior spaces and at the second floor, the project would result in a ***potentially significant*** impact.

Mitigation Measure(s)

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

4.6-1(a) *The applicant shall construct noise barriers prior to occupancy to reduce noise at exterior use areas adjacent to Cypress Road and Sellers Avenue to 65 dB L_{dn} or less. The applicant/developer shall include the following mitigation measures on the improvement plans to be approved by the City Engineer prior to the approval of the improvement plans or initiation of any grading or construction activity:*

- *The barriers shall be constructed solidly over the entire surface and at the base. Openings or gaps between barrier materials or the ground decrease the noise reduction provided by a noise barrier; and*
- *Suitable materials for barrier construction shall have a minimum surface weight of 3 lbs./ft^2 (such as one-inch thick wood, masonry block, concrete, or metal).*

4.6-1(b) *Project-specific acoustical analyses shall be conducted during final detailed design of the project when building elevations and floor plans are available in order to determine how interior noise levels can be reduced to 45 dBA L_{dn} or lower. The future noise environment at the project site shall require sound-rated construction methods and the provision of forced-air mechanical ventilation so that windows could be kept closed at the occupants' discretion to control noise. Noise insulation features include sound-rated windows, sound-rated doors, and careful attention to exterior wall detailing (including caulking and possible sound insulating upgrades such as resilient channels, or stucco exterior siding). The final detailed design of noise insulation features necessary to maintain interior noise levels at acceptable levels shall be completed at the time that the final plans are available and prior to the issuance of a building permit.*

4.6-2 Impacts related to permanent noise increases at existing residences.

Project-generated traffic noise levels were calculated by comparing existing plus project traffic volumes to existing traffic volumes along area roadways. Noise levels along Sellers Avenue north of Cypress Road are anticipated to increase by about 2 dBA; however, residences do not currently exist along at this roadway segment. Project-generated traffic is not anticipated to increase noise levels along Sellers Avenue, south of Cypress Road. Therefore, the project-specific increases in ambient noise levels would result in a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

4.6-3 Impacts related to construction noise.

The construction of the proposed project would temporarily increase noise levels in the area. Noise levels generated by specific pieces of construction equipment at a distance of

50 feet are presented in Table 4.6-6. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, as well as the distance between the construction noise sources and the noise sensitive receptors.

Existing residences nearest to the proposed project site are located south of Cypress Road and are currently exposed to high levels of traffic noise. Construction on the project site is not anticipated to generate noise levels in excess of traffic noise resulting from Cypress Road. During the period of time that construction is taking place very close to Cypress Road, construction activity could reach the noise levels generated by trucks on Cypress Road. However, during the majority of the time, noise levels generated by construction would be far lower than current noise levels. As homes are developed in the area, some of these homes may be located very close to construction projects and, therefore, they may be impacted by the construction noise that would exceed standards acceptable for residential land uses. This would result in a ***potentially significant*** impact.

Mitigation Measure(s)

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

4.6-3(a) *Noise-generating activities at the construction site or in areas adjacent to the construction site associated with the project in any way shall be restricted to the hours of 7:30 am to 5:30 pm, Monday through Saturday. Construction is prohibited on Sundays and City holidays.*

4.6-3(b) *The applicant/developer shall include the following mitigation measures on the improvement plans to be approved by the City Engineer prior to the approval of the improvement plans or initiation of any grading or construction activity:*

- *Equip all equipment driven by internal combustion engines with intake and exhaust mufflers that are in good condition and appropriate to the equipment. Unnecessary idling of internal combustion engines should be strictly prohibited;*

Table 4.6-6
Construction Equipment – 50-Foot Noise Level Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	95	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous

Source: Illingworth & Rodkin, 2006.

- *Stationary noise-generating equipment, such as air compressors or portable power generators, must be located the greatest distance applicable from sensitive receptors. Construct temporary noise barriers to screen stationary noise-generating equipment when located near adjoining sensitive land uses;*
- *Utilize "quiet" air compressors and other stationary noise sources where technology exists; and*
- *Designate a "disturbance coordinator" who would be responsible for responding to any local complaints regarding construction noise. The disturbance coordinator will determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented.*

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.6-4 Cumulative impacts related to permanent noise increases at existing residences.

Under cumulative conditions, which assume the buildout of the neighboring Emerson and Burroughs properties, noise levels in the project vicinity are expected to increase by as much as 8 dB along Cypress Road and 10 dB along Sellers Avenue. The character of the noise environment is anticipated to permanently change from rural to a noise environment represented by a more suburban setting. The project's incremental contribution to these cumulative noise level increases would not be cumulatively considerable because the proposed project would be consistent with the land uses for the project area as defined by the City of Oakley General Plan, as well as being consistent with the Development Agreement and the original County M-8 land use designation for the proposed project site.. Because the project would not measurably contribute to the noise generated by the build-out of the area, the project's contribution to cumulative noise impacts is considered ***less-than-significant***.

Mitigation Measure(s)
None required.

Endnotes

[1] Illingworth & Rodkin. *Gilbert Property EIR Noise Section: City of Oakley, California*. December 12, 2005.
[2] City of Oakley. *City of Oakley 2020 General Plan*, 2002.

4.7 HAZARDS

4.7 HAZARDS

INTRODUCTION

The Hazards section of the EIR describes existing and potentially occurring hazards and hazardous materials on the project site. The section discusses potential impacts posed by these hazards to the environment, as well as to workers, visitors, and residents within and adjacent to the project site. More specifically, the section describes potential effects on human health that could result from soil or groundwater contamination stemming from past uses of the site, or from exposure to hazardous materials used in adjacent agricultural operations. The Hazards section is based on the *Phase 1 Environmental Site Assessment Gilbert Property*[1] (See Appendix G of this Draft EIR), *Phase I Environmental Site Assessment and Limited Soil Quality Evaluation*[2] (See Appendix P of this Draft EIR).

ENVIRONMENTAL SETTING

The Gilbert Property project site (See Figure 3-1, Regional Location Map, and Figure 3-2, Project Location Map, in Chapter 3 of this Draft EIR) is situated north of Cypress Road, and east of the approved and the developed Cypress Grove project, Delta Vista Middle School, and Iron House Elementary School. Land uses to the south of the proposed project include agricultural land and rural single-family residences. Additionally, land uses to the southeast of the proposed project include a gasoline service station (Blue Star Gas Mart), a trucking company, and a welding shop. The project area is bounded by the vacant Burroughs and Emerson properties to the east and west respectively. The project is bounded on the north by the Contra Costa Water District Canal (CCWD/USBR Canal), which separates the project site from the open space acreage to the north. The open space acreage is currently owned by the State of California. A 55-acre portion of land immediately to the north of the CCWD/USBR canal and the project site at the end of Sellers Avenue is held in escrow, pursuant to a Memorandum of Understanding and Development Agreement, for future conveyance to the City of Oakley as a community park.

Lowney Associates performed a site survey of the Gilbert property site on July 20, 2004. At the time of the visit, the primary use of the subject property was cattle grazing. Drainage ditches, unpaved roads and barbed-wire fences were located on the site. Concrete piping/culverts and troughs were observed adjacent to the unpaved roads on the western and central portions of the site. A water-monitoring well was observed on a road in the middle portion of the site (See Figure 4.7-1).

An elevated portion of land is located in the central area of the property. Structures on the site include a dilapidated wooden and corrugated steel structure with an attached shed on a raised concrete foundation. A former water tower and evidence of an abandoned water well are located north of the building and shed. Approximately 70 feet of apparent former well casing was observed near the presumed former well. Cattle remains were also observed near the central portion of the site.

A paved storage yard is located on the northwest corner of the site. Several abandoned vehicles, a former aboveground storage tank (AST), cattle remains, and miscellaneous trash and debris were observed in the vicinity of the storage area. Piles of tires were located adjacent to the south side of the storage yard. According to Mr. Gilbert, the property owner, the tires had been left there by an unknown source and would be removed.

Additionally, an abandoned residence was located on the eastern portion of the site. An abandoned car, and miscellaneous trash and debris were also observed in the vicinity of the abandoned residence.

Historical and Aerial Photographic Site Features

Aerial photographs of the project site area were reviewed as part of the Phase I Environmental Report. The photographs spanned the years of 1953 to 2000 and were reviewed in stereo, when available, to analyze three-dimensional features. The following discussion provides a chronology of apparent usage of the site and site vicinity, developed from the interpretation of the aerial photographs.

Aerial photographs for the years 1957, 1966, 1970, 1979, 1985, 1990, 1995, and 2000 from Pacific Aerial Surveys in Oakland, as well as an additional aerial photograph (dated 1993) obtained from TerraServer, were consulted.

The 1957 photograph shows the site as being occupied by agricultural land. An elevated portion of the land (a sand dune remnant), not in use for agricultural purposes is identifiable in the center portion of the property. Two large buildings, several additional, smaller structures, and an apparent water tower are visible in this area. Several unpaved roads are visible on-site, leading toward Sellers Avenue, Cypress Road, and the Contra Costa Canal.

The photographs from 1966 and 1970 show that an additional area on the central portion of the property was cleared. Additionally, road access across the canal has been demolished.

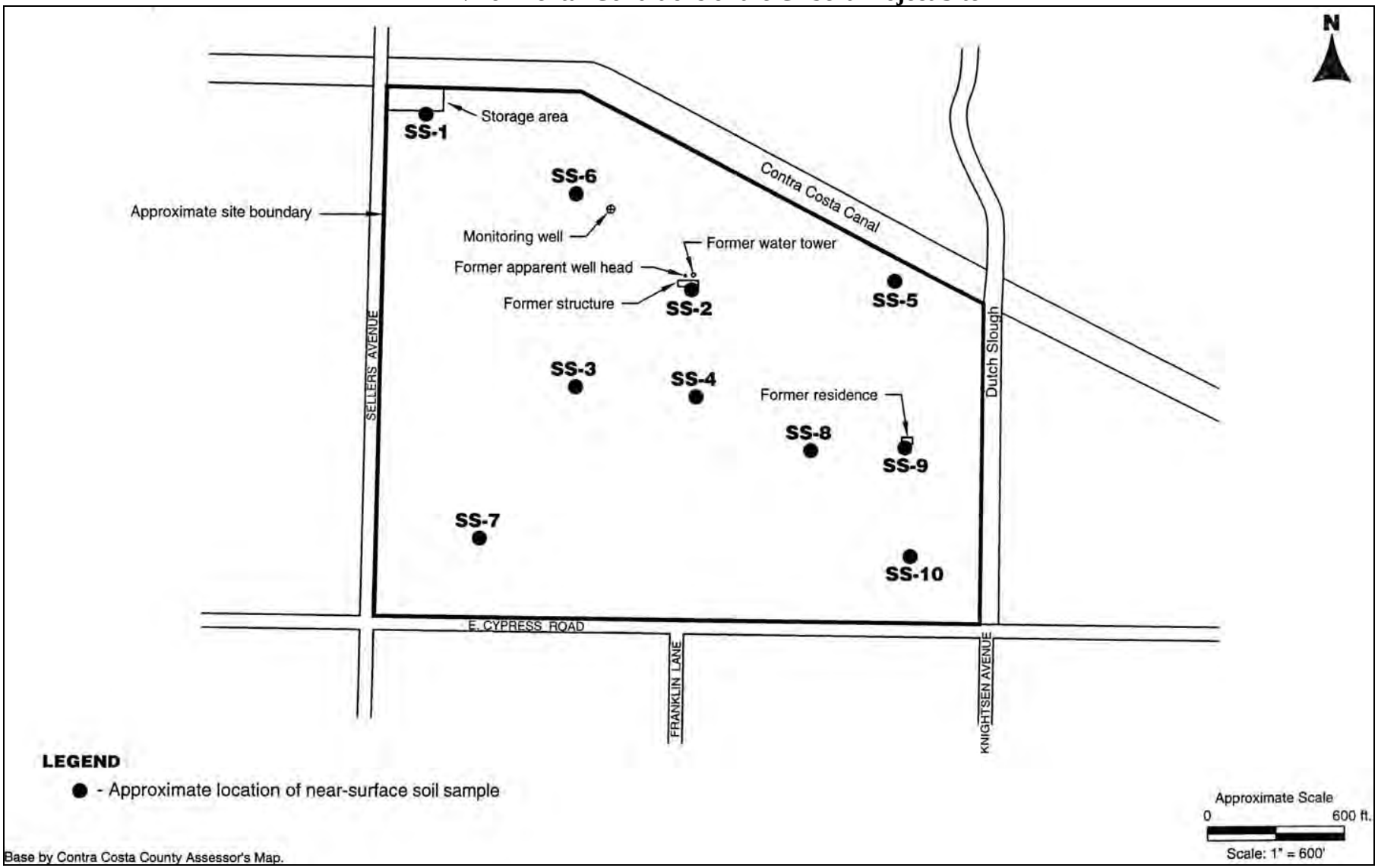
The images from 1979 and 1985 show an apparent paved storage area at the northeast corner of the site.

The photographs from 1990, 1993, 1995 and 2000 show that one of the large buildings on site has been demolished and the rest of the area remains unchanged.

Potential On-Site Hazards

The Phase I Site Assessment includes the results of a search of electronically compiled Federal, State, County, and City databases. The database search includes regulatory agency

Figure 4.7-1
Environmental Conditions of the Gilbert Project Site



lists of known or potential hazardous waste sites, landfills, hazardous waste generators, and disposal facilities, in addition to sites under investigation. The information provided in this Draft EIR was obtained from publicly available sources. The proposed project site was not identified during the regulatory database search.

Contra Costa County Hazardous Site List

An inactive Contra Costa County Public Works facility underground storage tank (UST) is included on the Contra Costa County Site List. The UST is listed as being located at Cypress Road and Sellers Avenue in Oakley. The UST is listed as inactive by September 1994. The database report radius map shows the facility as being located on the Gilbert property. However, during a site visit by Lowney Associates, on-site features that were indicative of a former public works facility were not observed in the area indicated by the radius map. Therefore, the reported UST appears to have been located off-site.

Department of Oil & Gas (DOG)

Lowney and Associates conducted a review of DOG files to evaluate the status and location of abandoned gas wells on-site. Based on the records reviewed, natural gas production well Tract 8 8-3 was drilled to a depth of approximately 7,700 feet in the north-central area of the Gilbert site in 1964. This well was abandoned in 1978 under a permit obtained from the DOG. In 1964, gas well Tract 8 8-1 was drilled in the northeast area of the site to a depth of approximately 8,328 feet. This well was abandoned in 1966 under a permit obtained from the DOG.

Nitrate Impacts

The Phase I study did not indicate that the Gilbert property has historically participated in dairy activities and therefore, high levels of nitrates are not expected to occur on the Gilbert site.

Pesticides

The Phase I reports did not indicate that the Gilbert property was likely to contain large amounts of pesticide contamination.

Aboveground and Underground Storage Tanks (ASTs/USTs)

The analysis of aerial photographs of the proposed project sites also indicate that there was a water tower on the proposed project site constructed prior to 1957. However, the aerial photographs show that the water tower and surrounding buildings were demolished prior to 1990.

Asbestos-Containing Building Materials

For buildings constructed prior to 1980, the Code of Federal Regulations (29 CFR 1926.1101) states that all thermal system insulation (boiler insulation, pipe lagging, and related materials)

and surface materials must be designated as "presumed asbestos-containing material" (PACM) unless proven otherwise through sampling in accordance with the standards of the Asbestos Hazard Emergency Response Act.

An asbestos survey was not conducted as part of the site assessment. Given the age of the structures, the possibility exists that asbestos-containing materials may have been used in construction of on-site structures.

Lead-Based Paint

In 1978, the Consumer Product Safety Commission banned the use of lead as an additive to paint. Currently, the U.S. EPA and the U.S. Department of Housing and Urban Development are proposing additional lead-based paint regulations. Based on the age of the buildings on the project area, lead-based paint may be present. If lead-based paint is still bonded to the building materials, its removal is not required prior to demolition. If lead-based paint is peeling, flaking or blistering, any contaminants should be removed prior to demolition. Such paint may become separated from the building components during demolition activities; thus, contaminants must be managed and disposed of as a separate waste stream. Any debris or soil containing lead paint or coating must be disposed at landfills that are permitted to accept the waste being distributed.

Monitoring Well

Based on information received from the owner of the Gilbert property, an on-site monitoring well was installed by the Department of Water Resources to evaluate ground water for nitrates. Regulatory agency staff was not able to locate files for the on-site well.

Potential Off-Site Hazards

The Phase I Site Assessments also address the potential for hazards and the presence of hazardous materials in the vicinity of the project site. The Phase I includes a database search of regulatory agency lists of known or potential hazardous waste sites, landfills, hazardous waste generators, and disposal facilities in addition to sites under investigation. The information provided in this Draft EIR was obtained from publicly available sources.

Hazardous Substance and/or Petroleum Products

Tetra Tech EM, Inc. conducted an agency file review with the DOG for the purpose of ascertaining information related to on-site wells for the neighboring Burroughs property. One abandoned natural gas well was identified as Tract 5 5-5, and is located in the central portion of the Burroughs property. According to DOG records, the well was installed in November 1964 and was abandoned prior to 1985. The total depth of the well is 7,700 feet bgs. According to the *Report of Well Plugging and Abandonment* from DOG, the well was properly closed and abandoned on March 18, 2004.

In addition, the Emerson property, which is situated to the west of the project site, supports an oil house. Obvious indications of soil impacts associated with petroleum product storage do not

exist on the site, with the exception of some discoloration of soil at the eastern side of the shed. The possibility exists that some impacts to soils may have occurred as a result of past petroleum spills.

The Contra Costa County hazardous materials list includes one "orphan" facility: Blue Star Gas at 1541 East Cypress Road southeast of the Gilbert property, which was identified in the site visit conducted by Lowney Associates. The Blue Star Gas facility is listed in the LUST database, though no additional information is supplied. The Phase I analysis conducted by Tetra Tech EM, Inc. for the Burroughs property notes that the Blue Star Gas facility is also identified as an Hazardous Waste Generator and an Hazardous Materials Management Plan site.

Pesticides

The Emerson property, located west of the proposed project site, includes an existing pesticide shed. Though no indications of past substance release or soil impacts were noted within the area of the pesticide shed, the possibility exists that soils may have been impacted as a result of past pesticide spillage.

Aboveground and Underground Storage Tanks (ASTs/USTs)

ENGEO Inc. conducted a review of regulatory databases maintained by the county, State and federal agencies for the neighboring Emerson Property. The search identified one leaking UST site within one-half mile of the vicinity of the proposed project. However, given the distance of the leak from the project site and the available information, this site would not be expected to impact the subject property. Additionally, four registered UST facilities were documented within one-quarter mile of the project site. Two of these facilities have had the USTs removed and do not have evidence of significant soil impacts. The remaining two facilities have active USTs.

The Emerson site supports ASTs, which are currently stored within an underground concrete vault. The tanks were previously stored above ground. Additionally, a waste oil tank is also located on the Emerson property. Some soil staining was noted beneath the aboveground waste oil tank, site and spillage of motor oil has impacted near-surface soil. Mr. Emerson, the property owner, indicated that no evidence exists of fuel releases at the time of the removal of the vaulted ASTs and that little chance of a significant impact exists.

Transformers Off-Site

Electrical transformers are devices used to transfer electricity from one circuit to another, usually through a change in voltage, current, phase, or other electric characteristic. Several pole-mounted transformers were observed on other sites around the periphery of the project site during the site inspection. Spills, staining, or leaks were not observed on or around the transformers. Based on the good condition of the equipment, the transformers are not expected to represent a significant environmental concern.

Typically, transformers are a health concern if they were installed prior to the late 1970s because they utilized Polychlorinated Biphenyls (PCBs). Transformers that contain 50 to 500 parts per

million (ppm) PCBs are classified as PCB-contaminated. The management of potential PCB-containing transformers is the responsibility of the local utility or the transformer owner. Actual material samples need to be collected to determine if transformers are PCB-containing.

Natural Gas Pipelines

The environmental assessment of the Burroughs property performed by Tetra Tech EM Inc., indicates that an active natural gas pipeline and a buried phone line run along the south edge of East Cypress Road.

Natural Gas Wells

Natural gas production wells are located adjacent to the project site (see above discussion regarding on-site abandoned wells). Two natural gas wells are located approximately one-fourth mile south of East Cypress Road between Franklin Road and Knightsen Avenue and one gas well is located on the Burroughs property, located directly east of the project site. An additional well is located approximately one-eighth mile south of the Burroughs property between Knightsen and Broadway.

REGULATORY CONTEXT

The term hazardous substance refers to both hazardous materials and hazardous wastes. A material is defined as hazardous if it appears on a list of hazardous materials prepared by a federal, state or local regulatory agency or if the site has characteristics defined as hazardous by such an agency.

The California Environmental Protection Agency, Department of Toxic Substances Control (CAL-EPA, DTSC) defines hazardous waste, as found in the California Health and Safety Code Section 25141(b), as follows:

> […] its quantity, concentration, or physical, chemical, or infections characteristics: (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; (2) pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed.

Many agencies regulate hazardous substances. The following discussion contains a summary review of regulatory controls pertaining to hazardous substances, including federal, State, and local laws and ordinances.

Federal Regulations

Federal agencies that regulate hazardous materials include the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Department of Transportation (DOT), and the National Institute of Health (NIH). The following federal laws and guidelines govern hazardous materials.

- Federal Water Pollution Control
- Clean Air Act
- Occupational Safety and Health Act
- Federal Insecticide, Fungicide, and Rodenticide Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Guidelines for Carcinogens and Biohazards
- Superfund Amendments and Reauthorization Act Title III
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Toxic Substances Control Act

Prior to August 1992, the principal agency at the federal level regulating the generation, transport and disposal of hazardous waste was the EPA under the authority of the Resource Conservation and Recovery Act (RCRA). As of August 1, 1992, however, the California Department of Toxic Substance Control (DTSC) was authorized to implement the State's hazardous waste management program for the EPA. The federal EPA continues to regulate hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

State Regulations

The California Environmental Protection Agency (Cal-EPA) and the State Water Resources Control Board establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable State and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

Within Cal-EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the State agency, for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law (HWCL).

Local Regulations

<u>City of Oakley General Plan</u>

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

Hazardous Materials

Goal 8.3 Provide protection from hazards associated with the use, transport, treatment, and disposal of hazardous substances.

Policy 8.3.1 Hazardous waste releases from both private companies and public agencies shall be identified and eliminated.

Policy 8.3.2 Storage of hazardous materials and wastes shall be strictly regulated.

Policy 8.3.3 Secondary contaminant and periodic examination shall be required for all storage of toxic materials.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with CEQA, the effects of a project are evaluated to determine if they would result in a significant adverse impact on the environment. An EIR is required to focus on these effects and offer mitigation measures to reduce or avoid any significant impacts that are identified. The criteria, or standards, used to determine the significance of impacts may vary depending on the nature of the project the following list was adapted form CEQA Guidelines appendix G. For the purposes of this EIR, an impact is considered significant if the proposed project would:

- Create potential health risks due to siting of urban uses over oil and gas fields or wells;
- Create a hazard to the public or the environment due to agriculture-related pesticide contamination;
- 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 likely 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;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to the risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Method of Analysis

Site conditions and impact assessments for this chapter are based on the Phase I environmental site assessments prepared for the proposed project site.

Lowney Associates completed a *Phase I Environmental Assessment and Limited Soil Quality Evaluation* for the Gilbert property in September 2004. Research included a site visit on July 20, 2004, as well as a review of off-site sources and public records.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.7-1 Presence of pesticide and/or herbicide residues on the project site.

Lowney Associates performed a limited soil quality evaluation of the Gilbert property on May 27, 2004. Ten near-surface soil samples were collected from the project site; three of the samples were collected near observed structures and storage areas to help evaluate possible contamination as a result of pesticide mixing/storage areas on the site. The soil samples detected DDT and pesticide related metals, though the concentrations of these contaminants were found to be below Environmental Screening Level (ESL) residential standards (*Phase I Environmental Assessment and Limited Soil Quality Evaluation*, p. 7-8).

Additional site reconnaissance was performed on the proposed project site. Discussions in the Phase I reports conclude that, although pesticide and herbicide residues are present on-site, the contaminants are below ESL standards for residential uses. Therefore, because the contaminant levels were found to be within allowable levels for residential development, the presence of pesticides and herbicides on the proposed project area would have a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

4.7-2 Impacts from abandoned natural gas production wells.

The proposed project site contains two natural gas wells:

1. Tract 8 8-3 was drilled to a depth of approximately 7,700 feet in the north-central area of the Gilbert site in 1964. This well was abandoned in 1978 under a permit obtained from the (DOG).
2. Tract 8 8-1 was drilled in the northeast area of the Gilbert site to a depth of approximately 8,328 feet. This well was abandoned in 1966 under a permit obtained from the DOG.

The two existing wells were properly closed and abandoned using DOG permits. However, drill cuttings and fluids generated during well installation can contain petroleum hydrocarbons, which have the potential of polluting adjacent soils. If suspect soil is encountered in the well areas during site development, the soils will require appropriate handling and disposal. Additionally, if structures are to be built on or near the abandoned wells, head venting controls may be necessary to ventilate gases away from structures and sensitive receptors in the event that a well seal fails. Therefore, though the wells were sealed and abandoned by Department of Oil and Gas standards, soil contamination is possible and could be hazardous to construction workers and residents on the project site, and a ***potentially significant*** impact would occur.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

4.7-2(a) *Prior to the issuance of a grading permit, the project developer shall provide to the City of Oakley a detailed soils assessment, in the vicinity of the abandoned wells located on the project site, for the review and approval of the City Engineer. If contaminants are not detected in the environmental assessment, further mitigation shall not be required. If contamination is identified, a remediation plan shall be submitted, and all contaminants shall be removed to the satisfaction of the City of Oakley and Contra Costa County Environmental Health Services.*

4.7-2(b) *Prior to the issuance of a grading permit, the developer shall locate and test for any surface leakage of all former gas production wellheads on the project site pursuant to DOG guidelines and under the supervision of a DOG engineer. If leakages are not detected, further mitigation shall not be required. If leakages are identified, the wells shall be sealed, a remediation plan shall be submitted, and all contaminants shall be removed to the satisfaction of the City of Oakley and Contra Costa County Environmental Health Services. Additionally, the developer shall notify the DOG of planned improvements located within 10 feet of the well to evaluate the need for possible access or engineering controls.*

4.7-3 Impacts to the off-site pipeline from project construction activities.

A natural gas pipeline is located south of the site along East Cypress Road. The pipeline operates as a gathering line and serves natural gas production wells in the area. Although no pipelines exist on the project site, construction-related activities such as heavy equipment operation adjacent to the project site could damage the pipelines and result in the release of natural gas, exposing workers or nearby existing residents to the dangers associated with such a release. Exposure to this hazardous material, although unlikely, would result in a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would mitigate potential impacts to a *less-than-significant* level.

4.7-3 *Prior to commencement of grading and construction, the construction contractor, the developer, and a representative from the City's Engineering Department shall meet on the project site and prepare site-specific safety guidelines for construction in the field to the satisfaction of the City Engineer. The safety guidelines shall be noted on the improvement plans and be included in all construction contracts involving the project site.*

4.7-4 Impacts related to the presence of asbestos and lead particles on the project site.

The Phase I environmental analysis of the proposed project area found that several structures on the site, including a barn, shed and a single-family residence. A review of aerial photographs show that a number of these structures were constructed prior to the mid 1970's, and could contain asbestos containing materials (ACMs) in the structures. The building materials associated with asbestos include, but are not limited to resilient floor coverings, drywall joint compounds, acoustic ceiling tiles, piping insulation, electrical insulation, and fireproofing materials.

Lead-based paints could also be present in the existing structures. Typically, exposure to lead from older vintage paint is possible when the paint is in poor condition or is being removed. In construction settings, workers could be exposed to airborne lead during renovation, maintenance or demolition work. Lead-based paints were phased out of production in the early 1970s. The on-site buildings were constructed prior to the ban on lead-based paints and, therefore, may contain these materials.

Long-term exposure to friable asbestos and lead particles could prove hazardous. Prior to construction, the structures would be removed from the site. During the demolition activities, workers would be potentially exposed to hazardous levels of asbestos and lead particles exists. Therefore, the introduction of people to the site as a result of the development of the proposed project and the exposure of these people to asbestos and lead materials on the project site would be considered a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce potential impacts to a *less-than-significant* level.

4.7-4 *Prior to issuance of a demolition permit by the City for any on-site structures, the project proponent shall provide a site assessment that determines whether any structures to be demolished contain asbestos and/or lead paint. If structures do not contain asbestos or lead-based paint, no further mitigation is required. If any structures contain asbestos, the application for the demolition permit shall include an asbestos*

abatement plan consistent with local, state, and federal standards, subject to approval by the City Engineer. If lead-based paint is found, all loose and peeling paint shall be removed and disposed of by a licensed and certified lead paint removal contractor, in accordance with local, state, and federal regulations. The demolition contractor shall be informed that all paint on the buildings shall be considered as containing lead. The contractor shall take appropriate precautions to protect his/her workers, the surrounding community, and to dispose of construction waste containing lead paint in accordance with local, state, and federal regulations subject to approval of the City Engineer.

4.7-5 Exposure of residents to safety hazards due to the construction of additional residences near the Contra Costa Canal and the stormwater detention ponds.

Development of the proposed project would position additional residents near the Contra Costa Canal. Residents could be attracted to the canal, and access to the canal could present a drowning hazard. It should be noted that the canal is bordered, in some places, with public trails along the tops of levees. However, a 4.5-foot fence exists along the Canal within the Contra Costa Canal District's right-of-way. The proposed project would continue these fences to prohibit access. Therefore, the construction of new residences near the Contra Costa Canal would not be considered a substantial adverse impact. It should also be noted that the Contra Costa Canal is currently planned to be underground in a pipe which would eliminate any drowning hazards.

The proposed project would construct a storm water detention basin in the center of the project site. In addition to playing a key role in the stormwater management strategy for the project site, the detention basin would serve as a visual and recreational amenity. The normal water surface elevation of the pond is two feet, and the maximum allowable water surface elevation is six feet. Because it is likely that the water surface elevation of the basin would exceed the normal surface elevation of two feet during storm events, the potential public safety impacts related to the design of the detention basin would be considered ***potentially significant***.

Mitigation Measure(s)
Implementation of the following mitigation measure would mitigate potential impacts related to the public safety effects of the proposed detention basin to a *less-than-significant* level:

4.7-5 *The project applicant/engineer shall submit a safety program for the proposed detention basin for the review and approval of the City Engineer prior to the approval of the improvement plans. The safety program shall address the public safety concerns associated with the development of the basin including but not limited to bank stabilization and restricting public access to the basin.*

4.7-6 Impacts related to the underground storage tanks at the Blue Star Gas station south of the project site.

The Phase I report prepared by Lowney and Associates identified the Blue Star Gas station at 1431 East Cypress Road southeast of the proposed project area as a site of environmental concern. The Blue Star Gas station is listed in the Leaking Underground Storage Tank database for having a leaking underground fuel tank.

Based on the Phase I report produced by Lowney and Associates, groundwater flows in the area are believed to be to the north/northeast from the Blue Star Gas station, through the proposed project site and into the Contra Costa Canal. As a result, the report notes that the leak at the Blue Star Gas site could have impacted the groundwater beneath the proposed project site and suggests additional review to evaluate potential impacts.

In June 2005, Tetra Tech EM, Inc. preformed a Phase 1 analysis of the Burroughs property[3], which is located immediately to the east of the proposed project site. The Blue Star Gas station is located due south of the neighboring Burroughs property. The Tetra Tech EM, Inc. study addressed these concerns regarding the leak at the Blue Star Gas Station. To investigate the impacts that the leak could have on the proposed project site, Tetra Tech EM Inc. performed a limited soil sampling of the project site just north of the Blue Star Gas station. Both soil gas and groundwater samples were analyzed for pollutants. The results of the tests were below laboratory reporting limits. The tests were conducted on the Burroughs property in close proximity to the Blue Star Gas station. The Gilbert property, which is located to the west of the Burroughs testing site, is even further removed from the USTs and would, therefore, be expected to have lower levels of pollutants than the Burroughs site. Therefore, because the contaminant levels were found to be within allowable levels for residential development, the presence of contaminated soil and groundwater in the project area from the leaking underground fuel tank at the Blue Star Gas Station would have a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

4.7-7 Exposure of proposed residences to wildland fires.

Wildland fire hazards threaten lives, property, and natural resources throughout the City of Oakley. Although the urbanized areas of the City of Oakley are in areas of low wildfire hazard, wildfire is a serious hazard in undeveloped areas and on large lots with extensive areas of unirrigated vegetation because natural vegetation and dry-farmed grain areas are extremely flammable during the late summer and fall.

The City of Oakley is within the boundaries of critical Fire Weather Class 3, which correlates to 9.5 or more days per year of moderate, high, and extreme fire hazard. Grassland fires are easily ignited, particularly in dry seasons. Although the development would decrease the amount of vegetation in the area, the project would also place

structures and residents in close proximity with remaining vegetation, resulting in a ***potentially significant*** impact regarding to the increased risk of wildland fires.

Mitigation Measure(s)
Implementation of Mitigation Measure 4.13-3(a) and (b) in Chapter 4.13, Public Services and Facilities, of this Draft EIR would reduce the magnitude of impacts related to wildland fires. Implementation of the following mitigation measures would further reduce impacts related to wildland fires to a *less-than-significant* level.

4.7-7(a) *When residential structures are developed, an approved fire apparatus access shall be provided to within 150 feet of all portions of the first floor as measured by an approved route around the exterior of the building. Structures not capable of meeting this requirement shall be considered a special hazard and have installed a fire sprinkler system.*

4.7-7(b) *The East Contra Costa Fire Prevention Department shall, as necessary, ensure the installation of radio repeater towers within the proposed project area. The location and design of any radio repeater towers shall be subject to the review and approval of the City Engineer and Community Development Department.*

4.7-7(c) *Development of the site should be carried out in accordance with East Contra Costa Fire Prevention Department rules and regulations and the Uniform Building Code regulations adopted by the East Contra Costa Fire Prevention Department.*

4.7-7(d) *Prior to approval of design review for residential structures, the applicant shall show that all roofs shall be Class A type.*

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.7-8 Long-term hazards-related impacts from the proposed project in combination with existing and future developments in the Oakley area.

Impacts associated with hazardous materials are site-specific and generally do not affect or are not affected by cumulative development. Cumulative effects could be of concern if the project was, for example, part of a larger development in which industrial processes that would use hazardous materials were proposed. However, this is not the case with this project, and project-specific impacts were found to be less-than-significant with the implementation of the recommended mitigation measures.

In addition, surrounding development would be subject to the same federal, State, and local hazardous materials management requirements as would the proposed project,

which would minimize potential risks associated with increased hazardous materials use in the community, including potential effects, if any, on the proposed project. Therefore, implementation of the proposed project would have a ***less-than-significant*** cumulative impact associated with hazardous materials use.

Mitigation Measure(s)
None required.

Endnotes

[1] *ENGEO Inc. Environmental Site Assessment Gilbert Property, August 8, 2002.*
[2] Lowney Associates *Phase I Environmental Site Assessment and Limited Soil Quality Evaluation.* September 3, 2004.
[3] Tetra Tech EM Inc., *Phase I Environmental Assessment and Limited Phase II Environmental Site Assessment.* June 23, 2005.

4.8 BIOLOGICAL RESOURCES

4.8 BIOLOGICAL RESOURCES

INTRODUCTION

This section evaluates the biological resources known to occur and potentially occurring on the Gilbert Property project site. This section describes potential impacts to those resources, and identifies measures to eliminate or substantially reduce those impacts to less-than-significant levels. Existing plant communities, wetlands, wildlife habitats, and potential for special-status species and communities are discussed for the project site.

The information contained in this analysis is primarily based upon the *Biological Resources Section* prepared by Zentner and Zentner[1] (See Appendix H of this Draft EIR), whose evaluation is based on a review of regional biological resource databases and other biological studies conducted in the vicinity, as well as focused habitat assessments and biological surveys conducted on the proposed project site according to accepted protocols and guidelines (See Method of Analysis section in this chapter for a complete list of references). Biologists from several professional firms conducted field surveys between July 2004 and October 2005 on the property.

ENVIRONMENTAL SETTING

The project area consists of low-lying, relatively level land situated along and on the north side of Cypress Road, and the west side of Jersey Island Road, east of State Route 4. The approximate 120-acre project site is bordered to the north by the Contra Costa Canal, to the west by the vacant Emerson property and the Cypress Grove residential development, which is currently under construction, to the south by residential properties south of Cypress Road and to the east by the vacant Burroughs property and rural residential and agricultural lands, most of which are part of the East Cypress Specific Plan and are likely to be developed in the near future (See Figure 3-2 in Chapter 3 of this Draft EIR).

Surrounding Setting

Current land uses within the project area include rural residential and agricultural. The project site is currently being used for agricultural activities. Adjacent land uses historically consists of agricultural activities to the north, south, and east, including farming and livestock grazing, and construction activities (for future residential uses) to the west. Construction activities are also anticipated for the construction of residential uses to the east.

Project Setting

The Gilbert property is an approximately 120-acre farmed and grazed field. Dutch Slough marks the site's eastern boundary, while the Contra Costa Canal abuts the northern. The site is predominantly the level plain of a formerly irrigated pasture and has been recently disked for

farm uses. A vegetated sand hill rises in the center of the site, a remnant of the sand dunes that once occupied this region. Several drainage ditches have been constructed through the site to control the flow of water during irrigation. Annual grassland weeds dominate the majority of the site.

Off-Site Portion of Project Site

The off-site portion of the project is included in the analysis of biological impacts because the development of the proposed project would contribute to the expansion of existing roadways, which would in turn affect biological resources at these off-site locations. The off-site portion of the project area consists of Sellers Avenue approximately one-half mile north from the Sellers Avenue/Cypress Road intersection, as well as Cypress Road one-half mile west and one mile east from the Sellers Avenue/Cypress Road intersection (approximately thirty-five to fifty feet from the roadway's edge). The off-site study area is based upon measurements taken from the Cypress Grove Property Road Improvement Plans prepared by Carlson, Barbee, and Gibson, dated November 22, 2004 and Site Plans dated October 25, 2005. Ruderal vegetation, debris, agricultural fields and orchards characterize the area bordering Sellers Avenue. The off-site area bordering Cypress Road is characterized by agricultural fields, a roadside ditch, irrigated pasture, and seasonal wetlands.

Vegetation Communities and Wildlife Habitats

The following is a discussion of existing habitats found within the project area and the plant and wildlife species they support or have the potential to support. The habitats include cultivated and disturbed lands, non-native annual grasslands, interior dune, orchards, irrigated pasture lands (former and current), seasonal marsh and seasonal wetlands, sloughs, valley freshwater marsh, and drainage ditches. The various habitats are used by a variety of wildlife and the potential for occurrence of special-status species within the on-site habitats described below is discussed in the subsequent section.

Figure 4.8-1, Habitat Map, identifies the locations of the various habitat types on the Gilbert property. Figure 4.8-2, Wetlands/Section 404 Jurisdictional Delineation Map, identifies the jurisdictional and non-jurisdictional waters on the project site.

Irrigated Pasture

Cultivated lands within the Gilbert property are comprised of formerly irrigated fields previously used as pasture for livestock and support an assemblage of mostly herbaceous, non-native, annual and perennial grasses and forbs. Irrigated pastures typically consist of altered lands on which the naturally occurring vegetation has been mostly or entirely removed by grading, levee construction, irrigation, cultivation, and livestock grazing.

Figure 4.8-1
Habitat Map

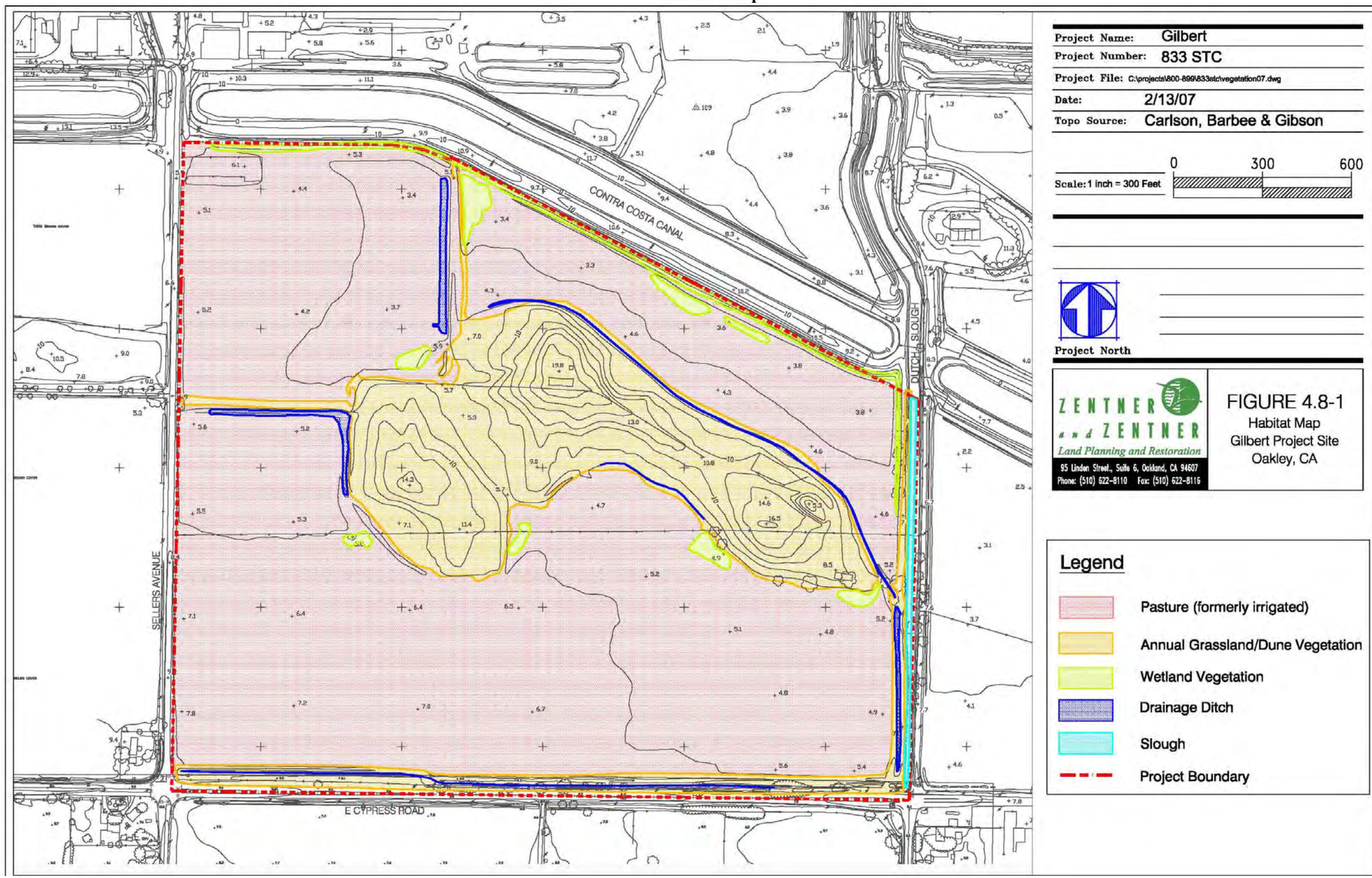
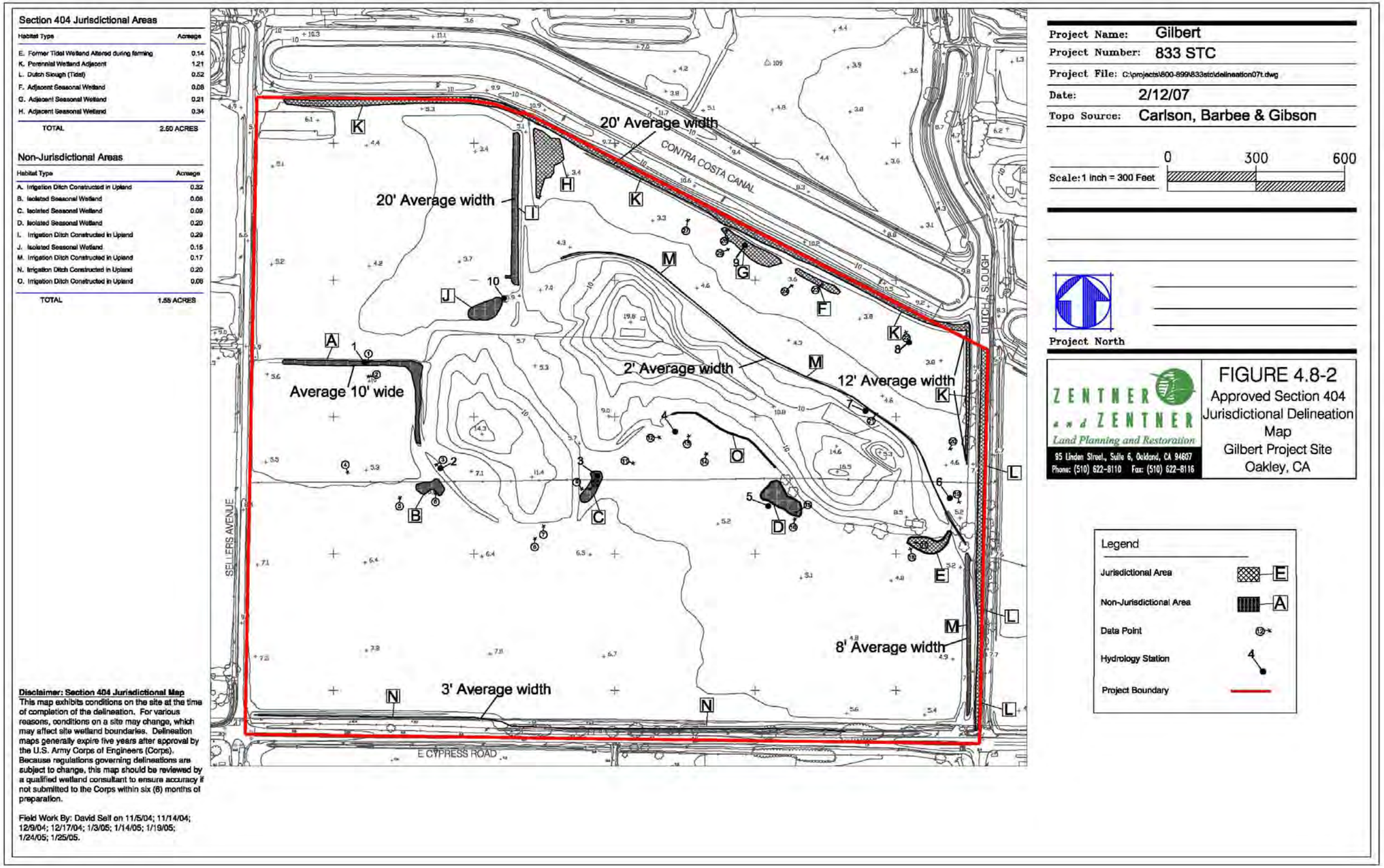


Figure 4.8-2
Wetlands/Section 404 Jurisdictional Delineation Map



Most of the Gilbert property consists of formerly irrigated pasture, which is dominated by non-native forage species that include Bermuda grass, (*Paspalum dilatatum*), Italian ryegrass, curly dock (*Rumex crispus*), English plantain (*Plantago lanceolata*), fiddle dock (*Rumes pulcher*), white clover (*Trifolium repens*), meadow fescue (*Festuca pratensis*), bird's foot trefoil (*Lotus carniculatus)*, Mediterranean barley (*Hordeum marinum*), and dallis grass (*Paspalum dilatatum*). Small portions of the pasture had supported hydrophytes in the past during irrigation but these are now shifting to upland dominance. The areas generally occur alongside drainage ditches or other low areas where overflow from the irrigation has accumulated

Non-Native Annual Grassland

Non-native annual grassland is generally found in open areas in valleys and foothills throughout coastal and interior California (Holland 1986). Non-native annual grassland typically occurs on soils consisting of fine-textured loams or clays that are somewhat poorly drained. The non-native grassland vegetation type is dominated by non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands and scrub as a result of human disturbance. Scattered native wildflower species, representing remnants of the original vegetation, may also be common.

Characteristic non-native annual grasses commonly found on-site include wild oats, brome grasses, wild barley (*Hordeum* spp.), quaking grass (*Briza* spp.), Italian ryegrass, and fescue (*Vulpia* spp.). Common non-native forbs include yellow star thistle, field bindweed (*Convovulus arvensis*), cut-leaved geranium (*Geranium dissectum*), sheep sorrel (*Rumex acetosella*), bur-clover (*Medicago polymorpha*), black mustard, and filaree, among others.

In the center of the site is a degraded sand mound that has been highly disturbed by grazing and is dominated by non-native annual grassland, especially ripgut brome (*Bromus diandrus*), and hare barley (*Hordeum murinum*). Various artifacts from past cattle operations, as well as an abandoned house, are also present. Weedy non-native forbs that include Russian thistle, yellow star-thistle, and bull thistle (*Cirsium vulgare*) are common on the sand mound. Other dominant species include stinging nettle (*Urtica urens*), summer mustard, wild radish (*Raphamus sativa*), and broad-leaved pepper weed (*Lepidum latifolium*). The only relatively common native is foxtail barley (*Hordeum jubatum*), which is found scattered around areas with sandy soils.

Seasonal Wetlands

Seasonal wetlands are dominated by annual and perennial native and non-native wetland species. This plant association typically resembles a wetland community only following the wet season; seasonal wetlands dry up rapidly with the onset of summer. During the dry season, such sites may not be readily recognizable as wetlands.

Several small, low-lying areas totaling 1.15 acres are found alongside the edge of the sand mound. Seasonal wetlands are either irrigated pasture artifacts or seasonal wetland habitats that occupy the low areas of the level plain within the irrigated pasture. The low-lying mesic areas contain more native species than the drier habitats on the site. These areas are dominated by knot

grass (*Paspalum distichum*), common nut-sedge or umbrella grass (*Cyperus eragrostis*, a native species), curly dock, Bermuda grass, Italian ryegrass, dallis grass (*Paspalum dilatatum*), and creeping spikerush (*Eleocharis marcrostachya*, a native species).

Constructed Drainage Ditch

A network of abandoned ditches is located on the Gilbert property. The ditches formerly carried irrigation water onto or drained tailwater from summer irrigated pastures. Vegetation within the ditches is dominated by ruderal seasonal wetland species, including non-native species such as curly dock and dallis grass, and native species such as common nut-sedge, annual marsh aster (*Aster subulatus* var. *subulatus*), and knot grass (*Paspalum distichum*). Five drainage ditches totaling 2.19 acres are located on the Gilbert property and are concentrated in upland areas. The largest ditch runs at the base of the Contra Costa Canal levee along the northern border of the site; this ditch is dominated by common tule and California bulrush. The ditch may also be receiving subsurface seepage from the canal, which at this location consists of an unlined earthen conveyance. The remaining ditches do not support wetland vegetation.

Slough

A portion of Dutch Slough (0.52 acre) is located on the Gilbert property. The slough consists of a linear channel that runs along approximately 1,500 feet of the eastern edge of the site. Dutch Slough at this location is dominated by native species including California bulrush (*Scirpus californicus*), common tule (*Scirpus acutus v. occidentalis*), three-square (*Scirpus americanus*), willow (*Salix* spp.), and bugleweed (*Lycopus americanus*). Dutch Slough also includes areas of open water covered by water hyacinth (*Eichornia crassipes*). Dutch Slough at the site has been realigned into a linear artificial channel, but is directly connected to the system of delta waterways north of the site, and is tidally influenced at this location.

Trees

The project site contains 14 black cottonwood trees (*Populus balsamifera ssp. trichocarpa*) located on-site in the southeastern portion of the sand mound near an old residence. The cottonwoods are the only trees on the project site. A number of trees that once existed north of Cypress Road adjacent to the site were cut down for a pipeline project by another developer after approval of a City Tree Removal Permit and consultation with the California Department of Fish and Game (CDFG) staff.

Special-Status Species

Special-status species are defined as plants and wildlife that may meet one or more of the following:

- Legally protected under the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA) or under other regulations;
- Considered sufficiently rare by the scientific community to qualify for such listing; or,

- Considered sensitive because they are unique, declining regionally or locally, or at the extent of their natural range.

It should be noted that plants listed in Dianne Lake's *Rare, Unusual, and Significant Plants of Alameda and Contra Costa Counties* are not considered special-status plants by CDFG or the lead agency unless the plants also meet one of the criteria below. Special-status plant species may meet one or more of the following:

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

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

- Wildlife listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.11 for listed wildlife and various notices in the Federal Register for proposed species);
- Wildlife that are candidates for possible future listing as threatened or endangered under the FESA (54 CFR 554);
- Wildlife that meet the definitions of rare or endangered species under the CEQA (CEQA Guidelines, Section 15380);
- Wildlife listed or proposed for listing by the State of California as threatened and endangered under the CESA (14 CCR 670.5);
- Wildlife species of special concern to the California Department of Fish and Game (Remsen [1978] for birds; Williams [1986] for mammals); or,
- Wildlife species that are fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Several species of plants and animals within the State of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described below, state and federal laws have provided the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFG. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened or endangered (CNPS 2001). Collectively, these plants and animals are referred to as "special-status species."

For the special-status species tables that follow, definitions of species potential for occurrence on the site are:

- **Present**: Species known to occur on the site, based on the California Natural Diversity Database (CNDDB) records, and/or was observed to occur on-site during the field survey(s).
- **High**: Species known to occur on or near the site (based on CNDDB records within 8 km or 5 mi, and/or based on professional expertise specific to the site or species) and suitable habitat exists on-site.
- **Moderate:** Species known to occur in the vicinity of the site, and suitable nesting and foraging habitat is present.
- **Low**: Species known to occur in the vicinity of the site, and marginal habitat exists on the site or, species are not known to occur in the vicinity of the site, but suitable habitat exists on-site.
- **None**: Species are not known to occur on or in the vicinity of the site and suitable habitat for the species does not exist on the site. Or, species were surveyed for during the appropriate season with negative results for the species occurrence on the site.

Only those species that are known to be present in the project area, have a low to high potential for occurrence, or have been noted as present on the project site will be discussed further following the species table below.

Special-Status Plant Species

According to the Zentner and Zentner report, special-status plant species that could occur on the project site were found not to have potential to occur on the specific conditions of the project site.

Figure 4.8-3, Special-Status Vegetation Occurrence Map, shows the locations of special-status vegetation occurrence within a five-mile radius of the project area.

Table 4.8-1 shows the special-status plant species that were evaluated for occurrence on the project site.

Figure 4.8-3
Vegetation Occurrence Map

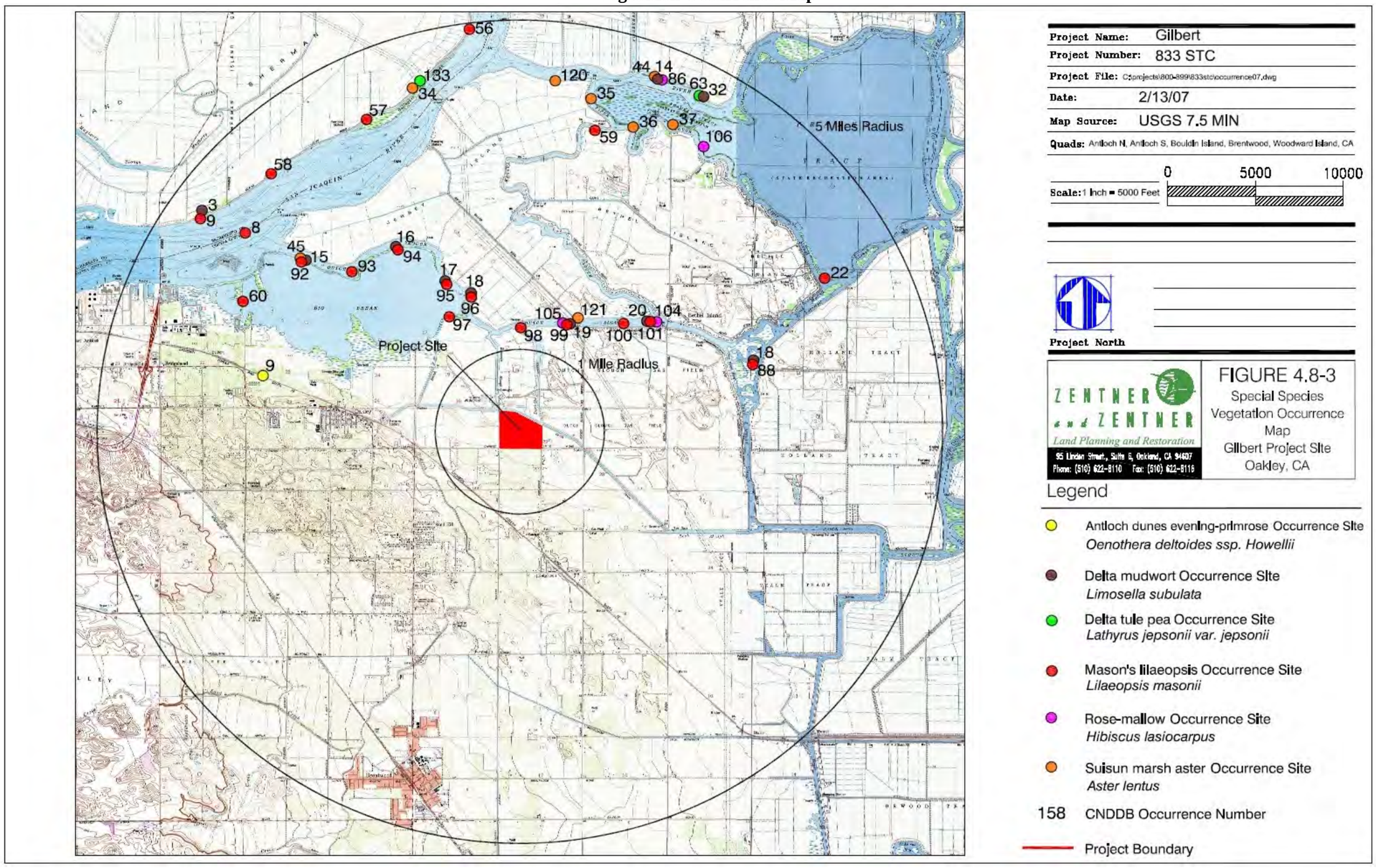


Table 4.8-1
Potentially Occurring Special-Status Plant Species

Family *Scientific Name* Common Name	Status [1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Apiaceae - Parsley Family				
Eryngium racemosum Delta button-celery	**Federal:** SC **State:** SE **CNPS** 1B:2-2-3	Riparian scrub, vernally mesic clay depressions). Recorded from Merced, San Joaquin, and Stanislaus counties.	June-August annual/perennial	None: marginally suitable habitat present. Would have been detectable.
Lilaeopsis masonii Mason's lilaeopsis	**Federal:** SC **State:** CR **CNPS** 1B:2-3-3	Intertidal brackish and freshwater marshes along streambanks. Recorded in the San Joaquin and Sacramento River Delta and lower Napa River channel.	April-October perennial herb	None: no suitable habitat present. Would have been detectable.
Perideridia gairdneri ssp. gairdneri Gairdner's yampa	**Federal:** SC **State:** none **CNPS** 4:1-2-3	Mesic sites in broadleafed upland forest, chaparral, coastal prairie, valley/foothill grassland, vernal pools. Found from the Bay Area and San Joaquin Valley to the Oregon border. Endangered in the southern portion of its range.	June-October perennial herb	None: no suitable habitat present. Would have been detectable.
Asteraceae - Sunflower Family				
Aster lentus Suisun Marsh aster	**Federal:** SC **State:** CEQA **CNPS** 1B:2-2-3	Freshwater and brackish marshes. Known from the Napa River and San Joaquin/Sacramento River Delta.	May-November perennial herb	None: marginally suitable habitat present. Would have been detectable.
Blepharizonia plumosa big tarweed	**Federal:** none **State:** CEQA **CNPS** 1B:3-3-3	Valley/foothill grasslands, on dry sites. Extant in Alameda, Contra Costa, and San Joaquin counties. Believed extirpated in Stanislaus and Solano counties.	July-October annual herb	None: no suitable habitat present. Would have been detectable.
Centromadia parryi ssp. congdonii Congdon's tarplant (formerly Hemizonia parryi ssp. congdonii)	**Federal:** SC **State:** CEQA **CNPS** 1B:3-3-3	Valley/foothill grasslands on alkaline soils. Restricted to San Luis Obispo, Monterey, Alameda, Contra Costa, and Santa Clara counties; presumed extirpated in Santa Cruz and Solano counties.	June-November annual herb	None: no suitable habitat present. Would have been detectable.
Cirsium crassicaule Slough thistle	**Federal:** SC **State:** CEQA **CNPS** 1B:3-2-3	Chenopod scrub, marshes and swamps, sloughs and riparian scrub. Recorded from Kings, Kern, and Sacramento counties.	May-August annual/perennial	None: marginally suitable habitat present. Would have been detectable.
Cirsium hydrophilum var. hydrophilum Suisun thistle	**Federal:** FE **State:** CEQA **CNPS** 1B:3-3-3	Salt marshes. Known from two occurrences on Grizzly Island in Suisun Marsh, Solano County.	July-September perennial herb	None: no suitable habitat present. Would have been detectable.
Helianthella castanea Diablo helianthella	**Federal:** SC **State:** CEQA **CNPS** 1B:2-2-3	Broadleaf upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley/foothill grassland. Occurs in Alameda, Contra Costa and San Mateo counties; presumed extirpated in Marin and San Francisco counties.	April-June perennial herb	None: no suitable habitat present. Would have been detectable.
Isocoma arguta Carquinez goldenbush	**Federal:** SC **State:** CEQA **CNPS** 1B:3-3-3	Valley/foothill grasslands, on alkaline sites. Restricted to Contra Costa and Solano counties in the vicinity of the Carquinez Straits.	August-December perennial shrub	None: no suitable habitat present. Would have been detectable.

(Continued on next page)

Table 4.8-1
Potentially Occurring Special-Status Plant Species (Continued)

Family ***Scientific Name*** Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Lasthenia conjugens Contra Costa goldfields	**Federal:** FE **State:** CEQA **CNPS** 1B:3-3-3	Mesic sites in valley/foothill grassland, vernal pools. Known from Napa and Solano counties and recently rediscovered in Contra Costa County. Presumed extirpated in Alameda, Mendocino, Santa Barbara and Santa Clara counties.	March-June annual herb	None: marginally suitable habitat present. Would have been detectable.
Madia radiata showy madia	**Federal:** none **State:** CEQA **CNPS** 1B:2-3-3	Valley/foothill grasslands below 250 feet, and cismontane woodland. Occurs throughout the Central Coast and Central Valley. Presumed extirpated in Contra Costa County.	March-May annual herb	None: marginally suitable habitat present. Would have been detectable.
Psilocarphus brevissimus var. multiflorus delta woolly-marbles	**Federal:** none **State:** none **CNPS** 4:1-2-3	Vernal pools. Recorded from Alameda, Napa, Santa Clara, San Joaquin, Solano, Stanislaus and Yolo counties.	May-June annual herb	None: no suitable habitat present. Would have been detectable.
Senecio aphanactis rayless ragwort	**Federal:** none **State:** CEQA **CNPS** 2:3-2-1	Coastal scrub and cismontane woodland on alkaline soils. Known from the South Coast, Central Coast, Central Valley and San Francisco Bay Area. Recently documented from Corral Hollow in Alameda County.	January-April annual herb	None: no suitable habitat present. Would have been detectable.
Boraginaceae - Borage Family				
Amsinckia grandiflora large-flowered fiddleneck	**Federal:** FE **State:** CE **CNPS** 1B:3-3-3	Cismontane woodland, valley/foothill grassland. Known from only three natural occurrences in Alameda and San Joaquin counties. Also known historically from Contra Costa County, where it has been recently re-introduced.	April-May annual herb	None: marginally suitable habitat present. Would have been detectable.
Cryptantha hooveri Hoover's cryptantha	**Federal:** none **State:** none **CNPS** 1B:2-2-3	Valley/foothill grassland, on sandy soils. Known from Alameda, Contra Costa, Madera, Merced, Stanislaus and San Joaquin counties.	April-May annual herb	None: suitable habitat present. Would have been detectable.
Plagiobothrys hystriculus bearded popcorn-flower	**Federal:** none **State:** CEQA **CNPS** 1A	Vernal pools and mesic valley/foothill grassland. Presumed extinct. Endemic to Solano County.	April-May annual herb	None: no suitable habitat present. Would have been detectable.
Brassicaceae - Mustard Family				
Erysimum capitatum ssp. angustatum Contra Costa wallflower	**Federal:** FE **State:** CE **CNPS** 1B:3-3-3	Stabilized interior dunes. Known from only two occurrences on the dunes east of Antioch, along the San Joaquin River.	March-July perennial herb	None: marginally suitable habitat present. Would have been detectable.
Tropidocarpum capparideum caper-fruited tropidocarpum	**Federal:** SC **State:** CEQA **CNPS** 1A	Valley/foothill grasslands, on alkaline hills. Known historically from Alameda, Contra Costa, Glenn, Monterey, Santa Clara and San Joaquin counties; presumed extinct. Last seen in 1957.	March-April annual herb	None: no suitable habitat present. Would have been detectable.

(Continued on next page)

Table 4.8-1
Potentially Occurring Special-Status Plant Species (Continued)

Family *Scientific Name* Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Campanulaceae - Bellflower Family				
Downingia pusilla dwarf downingia	**Federal:** none **State:** CEQA **CNPS** 2:1-2-1	Mesic sites in valley/foothill grassland and vernal pools. Occurs from Sonoma and Napa counties through the Sacramento Valley and Sierra foothills.	March-May annual herb	None: marginally suitable habitat present. Would have been detectable.
Caprifoliaceae - Honeysuckle Family				
Viburnum ellipticum oval-leaved viburnum	**Federal:** none **State:** CEQA **CNPS** 2:2-1-1	Chaparral, cismontane woodland, lower montane coniferous forests. Distributed from the Central Valley and the Sierra Nevada to the North Coast, Oregon and Washington.	May-June shrub (deciduous)	None: no suitable habitat present. Would have been detectable.
Chenopodiaceae - Goosefoot Family				
Atriplex cordulata heartscale	**Federal:** SC **State:** CEQA **CNPS** 1B:2-2-3	Chenopod scrub, valley/foothill grassland, on somewhat alkaline or saline hard packed soils. Recorded from Alameda County throughout the Central Valley from Glenn to Kern counties. Presumed extirpated in Contra Costa and San Joaquin counties.	May-October annual herb	None: marginally suitable habitat present. Would have been detectable.
Atriplex coronata var. coronata crownscale	**Federal:** none **State:** none **CNPS** 4:1-2-3	Chenopod scrub, valley/foothill grassland on alkaline soils. Known from the northern San Joaquin Valley, Central Coast, and eastern San Francisco Bay.	April-October annual herb	None: no suitable habitat present. Would have been detectable.
Atriplex depressa brittlescale	**Federal:** none **State:** CEQA **CNPS** 1B:2-2-3	Chenopod scrub, playas and valley/foothill grassland on alkaline and clay soils. Occurs from Solano County throughout the Sacramento and San Joaquin Valleys. Presumed extirpated in Stanislaus County.	May-October annual herb	None: no suitable habitat present. Would have been detectable.
Atriplex joaquiniana San Joaquin spearscale	**Federal:** SC **State:** CEQA **CNPS** 1B:2-2-3	Chenopod scrub, valley/foothill grassland and alkali meadows. Occurs from Solano County throughout the Sacramento and San Joaquin valleys. Presumed extirpated in Santa Clara, San Joaquin and Tulare counties.	April-September annual herb	None: no suitable habitat present. Would have been detectable.
Convolvulaceae - Morning-glory Family				
Convolvulus simulans small-flowered morning-glory	**Federal:** none **State:** none **CNPS** 4:1-2-2	Chaparral (openings), coastal scrub, valley/foothill grassland, in clay and serpentine seeps. Known from the Bay Area and San Joaquin Valley, Central Coast and Channel Islands to San Diego County.	March-June annual herb	None: no suitable habitat present. Would have been detectable.

(Continued on next page)

Table 4.8-1
Potentially Occurring Special-Status Plant Species (Continued)

Family *Scientific Name* Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Ericaceae - Heath Family				
Arctostaphylos auriculata Mount Diablo manzanita	**Federal:** none **State:** CEQA **CNPS** 1B:3-1-3	Chaparral, in canyons and on slopes, on sandstone. Known only from Mt. Diablo area in Contra Costa County.	January-March evergreen shrub	None: no suitable habitat present. Would have been detectable.
Arctostaphylos manzanita ssp. laevigata Contra Costa manzanita	**Federal:** none **State:** CEQA **CNPS** 1B:3-2-3	Chaparral, on rocky slopes between 500 and 1100 meters in elevation. Endemic to Contra Costa county.	January-February evergreen shrub	None: no suitable habitat present. Would have been detectable.
Fabaceae - Pea Family				
Astragalus tener var. tener alkali milk-vetch	**Federal:** None **State:** CEQA **CNPS** 1B:3-2-3	Playas, valley/foothill grasslands, on adobe clay and alkaline vernal pools. Extant in Merced, Solano, and Yolo counties. Extirpated throughout the Bay Area and San Joaquin Valley	March-June annual herb	None: no suitable habitat present. Would have been detectable.
Lathyrus jepsonii var. jepsonii Delta tule pea	**Federal:** SC **State:** CEQA **CNPS** 1B:2-2-3	Freshwater and brackish marshes. Occurs throughout the Sacramento San Joaquin River delta, San Francisco Bay and Central Valley.	May-September perennial herb	None: marginally suitable habitat present. Would have been detectable.
Geraniaceae - Geranium Family				
Erodium macrophyllum round-leaved filaree	**Federal:** none **State:** CEQA **CNPS** 2:2-3-1	Cismontane woodland, valley and foothill grasslands, on clay soil. Widespread throughout California, Baja California, Oregon, Utah, and other states.	March-May annual herb	None: marginally suitable habitat present. Would have been detectable.
Juglandaceae - Walnut Family				
Juglans californica var. hindsii Northern California black walnut	**Federal:** SC **State:** CEQA **CNPS** 1B:3-3-3	Riparian scrub and riparian woodland. Known from Contra Costa, Napa, Sacramento, Solano, and Yolo counties.	April-May tree (deciduous)	None: No naturally occuring stands presentWould have been detectable.
Lamiaceae - Mint Family				
Monardella antonina ssp. antonina San Antonio Hills monardella	**Federal:** none **State:** none **CNPS** 3:?-?-3	Chaparral and cismontane woodland. Recorded from Monterey County; possible also in Alameda, Contra Costa, San Benito and Santa Clara counties.	June-August perennial herb (rhizomatous)	None: no suitable habitat present. Would have been detectable.
Pogogyne douglasii ssp. parviflora Douglas's pogogyne	**Federal:** none **State:** none **CNPS** 3:1-2-3	Chaparral (serpentinite), marsh and swale (vernal freshwater), valley and foothill grassland, vernal pools. Known from Lake, Mendocino, Napa and Sonoma counties. Not clear if it occurs in Butte and Sacramento counties.	May-June annual herb	None: no suitable habitat present. Would have been detectable.
Scutellaria galericulata marsh skullcap	**Federal:** None **State:** CEQA **CNPS** 2:2-2-1	Lower montane coniferous forest, meadows and seeps (mesic), marshes, and swamps. Known from El Dorado, Lassen, Modoc, Nevada, Placer, Plumas, Shasta, San Joaquin counties, Oregon, and elsewhere	June-September perennial herb (rhizomatous)	None: marginally suitable habitat present. Would have been detectable.

(Continued on next page)

Table 4.8-1
Potentially Occurring Special-Status Plant Species (Continued)

Family *Scientific Name* Common Name	Status [1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Scutellaria lateriflora blue skullcap	**Federal:** none **State:** CEQA **CNPS** 2:3-2-1	Mesic meadows, marshes and swamps. Reported from Inyo and San Joaquin counties, to New Mexico and Oregon. Known from only two occurrences in California.	July-September perennial herb (rhizomatous)	None: marginally suitable habitat present. Would have been detectable.
Linaceae - Flax Family				
Hesperolinon breweri Brewer's western flax	**Federal:** SC **State:** CEQA **CNPS** 1B:2-2-3	Chaparral, cismontane woodlands, valley/foothill grassland, mostly on serpentinite. Found in Napa, Solano, and Contra Costa counties.	May-July annual herb	None: no suitable habitat present. Would have been detectable.
Malvaceae - Mallow Family				
Hibiscus lasiocarpus rose-mallow	**Federal:** none **State:** CEQA **CNPS** 2:2-2-1	Freshwater marshes. Restricted to the Sacramento-San Joaquin River Delta.	June-September perennial herb (rhizomatous)	None: marginally suitable habitat present. Would have been detectable.
Malacothamnus hallii Hall's bush mallow	**Federal:** none **State:** CEQA **CNPS** 1B:3-2-3	Chaparral. Restricted to Contra Costa, Merced and Santa Clara counties; possibly also in Alameda County.	May-September shrub (evergreen)	None: no suitable habitat present. Would have been detectable.
Onagraceae - Evening Primrose Family				
Oenothera deltoides ssp. howellii Antioch Dunes evening-primrose	**Federal:** FE **State:** CE **CNPS** 1B:3-3-3	Remnant river bluffs and interior sand dunes. Known from seven occurrences among the dunes east of Antioch.	March-September perennial herb	None: marginally suitable habitat present. Would have been detectable.
Papaveraceae - Poppy Family				
Eschscholzia rhombipetala diamond-petaled California poppy	**Federal:** SC **State:** CEQA **CNPS** 1B:3-3-3	Valley/foothill grassland on clay soils. Was presumed extinct before recent rediscovery in Corral Hollow in Alameda County, and in San Luis Obispo County. Also known historically from Contra Costa, Colusa, and Stanislaus counties.	March-April annual herb	None: marginally suitable habitat present. Would have been detectable.
Polygonaceae - Buckwheat Family				
Eriogonum truncatum Mount Diablo buckwheat	**Federal:** none **State:** CEQA **CNPS** 1A	Chaparral, coastal scrub, valley/foothill grassland on sandy soils. Presumed extinct. Known historically from Alameda, Contra Costa and Solano counties. Last seen in 1940.	April-September annual herb	None: no suitable habitat present. Would have been detectable.

(Continued on next page)

Table 4.8-1
Potentially Occurring Special-Status Plant Species (Continued)

Family *Scientific Name* Common Name	Status [1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Ranunculaceae - Buttercup Family				
Delphinium recurvatum recurved larkspur	**Federal:** SC **State:** CEQA **CNPS** 1B:2-2-3	Chenopod scrub, cismontane woodland and Valley/ foothill grassland, in alkaline places. Restricted to the Central Valley from Colusa to Kern counties, San Luis Obispo.	March-May perennial herb	None: no suitable habitat present. Would have been detectable.
Myosurus minimus ssp. apus little mousetail	**Federal:** SC **State:** CEQA **CNPS** 3:2-3-2	Alkaline vernal pools. Recorded throughout the Central Valley.	March-June annual herb	None: no suitable habitat present. Would have been detectable.
Ranunculus lobbii Lobb's aquatic buttercup	**Federal:** none **State:** none **CNPS** 4:1-2-3	Mesic sites in cismontane woodland, valley/foothill grassland, North Coast coniferous forest and vernal pools. Known from the San Francisco Bay Area to Mendocino and Napa counties.	March-May annual herb (aquatic)	None: marginally suitable habitat present. Would have been detectable.
Scrophulariaceae - Figwort Family				
Cordylanthus mollis ssp. mollis soft bird's-beak	**Federal:** FE **State:** CR **CNPS** 1B:3-2-3	Coastal saltmarsh. Known from fewer than 10 locations in Contra Costa, Napa, and Solano counties. Extirpated in Marin and Sonoma counties.	July-September annual herb (hemiparasite)	None: no suitable habitat present. Would have been detectable.
Limosella subulata Delta mudwort	**Federal:** none **State:** CEQA **CNPS** 2:2-3-1	Marshes and swamps, muddy or sandy intertidal flats. Limited to Sacramento and San Joaquin river deltas.	May-August perennial herb (stoloniferous)	None: no suitable habitat present. Would have been detectable.
Cyperaceae - Sedge Family				
Carex comosa bristly sedge	**Federal:** none **State:** CEQA **CNPS** 2:3-3-1	Marshes and swamps, lake margins. Believed extirpated in San Francisco, San Bernardino and Santa Cruz counties. Extant in Contra Costa, Lake, Shasta, San Joaquin and Sonoma counties.	May-September perennial herb (rhizomatous)	None: marginally suitable habitat present. Would have been detectable.
Liliaceae - Lily Family				
Calochortus pulchellus Mount Diablo fairy-lantern	**Federal:** none **State:** CEQA **CNPS** 1B:2-2-3	Chaparral, cismontane woodland, valley/foothill grassland. Known from Contra Costa and possibly Solano counties.	April-June perennial herb (bulbiferous)	None: no suitable habitat present. Would have been detectable.
Fritillaria liliacea fragrant fritillary	**Federal:** SC **State:** CEQA **CNPS** 1B:2-2-3	Coastal prairie, coastal scrub, valley/foothill grassland near the coast, on clay or serpentinite. Known from the Central Coast from Sonoma to Monterey counties and the San Francisco Bay Area.	February-April perennial herb (bulbiferous)	None: no suitable habitat present. Would have been detectable.

(Continued on next page)

Table 4.8-1
Potentially Occurring Special-Status Plant Species (Continued)

Family *Scientific Name* Common Name	Status [1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Poaceae - Grass Family				
Neostapfia colusana Colusa grass	**Federal:** FT **State:** CE **CNPS** 1B:2-3-3	Restricted to large, northern claypan vernal pools with alkaline soils that remain flooded until early summer. Known from Merced, Solano, Stanislaus and Yolo counties; presumed extirpated in Colusa County.	May-July annual herb	None: no suitable habitat present. Would have been detectable.
Potamogetonaceae - Pondweed Family				
Potamogeton zosteriformis eel-grass pondweed	**Federal:** none **State:** CEQA **CNPS** 2:2-2-1	Assorted freshwater marshes and swamps. Known from Contra Costa, Lake counties, Modoc, Lassen, and Shasta counties and Washington and Oregon.	June-July annual herb (aquatic)	None: marginally suitable habitat present. Would have been detectable.

[1] *Definitions of acronyms used are presented on page 4.8-33 of this chapter.*
Source: Zentner & Zentner, 2007.

Special-Status Wildlife Species

Special-status animal species include those listed by the U. S. Fish and Wildlife Service under the Federal Endangered Species Act (1996a, 1997, 2001), by the National Oceanic and Atmospheric Administration Fisheries (NOAA), and by the California Department of Fish and Game under the California Endangered Species Act (2004c,d). The U.S. Fish and Wildlife Service officially lists species as either Threatened, Endangered, or as Candidates for listing. Additional species receive federal protection under the Bald Eagle Protection Act (*e.g.*, bald eagle, golden eagle), the Migratory Bird Treaty Act and state protection under CEQA Section 15380(d). All birds, except European starlings, English house sparrows, and rock doves (pigeons), are protected under the Migratory Bird Treaty Act. In addition, many other species are considered by the California Department of Fish and Game to be California Species of Special Concern; these are listed in Remsen (1978), Williams (1986), and the California Department of Fish and Game (2004b). Although such species are not afforded official legal status, they may receive special consideration during the CEQA review process.

The California Department of Fish and Game further classifies some species under the following categories: Fully Protected, Protected birds (California Department of Fish and Game Code Section 3511), Protected mammals (California Department of Fish and Game Code Section 4700), Protected amphibian (California Department of Fish and Game Code Section 5050 and Chapter 5, Section 41), Protected reptile (California Department of Fish and Game Code Section 5050 and Chapter 5, Section 42), and Protected fish (California Department of Fish and Game Code Section 5515). The designation Protected indicates that a species may not be taken or possessed except under special permit from California Department of Fish and Game; Fully Protected indicates that a species can be taken for scientific purposes by permit only (CDFG 2004d). The California Department of Fish and Game Code Sections 3503, 3505, and 3800 prohibits the take, destruction or possession of any bird, nest or egg of any bird except English house sparrows and European starlings unless express authorization is obtained from the California Department of Fish and Game.

Based on a literature review and a familiarity with the fauna within the project region, a total of 75 special-status animal species were considered to have at least some potential to occur within the region or have been recorded historically in the project vicinity. Of these, 32 species are not expected to occur on-site because of factors such as lack of suitable habitat, isolation from known habitats, and the site being out of the species' known range. The remaining 43 species have some potential to occur on-site or have been observed on-site and are discussed in more detail below. Special-status wildlife species associated with habitats not present on-site, or in the immediate vicinity, are not discussed in this report.

Figure 4.8-4, Special-Status Wildlife Occurrence Map, shows the locations of special-status wildlife occurrence within a five-mile radius of the project area.

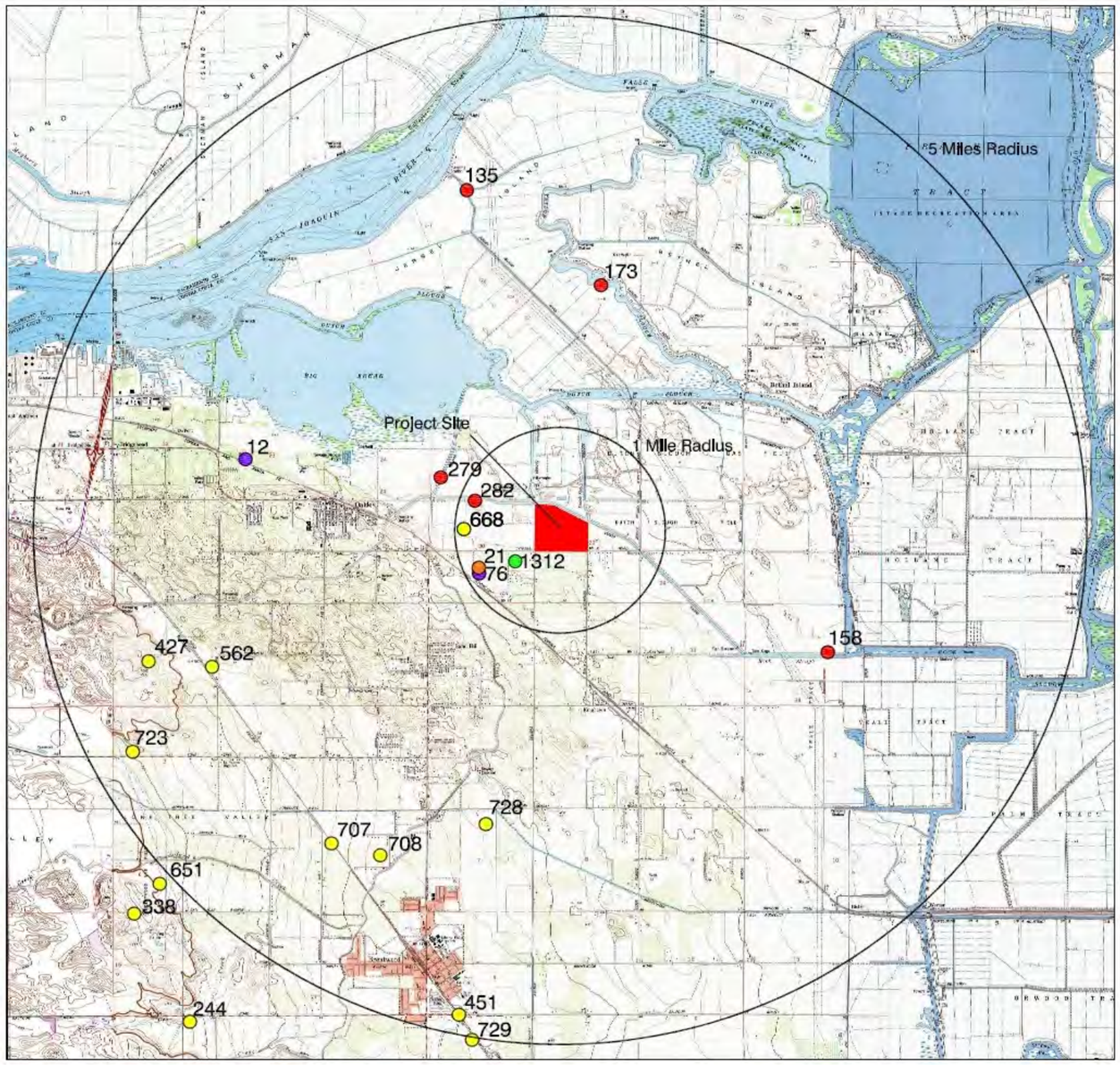
Table 4.8-2 identifies a full listing of all species considered as part of this project, and indicates the potential for these species to occur on the project site based upon the biological resource study prepared by Zenter and Zenter in February 2007. Definitions of acronyms used in the table are presented on page 4.8-33.

Those species that have potential to occur within the project area and/or are prominent in today's regulatory environment are discussed herein.

Of the 43 species with some potential to occur on-site, three were observed on the property during the course of the surveys. These include loggerhead shrike, a federal Species of Concern and a California Species of Special Concern; western burrowing owl, a federal Species of Concern and a California Species of Special Concern and the tricolored blackbird, a federal Species of Concern and a California Species of Special Concern. In addition, a white-tailed kite, a California Fully Protected Species of Special Concern was observed on the neighboring Emerson property and a Swainson's hawk, a federal Species of Concern and State-listed Threatened species was located on the neighboring Burroughs property. Because of similarities in the habitat on the proposed project site to the neighboring Emerson and Burroughs property, the potential on the Gilbert site for the Swainson's hawk and the white-tailed kite exists. Western pond turtle (*Clemmys marmorata*), a federal Species of Concern and a California Species of Special Concern; and northern harrier, a California Species of Special Concern, have a moderate potential to occur on-site given the presence of suitable habitat. The other 35 special-status species discussed below were found to have a low potential or are not expected to occur on-site.

Several special-status wildlife species that are strictly associated with the northern coastal salt marsh habitat present in the Bay-Delta were not included as part of this assessment because salt marsh habitat is not present on the study site or immediately adjacent to the site. These species include California clapper rail (*Rallus longirostris obsoletus*), which is federally-listed Endangered and state-listed Endangered, saltmarsh yellowthroat (*Geothlypis trichas sinuosa*), a California Species of Special Concern; Suisun song sparrow (*Melospiza melodia maxillaris*), a California Species of Special Concern; San Pablo song sparrow (*Melospiza melodia samuelis*), a California Species of Special Concern; Suisun shrew (*Sorex ornatus sinuosus*), a California Species of Special Concern; salt marsh vagrant shrew (*Sorex vagrans halicoetes*), a California Species of Special Concern; ornate salt marsh shrew (*Sorex ornatus salicornicus*), a California Species of Special Concern; and salt marsh harvest mouse (*Reithrodontomys raviventris*), federally-listed Endangered and State-listed Endangered.

Figure 4.8-4
Special Status Wildlife Occurrence Map



Project Name:	Gilbert
Project Number:	833 STC
Project File:	C:\projects\800-899\833stc\occurrence07.dwg
Date:	2/13/07
Map Source:	USGS 7.5 MIN
Quads:	Antioch N, Antioch S, Bouldin Island, Brentwood, Woodward Island, CA

Scale: 1 Inch = 5000 Feet (0 — 5000 — 10000)

Project North

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FIGURE 4.8-4
Special Status Wildlife Occurrence Map
Gilbert Project Site
Oakley, CA

Legend

- Burrowing Owl Occurrence Site — *Athene cunicularia*
- Silvery Legless Lizard Occurrence Site — *Anniella pulchra pulchra*
- Swainson's Hawk Occurrence Site — *Buteo swainsoni*
- Western Pond Turtle Occurrence Site — *Clemmys marmorata*
- White-tailed kite Occurrence Site — *Elanus leucurus*
- 158 — CNDDB Occurrence Number
- Project Boundary

Table 4.8-2
Potentially Occurring Special-Status Wildlife Species

Scientific Name **Common Name**	**Status**		**Habitat Affinities and Reported Localities in the Project Area**	**POTENTIAL FOR OCCURRENCE ON SITE**
INVERTEBRATES				
Anthicus antiochensis Antioch Dunes anthicid beetle	**Federal:** **State**:	FSC None	Formerly inhabited sand dunes at the Antioch Dunes, Contra Costa County. Last seen in the early 1950's before industrialization of the surrounding area. New populations recently found on the Sacramento and Feather Rivers.	Not expected: no records, degraded habitat, other analyses negative.
Anthicus sacramento Sacramento anthicid beetle	**Federal:** **State:**	FSC None	Inhabits sandy substrate among willows in riparian habitats. Populations recently documented along the Sacramento, San Joaquin, and Feather Rivers.	Not expected: no records, degraded habitat, other analyses negative.
Apodemia mormo langei ***Lange's metalmark butterfly***	**Federal:** **State:**	FE None	Known from the Antioch Dunes and requires naked-stem buckwheat (*Eriogonum nudum* var. *auriculatum*).	Not expected: no records, host plant absent, other analyses negative.
Branchinecta longiantenna Longhorn fairy shrimp	**Federal:** **State:**	FE None	Inhabits clay and grass-bottomed vernal pools in grasslands, and pools in sandstone depressions that are typically filled by winter and spring rains. Known from disjunct populations along the eastern margin of the Central Coast Range from Contra Costa County south to San Luis Obispo County.	Low: marginal habitat on-site but none nearby and initial surveys negative.
Branchinecta lynchi Vernal pool fairy shrimp	**Federal:** **State:**	FT None	Inhabits vernal pools in grasslands in the Central Valley, Coast Ranges and South Coast mountains, specifically the Slanted Rocks Area, west of Byron Hot Springs, in Contra Costa County. Occur in small depressions in sandstone outcrops surrounded by foothill grasslands. Other common habitat is a swale, earth slump, or basalt-flow depression basin with a grassy or muddy bottom; found in unplowed grasslands. Occurrences are noted in the Central Valley, Coast Ranges, and South Coast mountains. Active between December and May.	Low: marginal habitat on-site but none nearby and initial surveys negative.
Branchinecta mesovallensis Midvalley fairy shrimp	**Federal:** **State:**	FSC None	Inhabits small, grass-bottomed vernal pools in only a handful of counties within the Great Central Valley, including Sacramento, Solano, Merced, Madera, San Joaquin, Fresno, and Contra Costa Counties.	Low: marginal habitat on-site but none nearby and initial surveys negative.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	**Federal:** **State:**	FT None	Inhabits riparian and oak savanna habitats in the Central Valley. Requires elderberry (*Sambucus* spp.) as host plant for all stages of its life-cycle.	Not expected: no elderberries present.
Elaphrus viridis Delta green ground beetle	**Federal:** **State:**	FT None	Associated with vernal pool and seasonally wet pool habitats throughout the Central Valley. Emerges in January, breeds in February and March, and then enters a period of dormancy in May as pools dry up.	Not expected: no suitable habitat on-site. Outside of known range.

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Table 4.8-2
Potentially Occurring Special-Status Wildlife Species (Continued)

Hygrotus curvipes Curved-foot hygrotus diving beetle	**Federal:** **State:**	FSC None	Inhabits small, drying, mineralized pools formed by winter rains, small ponds, and pools in intermittent streams fringed by salt and salt-tolerant vegetation like salt grass (*Distichlis spicata*). Has been found in stock ponds that are near mineralized pools or intermittent streams. Possible habitat in vernal pools and other wetland habitat in the Sacramento River Delta. In Contra Costa County they have been seen in Oakley, south of Brentwood, near Brushy Peak, near Byron Hot Springs, and near Brushy Creek.	Not expected: marginal habitat on-site but none observed during surveys.
Lepidurus packardi Vernal pool tadpole shrimp	**Federal:** **State:**	FE None	Inhabits vernal pools in grassland habitats in the Central Valley between Shasta County and Merced County. Eggs hatch within a month of inundation; adults present until pools dry in the spring.	Low: marginal habitat on-site but none nearby and initial surveys negative.
Linderiella occidentalis California linderiella (California fairy shrimp)	**Federal:** **State:**	FSC None	Usually inhabits large, fairly clear vernal pools and lakes; sometimes found in small pools located in grasslands in the Central Valley, Coast Ranges, and South Coast Mountains.	Low: marginal habitat on-site but none nearby and initial surveys negative.
Lytta molesta Molestan blister beetle	**Federal:** **State:**	FSC None	Found in small, drying mineralized pools formed by the winter rains, small pools fringed by salt crusts, and intermittent streams. Most of the sites have halophytic vegetation. Adults congregate on food plants that typically grow in valley grassland and vernal pool habitats. Larvae is parasitic on wild, ground-nesting bees. Known from the Brentwood area.	Not expected: marginal habitat on-site but none observed during surveys
Perdita hirticeps luteocincta Yellow-banded andrenid bee	**Federal:** **State:**	FSC	Inhabit sandy substrates. Recorded only in the Antioch Dunes in Contra Costa County, in 1936.	Not expected: no records, no host plants, other analyses negative.
Perdita scituta antiochensis Antioch andrenid bee	**Federal:** **State:**	FSC None	Inhabits sandy dunes. Recorded only from Antioch Dunes and Oakley, Contra Costa County. Observed visiting flowers of California matchweed (*Gutierrezia californica*).	Not expected: no records, degraded habitat, other analyses negative.
FISH				
Acipenser medirostris Green sturgeon	**Federal:** **State:**	FC CSC	Anadromous. Inhabits estuaries of large rivers. Migrates far inland to spawn. Spawns during spring in rivers in deep, cold, fast-moving water. Only known to spawn in the Sacramento, Klamath, and Rogue Rivers. Estuaries serve as nurseries. Adults are mostly marine, spending limited time in estuaries and rivers. Occurs from Alaska to Baja California.	Not expected: moderate habitat in Dutch Slough but no work will occur there.
Archoplites interruptus Sacramento perch	**Federal:** **State:**	FSC CSC	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefer warm water. Aquatic vegetation is essential for young. Tolerant of wide ranges of physio-chemical water conditions.	Not expected: suitable habitat in Dutch Slough but no work will occur there.
Hypomesus transpacificus Delta smelt	**Federal:** **State:**	FT ST	Historically found throughout the lower and middle reaches of the Sacramento-San Joaquin Delta. Spawning takes place between December-April in side channels and sloughs in the middle reaches of the Delta.	Not expected: suitable habitat in Dutch Slough but no work will occur there.

(Continued on next page)

Table 4.8-2
Potentially Occurring Special-Status Wildlife Species (Continued)

Lampetra ayresi River lamprey	**Federal:** **State:**	FSC CSC	Anadromous. Spawns during spring in clear gravel riffle pools in coastal streams. Young metamorphose upriver from salt water and enter the ocean in the following late spring. Restricted to coastal streams from Alaska to the San Francisco Bay. In California, the species has only been recorded in the Sacramento-San Joaquin Rivers and the Russian River.	Not expected: no habitat in Dutch Slough and no work will occur there.
Lampreta tridentate Pacific lamprey	**Federal:** **State:**	FSC	Anadromous. Spawns during spring in clear, gravel riffle pools in clear, coastal streams. Adults feed in the ocean. Distributed from Alaska to the Santa Ana River.	Not expected: moderate habitat in Dutch Slough but no work will occur there.
Oncorhynchus mykiss Steelhead (Central Valley, California ESU)	**Federal:** **State:**	FT None	The ESU includes all naturally spawned populations of steelhead (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries. Excluded are steelhead from San Francisco and San Pablo Bays and their tributaries. Little historical data exists for the San Joaquin River Basin. McEwan and Jackson (1996) reported a small remnant run in the Stanislaus River. Steelhead reported in Tuolumne River in 1983 and in Merced River. May have historically been in many of the San Joaquin River tributaries, especially during wet years.	Not expected: no habitat in Dutch Slough and no work will occur there.
Oncorhynchus tshawytscha Chinook salmon (Central Valley fall/late fall-run ESU)	**Federal:** **State:**	FC CSC	The ESU includes all naturally spawned populations of fall-run Chinook salmon in the Sacramento and San Joaquin River Basins and their tributaries, east of Carquinez Strait, California. The following California counties contain major river basins with critical spawning and rearing habitat: Alameda, Butte, Calaveras, Colusa, Contra Costa, Glenn, Mariposa, Merced, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Santa Clara, Shasta, Solano, Stanislaus, Sutter, Tehama, Trinity, Tuolumne, Yolo, and Yuba.	Not expected: no habitat in Dutch Slough and no work will occur there.
Oncorhynchus tshawytscha Chinook salmon (Central Valley spring-run ESU)	**Federal:** **State:**	FT ST	The ESU includes all naturally spawned populations of spring-run Chinook salmon in the Sacramento River and its tributaries in California. These salmon are anadromous, inhabiting open ocean and coastal streams. Adults move upstream March-July and begin spawning in August.	Not expected: no habitat in Dutch Slough and no work will occur there.
Oncorhynchus tshawytscha Chinook salmon (winter-run)	**Federal:** **State:**	FE SE	This salmon is anadromous, inhabiting open ocean and costal streams. Adults move upstream January-June and begin spawning in April. Downstream migrant smolts move past Red Bluff August-October.	Not expected: no habitat in Dutch Slough and no work will occur there.
Pogonichthys macrolepidotus Sacramento splittail	**Federal:** **State:**	FSC CSC	Lower Delta minnow of the backwater slough areas. Believed to spawn over shoreline vegetation or over gravel in creek tributaries of large rivers during spring high water levels.	Not expected: suitable habitat in Dutch Slough but no work will occur there.

(Continued on next page)

Table 4.8-2
Potentially Occurring Special-Status Wildlife Species (Continued)

Spirinchus thaleichthys Longfin smelt	**Federal:** **State:**	FSC CSC	Inhabits estuaries and bays near to shore. Occurs along the Pacific coast from Alaska to the Monterrey Bay. In the San Francisco Bay, its main populations are in San Pablo Bay. It ascends coastal streams from October to December to spawn. It is an important forage species.	Not expected: suitable habitat in Dutch Slough but no work will occur there.
AMPHIBIANS				
Ambystoma californiense California tiger salamander	**Federal:** **State:**	FT CSC	Breeds in temporary or semi-permanent pools. Seeks cover in rodent burrows in grasslands and oak woodlands. Inhabits the Coast Ranges from Santa Barbara to Sonoma counties along the coast and inland to Colusa, Yolo and Tulare counties.	Not expected: no nearby records, none observed during surveys, other analyses negative.
Rana (=aurora draytonii) draytonii California red-legged frog	**Federal:** **State:**	FT CSC	Prefers semi-permanent and permanent stream pools, ponds, and creeks with emergent and/or riparian vegetation. Will occupy upland areas during the wet winter months.	Not expected: no nearby records, none observed during surveys, other analyses negative.
Spea hammondii Western spadefoot toad	**Federal:** **State:**	FSC CSC	Breeds in temporary pools following winter and spring rains (January-May); larvae transform within 3-11 weeks. Aestivates in burrows in loose soils. Occurs from Redding, Shasta County, southward into northwestern Baja California, Mexico, from sea level to elevations around 4500 feet. In California, their range is entirely west of the Sierra-desert range axis.	Not expected: no nearby records, none observed during surveys, other analyses negative.
Reptiles				
Anniella pulchra pulchra Silvery legless lizard	**Federal:** **State:**	FSC CSC	Inhabits sparsely vegetated areas on beaches and in chaparral, oak woodlands, and riparian areas. Needs loose soils for burrowing (sand, loam, or humus). Burrows in washes, dune sand, and loose soils at the base of slopes or in intermittent streams. Must have moist soil.	Low: suitable habitat present but not detected during directed surveys.
Clemmys marmorata Western pond turtle	**Federal:** **State:**	FSC CSC	Prefers permanent, slow-moving creeks, streams, ponds, rivers, marshes, and irrigation ditches with basking sites and a vegetated shoreline. Needs upland sites for egg laying. Occurs from the Oregon border to the San Francisco Bay, inland throughout the Sacramento Valley, and south along the coastal zone to San Diego County.	Moderate: suitable habitat present and seen near site recently.
Masticophi lateralis euryxanthus Alameda whipsnake (striped racer)	**Federal:** **State:**	FT ST	Restricted to chaparral and coastal scrub of the Coast Ranges. Uses rock outcrops for refugia. Inhabits appropriate habitat on south, southwest- and southeast-facing slopes and ravines where the shrubs from a vegetative mosaic with grasses. Uses rodent burrows. Feeds on a number of items including fence lizards (*Sceloporus* spp.)	Not expected: no suitable habitat and outside of known range.
Phrynosoma coronatum frontale California horned lizard	**Federal:** **State:**	FSC CSC	Occurs in scrub and grassland on sandy soils; active above ground between April and October. Preys primarily on native ant species. The species is thought to be extinct in this region based on museum specimens.	Not expected: likely extirpated from area.

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Table 4.8-2
Potentially Occurring Special-Status Wildlife Species (Continued)

Thamnophis gigas Giant garter snake	**Federal:** **State:**	FT ST	Inhabits the edges of marshes, sloughs, ponds, small lakes, low gradient streams, and agricultural wetlands such as irrigation and drainage canals and rice fields. Requires high ground for basking and escape during winter flooding. Known in the Central Valley from Fresno north to the Sutter Buttes. Recently recorded from Sherman Island. Distribution in Contra Costa County unknown.	Not expected: marginally suitable present on-site but recent protocol-level surveys of the site and environs were negative.
Birds				
Agelaius tricolor Tricolored blackbird (nesting colony)	**Federal:** **State:**	FSC CSC	Nests primarily in dense freshwater marshes with cattail or tules. Forages in grasslands. Largely endemic to California. Permanent resident in the Central Valley and along the coast from Marin to San Diego Counties. Also known from Lake, Sonoma, and Solano Counties. Grasslands provide suitable foraging habitat only.	Non-nesting birds observed but nesting unlikely due to absence of observations.
Athene cunicularia hypugea Burrowing owl (burrow sites)	**Federal:** **State:**	FSC CSC	Open, dry grasslands, deserts, prairies, farmland and scrublands with abundant active and abandoned mammal burrows. Occurs in lowlands throughout California.	One wintering burrowing owl observed on Gilbert Property in Nov. 2004. One off-site approx 200ft south of Cypress Road. No breeding observations.
Branta Canadensis leucopareia Aleutian Canada goose	**Federal:** **State:**	MB FSC None	One of eleven recognized subspecies. Winters in wetlands, grasslands, and cultivated fields. Known to commute daily between Delta islands and the San Joaquin River area near Modesto.	Not expected
Buteo regalis Ferruginous hawk (wintering)	**Federal:** **State:**	FSC CSC	Forages over open terrain in plains and foothills where there are abundant ground squirrels or other mammals. Does not nest in California. Common east of San Francisco Bay during the winter months.	Not expected: does not nest in California.
Buteo swainsoni Swainson's hawk (nesting only)	**Federal:** **State:**	FSC ST	Nests in a variety of tree species often in or near riparian habitat. Forages in grasslands and agricultural fields. Highest nesting densities are in Yolo County. Relatively common throughout the lower Sacramento and San Joaquin Valleys from March-September. Winters in pampas of South America. Forages on small rodents during breeding season and insects during the non-breeding season.	Highly likely; observed foraging on property and in vicinity.
Calypte costae Costa's hummingbird	**Federal:** **State:**	FSC None	Resident of southern California and Baja California, strays as far north as Canada. Desert and semi-desert, arid brushy foothills, chaparral; in migration and winter also in adjacent mountains and in open meadows and gardens. Most commonly in canyons and washes when nesting. Nests in tree, shrub, vine, or cactus, often about 1.5 m from ground, sometimes near water, often from it. In chaparral, nests often at break along edge or in tall bush.	Not expected: no suitable habitat on-site.

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Table 4.8-2
Potentially Occurring Special-Status Wildlife Species (Continued)

Cardualis lawrencei Lawrence's goldfinch	**Federal:** **State:**	FSC None	Breeds throughout northern and central California, winters in Baja California east to Texas. Inhabits oak woodland, chaparral, riparian woodland, piñon-juniper association, and weedy areas in arid regions but usually near water. Often nests in dense foliage in conifers, 1-12 m above ground. Highly social; forms loose flocks of 20-30 birds. Flocks may include other species of goldfinches or other passerines.	Not expected: no suitable habitat, outside of known range.
Chaetura vauxi Vaux's swift (nesting)	**Federal:** **State:**	FSC CSC	Nest and roost in cavities with a vertical entry, *e.g.* tree hollows, chimneys, etc. Breeds from coastal regions of southeast Alaska south to San Francisco Bay and within the Sierra Nevada. Occurs in woodlands, and near lakes and rivers.	Not expected: No suitable nesting habitat. Outside of known range.
Charadrius montanus Mountain plover (wintering only)	**Federal:** **State:**	FPT CSC	Nests on arid plains and short grass prairies in the western Great Plains and Great Basin. Winters in open arid habitats, as well as fallow fields.	Not expected: Outside of known range.
Circus cyaneus Northern harrier (nesting)	**Federal:** **State:**	MB CSC	Nests and forages in grasslands and agricultural fields. Nests on ground in shrubby vegetation, dense grass, or crops such as wheat and barley, often at the edge of marshes.	Moderate: suitable foraging and nesting habitat present.
Dendroica petechia brewsteri California yellow warbler	**Federal:** **State:**	MB CSC	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders, and in mature chaparral. May also inhabit oak and coniferous woodlands and urban areas near stream courses.	Not expected: no riparian habitat on-site.
Elanus leucurus White-tailed kite (nesting sites)	**Federal:** **State:**	FSC CFP	Inhabits agricultural areas, low rolling foothills, valley margins with scattered oaks and river bottomlands, or marshes adjacent to deciduous woodlands. Prefers open grasslands, meadows, marshes, and agricultural fields for foraging.	High: Observed foraging on property and in vicinity.
Empidonax traillii brewsteri Little willow flycatcher (nesting)	**Federal:** **State:**	FSC SE	Inhabits riparian areas and wet meadows with abundant willows for breeding. Occurs in isolated areas in the foothills of the Sierra Nevada.	Not expected: No suitable nesting habitat.
Eremophila alpestris actia California horned lark	**Federal:** **State:**	MB CSC	Nests and forages on ground in open grassland. Often found in agricultural areas. Will nest on bare ground or among sparse vegetation. Known from vicinity of San Francisco Bay.	Low: marginally suitable habitat present.
Falco columbaritus Merlin (wintering)	**Federal:** **State:**	MB CSC	Winters in open grasslands and woodlands, often along coast near concentrations of shorebirds, which it feeds on in addition to small mammals and insects. Does not breed in California.	Not expected.
Falco peregrinus anatum American peregrine falcon (nesting)	**Federal:** **State:**	MB CFP SE	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes. Permanent resident in the North and South Coast Ranges. Winters in the Central Valley southward through the Transverse and Peninsular Ranges. Feeds almost exclusively on birds.	Not expected: no nesting habitat.

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Table 4.8-2
Potentially Occurring Special-Status Wildlife Species (Continued)

Grus Canadensis tabida Greater sandhill crane	**Federal:** **State:**	None ST CFP	Summers in open terrain near shallow freshwater lakes or marshes. Winters in plains and valleys near bodies of fresh water. Breeds from Sierra County northward to east side of the Cascade Range. Winters in the Central Valley and southern Imperial County.	Not expected
Haliaeetus leucocephalus Bald eagle	**Federal:** **State:**	FT MB CFP SE	Typically forage over large bodies of water, or large free-flowing rivers. Fish are their primary prey item, but they will also feed on waterfowl. Nests are built in tall trees near water bodies that support fish and waterfowl populations.	Not expected.
Lanius ludovicianus Loggerhead shrike	**Federal:** **State:**	FSC CSC	Nests in woodland and scrub habitats at margins of open grasslands. Often uses lookout perches such as fence posts. Resident and winter visitor in lowlands and foothills throughout California.	Moderate: Observed foraging on-site, suitable nesting habitat on-site.
Laterallus jamaicensis coturniculus California black rail	**Federal:** **State:**	FSC ST CFP	Secretive marsh bird found in damp areas with dense grass. Year-round resident in the greater Bay Area and more recently have been recorded from the Sierra Foothills. Inhabits tidal marshes, grassy marshes, stubble fields and wetlands. Nesting habitat is characterized by un-fluctuating water levels with a depth of less than 3 cm and dense vegetative cover.	Not expected: no salt marsh habitat on-site.
Limosa fedoa Marbled godwit	**Federal:** **State:**	FSC None	Migrates through California in fall. Inhabits marshes and flooded plains; in migration and when not breeding also on mudflats, beaches, and open shallow water along shorelines.	Not expected: No mudflat habitat on-site.
Melanerpes lewis Lewis' woodpecker	**Federal:** **State:**	FSC None	Resident across most of the western United States, though rare in the San Francisco Bay Area. Important habitat features include an open tree canopy, a brushy understory with ground cover, dead trees for nest cavities; dead or downed woody debris, perch sites, and abundant insects. Uses open ponderosa pine forests, open riparian woodlands dominated by cottonwood (*Populus* spp.), and logged or burned pine. Also uses oak (*Quercus* spp.) woodlands, orchards, piñon-juniper woodlands, other open coniferous forests, and agricultural lands. Apparently prefers open ponderosa pine at high elevations and open riparian forests at lower elevations. Often use burned pine forests, although suitability of post-fire habitats varies with the age.	Not expected: no suitable habitat.
Numenius americanus Long-billed curlew (nesting)	**Federal:** **State:**	FSC CSC	Nests at high elevations in grasslands adjacent to lakes or marshes. Winters along the coast on mudflats, or in interior valleys in grasslands and agricultural fields.	Not expected: no suitable nesting habitat.
Picoides nuttalliii Nuttall's woodpecker	**Federal:** **State:**	SLC None	Resident throughout California east of the Sierra Nevada Mountains. Inhabits oak forest and woodland, chaparral and riparian (especially willow-cottonwood) woodland. Extensively uses *Quercus douglasii* during the breeding season. Both sexes dig out a cavity in a tree, 1-18 m above ground.	Not expected: no suitable habitat.

Table 4.8-2
Potentially Occurring Special-Status Wildlife Species (Continued)

Plegadis chihi White-faced ibis (rookeries only)	**Federal:** **State:**	FSC CSC	Breeds in freshwater marsh habitats in the Great Plains and Great Basin. Winters in marsh habitats in the Central Valley of California. Forages in irrigated fields.	Not expected: no rookery habitat on-site.
Rallus longirostris obsoletus California clapper rail	**Federal:** **State:**	FE SE	Inhabits tidal salt marshes of the greater San Francisco Bay, although some individuals use brackish marshes during the spring breeding season. It formerly occurred at Humboldt Bay in Humboldt County, Elkhorn Slough in Monterey County, and Morro Bay in San Luis Obispo County.	Not expected: no suitable habitat present.
Riparia riparia Bank swallow (nesting colonies only)	**Federal:** **State:**	FSC ST	Nests in colonies on sandy cliffs near water, marshes, lakes, streams, and the ocean. Forages in fields. Largest remaining populations occur along the Sacramento River from Tehama County to Sacramento County. Also found along the Feather and lower American Rivers, and in the Owens Valley. Breeding populations also present in San Francisco County, and at Año Nuevo in southern San Mateo County.	Not expected: no suitable habitat.
Selasphorus rufus Rufous Hummingbird	**Federal:** **State:**	FSC None	Breeds from Oregon border to southern Sonoma County. Nests in berry tangles, shrubs, and conifers. Favors habitats rich in nectar-producing flowers.	Not expected: no suitable habitat. Outside of known range.
Selasphorus sasin Allen's hummingbird	**Federal:** **State:**	FSC None	Breeds throughout coastal California south to Santa Barbara. Chaparral, thickets, brushy hillsides, open coniferous woodlands, and gardens near the coast, often in ravines and canyons. Nests on twigs or forks of trees or shrubs, sometimes on stalks of plants, among vines, or occasionally in buildings.	Not expected: no suitable habitat. Outside of known range.
Toxostoma redivivum California thrasher	**Federal:** **State:**	FSC None	Ranges from Humboldt and Shasta Counties south to Baja California. Inhabits lowland and coastal chaparral, and riparian thickets. Usually seen on or near ground. Nests constructed by both adults in bushes and small trees. Often seen in association with brown towhee and wren-tit.	Not expected: no suitable habitat.
Mammals				
Antrozous pallidus Pallid bat	**Federal:** **State:**	None CSC	Inhabits open, dry habitats such as deserts, grasslands, and shrublands with rocky areas for roosting. Roosts in caves, mine tunnels, crevices in rocks, buildings, and trees. Forages in open habitats.	Not expected but marginal roosting habitat exists on-site and should be surveyed prior to construction.
Corynorhinus (=Plecotus) townsendii townsendii Townsend's western big-eared bat	**Federal:** **State:**	FSC CSC	Roosting sites include caves, mine tunnels, abandoned building, and other structures. Inhabits a variety of plant communities including coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands, and deserts. Most commonly associated with mesic sites. Highly sensitive to human disturbances; a single visit by humans can cause bats to abandon roosts.	Not expected but marginal roosting habitat exists on-site and should be surveyed prior to construction.

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Table 4.8-2
Potentially Occurring Special-Status Wildlife Species (Continued)

Eumops perotis californicus Western Mastiff Bat	**Federal:** **State:**	FSC CSC	Roosts in cliff faces and buildings. Ranges from California to Texas.	Not expected but marginal roosting habitat exists on-site and should be surveyed prior to construction.
Myotis ciliolabrum Small-footed myotis bat	**Federal:** **State:**	FSC None	Roots in caves, mine tunnels, and crevices in rocks and buildings, generally near forested areas. Feeds low among trees or over shrubs. Distribute *(Continued on next page)* Great Plains states to the East Coas..	Not expected but marginal roosting habitat exists on-site and should be surveyed prior to construction.
Myotis evotis Long-eared myotis bat	**Federal:** **State:**	FSC None	Inhabits thinly forested areas around buildings or trees. Occasionally found in caves. Does not occur in large colonies. Distributed throughout the western U.S.	Not expected but marginal roosting habitat exists on-site and should be surveyed prior to construction.
Myotis thysanodes Fringed myotis bat	**Federal:** **State:**	FSC None	Roosts in colonies in caves and attics of old buildings. Distributed throughout the western U.S. and into Mexico. Most frequent in coastal and montane forests and around mountain meadows.	Not expected but marginal roosting habitat exists on-site and should be surveyed prior to construction.
Myotis volans Long-legged myotis bat	**Federal:** **State:**	FSC None	Roosts colonially in buildings and small pockets, and crevices in rock ledges. Distributed throughout the western U.S., Mexico, and Canada.	Not expected but marginal roosting habitat exists on-site and should be surveyed prior to construction.
Myotis yumanensis Yuma myotis bat	**Federal:** **State:**	FSC None	Roosts colonially in caves, tunnels, and buildings. Inhabits arid regions. Distributed throughout the western U.S., Mexico, and Canada.	Not expected but marginal roosting habitat exists on-site and should be surveyed prior to construction.
Neotoma fuscipes annectens San Francsico dusky-footed woodrat	**Federal:** **State:**	FSC CSC	Evergreen or live oaks and other dense, thick-leaved trees and shrubs are important habitat components for this species. In riparian areas, highest densities of woodrats and their houses are often encountered in willow thickets with an oak overstory. Typically build large houses on the ground in thickets made of twigs, leaves, and debris.	Not expected: no potential habitat. Outside of known range.
Neotoma fuscipes riparia San Joaquin Valley (riparian) woodrat	**Federal:** **State:**	FE CSC	Inhabits brushy and forested areas in riparian habitats. Builds nests in trees, snags, and logs. Occurs along the San Joaquin, Stanislaus, and Tuolumne Rivers.	Not expected: marginal habitat. Outside of known range.
Perognathus inornatus inornatus San Joaquin pocket mouse	**Federal:** **State:**	FSC None	Inhabits grassland and scrub habitats in Central and San Joaquin Valleys. Associated with friable soils.	Not expected: marginal habitat. Outside of known range.
Sylvilagus bachmani riparitus Riparian brush rabbit	**Federal:** **State:**	FE SE	Riparian forest with a dense shrub layer, dense thickets (e.g., wild rose, willows, blackberries) close to the San Joaquin River.	Not expected: marginal habitat. Outside of known range.

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Table 4.8-2
Potentially Occurring Special-Status Wildlife Species (Continued)

Vulpes macrotis mutica San Joaquin kit fox	**Federal:** **State:**	FE ST	Range includes dry annual grassland or grassy open stages with scattered shrubby vegetation. Requires loose-textured sandy soils for denning, and suitable prey base.	Low: marginal habitat. Main population over 10 miles south. Isolated from individual observations by development.

CALIFORNIA NATIVE PLANT SOCIETY DESIGNATIONS (CNPS)

List 1: Plants of highest priority
List 1A: Plants presumed extinct in California
List 1B: Plants rare and endangered in California and elsewhere
List 2: Plants rare and endangered in California but more common elsewhere
List 3: Plants about which additional data are needed
List 4: Plants of limited distribution

CNPS R-E-D Codes

R (Rarity)
1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.
2 = Occurrence confined to several populations or to one extended population.
3 = Occurrence limited to one or a few highly restricted populations, or present in such low numbers that it is seldom reported.
? = More data are needed

E (Endangerment)
1 = Not endangered
2 = Endangered in a portion of its range
3 = Endangered throughout its range
? = More data are needed

D (Distribution)
1 = More or less widespread outside California
2 = Rare outside California
3 = Endemic to California
? = More data are needed

Note: currently, all CNPS list 1B and 2 taxa are considered "Special Plants" by the CDFG.

U.S. FISH AND WILDLIFE DESIGNATIONS (USFWS)

FE = listed as Endangered by the Federal Government
FT = listed as Threatened by the Federal Government
FPE= proposed as Endangered by the Federal Government
FPT= proposed as Threatened by the Federal Government
FSS= federal sensitive species, as listed by Bureau of Land Management and USFWS
C[1] = Candidate; taxa for which USFWS has sufficient biological information to support a proposal to list as Endangered or Threatened.
SC[1]= Species of Concern
MB= migratory non-game birds of management concern to the USFWS; protected under the Migratory Bird Treaty Act.

[1]As of Feb. 28, 1996, all Category 1 candidate taxa are now regarded merely as Candidates.

CALIFORNIA DEPT. OF FISH AND GAME DESIGNATIONS (CDFG)

CE = Listed as Endangered by the State of California
CR = Listed as Rare by the State of California
CT = Listed as Threatened by the State of California
CPE= Proposed for listing as Endangered
CSC= California Species of Special Concern
* = Taxa that are restricted in distribution, declining throughout their range, or associated with habitats that are declining in California.
CFP= Fully protected under the Cal. Fish and Game Code.
CP = Protected Species under Cal. Code of Regulations.
CEQA= Taxa which are considered to meet the criteria for listing as Endangered, Threatened or Rare by the CDFG; impacts to such taxa must be addressed in CEQA documents.
CEQA= Taxa that might be locally significant; should be evaluated for consideration during preparation of CEQA documents, as recommended by the CDFG.

Invertebrates

The project site supports a few habitat types, with a variety of native and non-native vegetative species that could potentially harbor special-status invertebrate species. Entomologist Dick Arnold conducted a habitat assessment for special-status invertebrates on the neighboring Cypress Grove residential development site (Entomological Consulting Services 2002) and on-sites in the East Cypress Corridor Specific Plan area (Entomological Consulting Services 2005) to address, in particular, the interior dune communities located on Cypress Grove, a portion of which is contiguous with the sand mound on the 150-acre Emerson property, located to the west of the Gilbert property site. Twenty-one invertebrate species were considered as part of the Cypress Grove analysis. Invertebrate species were not considered to have a moderate or high potential to occur on-site; however, three insect species associated with sand dunes in the region were considered to have a low potential to occur on-site, including San Joaquin dune beetle (*Coelus gracilis*), a federal Species of Concern, Antioch efferian robberfly (*Efferia antiochi*), a federal Species of Concern, and Middlekauf's shieldback katydid (*Idiostatus middlekaufi*), a federal Species of Concern. The remaining eighteen invertebrate species are not expected to occur on-site.

Invertebrate species that are prominent in today's regulatory environment are addressed herein in further detail.

Lange's Metalmark Butterfly

The Lange's metalmark butterfly (*Apodemia mormo langei*), federally-listed Endangered, is known only from the Antioch dunes in Contra Costa County, approximately seven miles west of the project area. This butterfly is associated only with the larval host plant naked-stem buckwheat (*Eriogonum nudum* var. *auriculatum*). Although marginally suitable habitat for naked-stem buckwheat is present in sandy soils on-site, this plant species was not detected during the reconnaissance site visit, and is presumed absent. Based on an absence of the larval host plant, the restricted range of the butterfly, and the entomological report for the adjacent Cypress Grove site (Entomological Consulting Services 2002) which suggested that the butterfly was not likely to occur, the Lange's metalmark butterfly is not expected to occur on-site.

Valley Elderberry Longhorn Beetle

The Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), federally-listed Threatened, is believed to be restricted to the Central Valley wherever the beetle's food plant, the blue elderberry shrub (*Sambucus mexicana*) occur, primarily along riparian areas. The historical range of the beetle may have included the entire Sacramento and San Joaquin Valley riparian zone. Today less than four percent of the historical 400,000 acres of riparian forest remain (Barr 1991).

Elderberry shrubs do not occur on-site. Due to the lack of on-site habitat and the negative findings for the neighboring Cypress Grove site (Entomological Consulting Services

2002), which also indicated that the area is within the range of the unprotected beetle *Desmocerus californicus californicus*, (which occupies the same habitat as the valley elderberry longhorn beetle) the Valley elderberry longhorn beetle is not expected to occur on-site.

Vernal Pool Fairy Shrimp

Fairy shrimp are aquatic crustaceans associated with vernal pools, grassy swales, and other temporarily ponded bodies of water in California, such as seasonal wetlands. As a taxonomic group, they are referred to as branchiopods. Most branchiopods are small freshwater organisms with limited specialization of their appendages as compared to other crustacean groups.

Vernal pools and seasonal wetlands form in regions with Mediterranean climates where shallow depressions fill with water during fall and winter rains, which evaporate in the spring. Fairy shrimp are ecologically dependent upon these seasonal fluctuations in their environment. After pools become inundated with water, these crustaceans hatch from eggs that have been dormant in the soil from previous wet seasons. The eggs are highly tolerant of heat, cold, and prolonged desiccation. In general, two to three weeks of inundation are required for eggs to hatch and for completion of development, although this time period varies by species. When the pool dries, the eggs survive as cysts among the soil and detritus at the bottom of the pool. Generally, one generation occurs per rainy season, but in some locations and in some years, depending on weather patterns and rainfall amounts, conditions may permit two or more generations to complete their development. Egg cysts are dispersed from one pool to another via wind, water, or animals such as birds that may ingest them, or cattle that may pick them up on their feet.

Fairy shrimp are found in vernal pools, seasonal wetlands, and swales of various sizes ranging from small puddles to large water bodies. The water chemistry characteristics (pH, turbidity, total dissolved solids, conductivity, and alkalinity) of these habitats vary widely as well (Eng *et al.* 1990 qtd. in Zentner and Zentner). Generally, fairy shrimp have a broad tolerance range for physical and chemical attributes.

However, potential exists for this species to occur within the seasonal wetlands located on the Gilbert property and also within the seasonal wetland located along Cypress Road. Although the seasonal pools are not true vernal pools, they support ponding of water and therefore have potential to host fairy shrimp (Zentner and Zentner 2007), although the nearest CNDDB records are more than five miles away. Wet season surveys were performed on the Gilbert property in the winter of 2004 to 2005 by Zentner and Zentner with negative results. Therefore, fairy shrimp are very unlikely on the Gilbert site. Conditions on the Gilbert site further reduce the likelihood of this species occurring on these sites.

Midvalley fairy shrimp

Midvalley fairy shrimp (*Branchinecta mesovallensis*), a federal Species of Concern, is a small (0.28 to 0.79 inches long) freshwater crustacean. This species is found in shallow ephemeral pools, shallow vernal pools, vernal swales and artificial ephemeral wetland habitats. Midvalley fairy shrimp has also been observed in puddles, scrapes, and ditches (Belk and Fugate 2000) and is found in the mid portion of the Central Valley in Sacramento, Solano, Contra Costa, San Joaquin, Madera, Merced and Fresno counties (Belk and Fugate 2000). Because this species is normally found in quick drying pools, the Midvalley fairy shrimp can mature within about eight days when hatching in small pools. However, average maturing is approximately 26 days, or longer in larger pools.

As with the other fairy shrimp described above, potential exists for this species to occur within the seasonal wetlands located on the Gilbert property and also within the seasonal wetland located along the south side of Cypress Road (Zentner and Zentner 2007), although the nearest CNDDB records are more than five miles away. As noted above, wet season surveys were performed on the Gilbert property in the winter of 2004 to 2005 with negative results. Therefore, fairy shrimp is very unlikely on the Gilbert site.

California linderiella fairy shrimp

California fairy shrimp (*Linderiella occidentalis*), a federal Species of Concern, is a small (approximately 0.4 inches long) aquatic crustacean. This shrimp is most commonly found in large, moderately clear vernal pools and lakes, although it has been found in very small pools and in clear to turbid water with pH from 6.1 to 8.5. California fairy shrimp can live in water temperatures ranging between 41° to 85° F. On average they mature in 45 days. Adult linderiella shrimp have been collected from late December to early May. Linderiella fairy shrimp are the most common fairy shrimp in the Central Valley and have been observed in most locations that support vernal pools (USFWS 2003).

Potential exists for this species to occur within the seasonal wetlands located on the Gilbert property and also within the seasonal wetland located along the south side of Cypress Road (Zentner and Zentner 2007), although the nearest CNDDB records are more than five miles away. Wet season surveys were performed on the Gilbert property in the winter of 2004 to 2005 for this species with negative results. Therefore, fairy shrimp is very unlikely on the Gilbert site. Seasonal wetland conditions along Cypress Road are similar to Gilbert and further reduce the likelihood of this species occurring on this site.

Longhorn fairy shrimp

Longhorn fairy shrimp (*Branchinecta longiantenna*), federally-listed Endangered, is a small (0.5 to 0.8 inches long) aquatic crustacean. The longhorn fairy shrimp occupies clear to turbid vernal pools including clear-water depressions in sandstone outcroppings near Tracy, grass-bottomed pools in Merced County and claypan pools around Soda Lake in San Luis Obispo County (USFWS 2003). This species has been collected from late December to late April. (Eriksen and Belk 1999). On average, longhorn fairy shrimp take 43 days to mature. This species has been recorded in scattered populations along the eastern margin of the Central Coast Range from Concord in Contra Costa County south to Soda Lake in San Luis Obispo County (USFWS 2003).

As with the California linderiella fairy shrimp, this species could occur in the seasonal wetlands located on the Gilbert property and within the seasonal wetland located along the south side of Cypress Road (Zentner and Zentner 2007.) However, the nearest CNDDB records are more than five miles away and wet season surveys conducted by Zentner and Zentner were performed on the Gilbert property in the winter of 2004 to 2005 with negative results. Therefore, fairy shrimp is very unlikely on the Gilbert site. Conditions on the south of Cypress Road site are similar to Gilbert and further reduce the likelihood of this species occurring on this site.

Vernal pool tadpole shrimp

Vernal pool tadpole shrimp (*Lepidurus packardi*), federally-listed Endangered, is a small (up to 2 inches long) aquatic crustacean. This shrimp is found in vernal pools with clear to highly turbid water. Vernal pool tadpole shrimp has been observed in pools ranging in size from 54 square feet to 89 acres. Eighteen known populations exist in the Central Valley, ranging from east of Redding south to the San Luis National Wildlife Refuge in Merced County. This species is also known from a single vernal pool complex in the San Francisco Bay National Wildlife Refuge in Alameda County (USFWS 2003).

As with the fairy shrimp discussed above, this species could occur within the seasonal wetlands located on the Gilbert property and within the seasonal wetland located along the south side of Cypress Road (Zentner and Zentner 2007), although the nearest CNDDB records are more than five miles away. Wet season surveys were performed on the Gilbert property in the winter of 2004 to 2005 with negative results by Zentner and Zentner. Therefore, fairy shrimp is very unlikely on the Gilbert site. Conditions on the south of Cypress Road sites are similar to Gilbert and further reduce the likelihood of this species occurring on this site.

Antioch Dune insects

Several special-status invertebrate species are known from sandy substrates at the Antioch Dunes, situated approximately seven miles northwest of the project site. These include Antioch dunes anthicid beetle (*Anthicus antiochensis*), a federal Species of Concern; Molestan blister beetle (*Lytta molesta*), a federal Species of Concern; San

Joaquin dune beetle, a federal Species of Concern; Antioch efferian robberfly, a federal Species of Concern; Middlekauf's shieldback katydid, a federal Species of Concern; Antioch multilid wasp (*Myrmosula pacifica*), a federal Species of Concern; yellow-banded andrenid bee (*Perdita hirticeps luteocincta*), a federal Species of Concern; Antioch andrenid bee (*Perdita scituta antiochensis*) a federal Species of Concern; Antioch specid wasp (*Philanthus nasalis*), a federal Species of Concern; Sacramento anthicid beetle (*Anthicus sacramento*), a federal Species of Concern; and Ciervo Aegialian scarab beetle (*Aegialia concinna)*, a federal Species of Concern.

The degraded sand mounds located on the project site provide potential habitat for these species; however, most are not expected to occur as past and current land use practices have converted native plant communities to grazing lands or substantially degraded their habitat value. In addition, many of these species were documented at the Antioch Dunes over 25 years ago and recent occurrences in the region have not been reported. In 2002, special-status insect and invertebrate surveys for 21 species, including those species described herein, were conducted on the Cypress Grove property, adjacent to the Emerson propertywest of the Gilbert property area (Entomological Consulting Services 2002); however, special-status insect or invertebrate species were not observed.

The yellow-banded andrenid bee and Antioch andrenid bee are native bees found in sand dunes and are known to visit the flowers of California matchweed (*Gutierrezia californica)*. The Antioch andrenid bee is also known to visit the flowers of buckwheat (*Eriogonum* sp.), telegraph weed, and lessingia (*Lessingia* sp.). Potential habitat for the andrenid bee exists on the Gilbert property in the degraded remnant dune community due to the presence of telegraph weed; however, because this plant is fairly common in the Oakley area and thrives in disturbed habitats, and given that the dune habitat is otherwise degraded and does not contain California matchweed or other host plants, the habitat value is marginal (Zentner and Zentner 2007). This species was also not observed during site surveys on the Gilbert property in September and November 2004, when ithe species should have been visible. Therefore, this species is unlikely to occur on-site.

The anthicid beetle is unlikely to occur on the Gilbert property. The remnant sand dune communities on this property is heavily vegetated and therefore not preferred habitat (Zentner and Zentner 2007.)

Fish

Several special-status fish species have been considered as part of the biological studies completed for the single planned outfall structure at Emerson Slough. The sloughs may provide habitat for several special-status fish species.

Sacramento perch (*Archoplites interruptus*), a federal Species of Concern and a California Species of Special Concern, Delta smelt (*Hypomesus transpacificus*), federally- and State-listed Threatened, and Sacramento splittail (*Pogonichthys macrolepidotus*), a California Species of Special Concern, have been documented within the waters of Big Break as recently as 1994, but are considered to have a very low to low potential to occur in Emerson Slough and Marsh Creek

(Hanson personal communication 2001, Urquhart personal communication 2001, CDFG 2004a). However, recent fish sampling (2004-2005) conducted along the Contra Costa Canal, adjacent to the project site and in Rock Slough, approximately 1.5 miles to the east, positively identified both Delta smelt and Sacramento splittail (Tenera Environmental 2005).

Longfin smelt (*Spirinchus thaleichthys*), a federal Species of Concern and a California Species of Special Concern, have some potential to occur within the sloughs during their spawning period, December to February, and were positively identified during fish sampling conducted along the adjacent Contra Costa Canal and in Rock Slough in 1994 and 1995 (Tenera Environmental 2005).

Pacific lamprey (*Lampetra tridentate*), a federal Species of Concern, is an anadromous species that spawns in early spring. Pacific lamprey were positively identified during fish sampling in Rock Slough 1994, 1995, and 1996, and therefore, are believed to have a low potential to occur within Emerson and Dutch Sloughs.

Green sturgeon (*Acipenser medirostris*), a federal Species of Concern and a California Species of Special Concern, is not likely to occur within Dutch Slough due to its large size and the relatively low availability of water within Dutch Slough.

River lamprey (*Lampetra ayresi*), a federal Species of Concern and a California Species of Special Concern, have not been recorded in the vicinity of the proposed project and are not expected to occur within Dutch Slough (Zentner and Zentner 2005d,e).

Because of the potential for presence of the above-listed species, NOAA Fisheries and USFWS were contacted to determine which species needed to be addressed as a result of the proposed Emerson Slough outfall. NOAA Fisheries confirmed that Dutch Slough, which connects Emerson Slough to the rest of the Delta, is considered Essential Fish Habitat for Chinook (Pacific) salmon (Sycamore *et al*. 2003).

The USFWS was also contacted regarding potential for special-status species in Emerson Slough. The USFWS believes that Sacramento perch are not present in the sloughs of the Delta. However, both Sacramento splittail (recently federally de-listed) and Delta smelt have some potential to be present within Dutch and Emerson Slough. It should be noted that the CDFG also has jurisdiction over Delta smelt.

The following species do not spawn within the Delta (Sycamore *et al*. 2003): Steelhead (*Oncorhynchus mykiss*), federally-listed Threatened, and Chinook salmon (*Oncorhynchus tshawytscha*, winter-run, federally- and State-listed Endangered; Central Valley fall/late fall-run Chinook salmon, a federal Candidate species and California Species of Special Concern; and spring-run, federally- and state-listed Threatened. Central Valley fall/late fall-run Chinook salmon may rear in Emerson Slough, although habitat is marginal (NOAA Fisheries 2003). Central Valley fall/late fall-run Chinook salmon is considered to have a low potential to occur in Emerson Slough.

An Essential Fish Habitat Assessment for the adjacent Cypress Grove development, which evaluated the effects of four outfalls into Emerson Slough, concluded that adverse effects to protected fish species and their habitats would not occur because of design features for water quality treatment and flood attenuation (NOAA Fisheries 2003, Sycamore *et al*. 2003). The Assessment evaluated the outfall added in conjunction with this project; therefore, the proposed project is not expected to create adverse impacts on protected fisheries. The outfall at Emerson Slough, similar in function and design to the other Cypress Grove outfalls, would treat the stormwater with respect to water quality prior to releasing into the slough.

Amphibious species that are prominent in today's regulatory environment are addressed herein in further detail.

Amphibians

Amphibian species that are prominent in today's regulatory environment are addressed herein in further detail.

California red-legged frog

Optimal habitat for the federally-listed Threatened and California Species of Special Concern California red-legged frog (*Rana aurora draytonii*) includes ponds, stream courses, permanent pools (Storer 1925) and intermittent streams fed by drainage areas no larger than 300 km^2 (Hayes and Jennings 1988) between sea level and 1,500 meters (5,000 feet) in elevation (Bulger *et al.* 2003). Habitat characteristics include water depth of at least 0.7 meters (2.5 feet), largely intact emergent or shoreline vegetation, *e.g.* cattails (*Typha* spp.), tules (*Scirpus* spp.) or willows, and absence of competitors/predators such as bullfrogs and largemouth bass (*Micropterus salmoides*) (Hayes and Jennings 1988). However, according to Jennings (personal communication 2003), California red-legged frog will use a wide variety of habitats, including temporary pools and streams, permanent watercourses, wells, and ponds. Outside of an ideal habitat, California red-legged frog have been found in concrete-lined pools, isolated wells, stock ponds absent of shoreline vegetation, and in refuse piles near ponds. In order to survive, permanent ponds must be nearby, and neighboring aquatic habitat that lasts for at least 6 months a year. Less optimal habitat is most likely used during wet periods, but a permanent water source is essential to the survival of the population.

Adults are highly aquatic and are most active at night (Storer 1925). However, California red-legged frogs do make use of terrestrial habitat, especially after precipitation events, for non-migratory forays into upland habitats and migratory overland movements between aquatic sites. California red-legged frog typically remain within 5 meters (16 feet) of aquatic habitat during dry periods, but will move into upland habitat as far as 130 meters (426 feet) during summer rains (Bulger *et al.* 2003). In a study conducted by Bulger *et al.* (2003) at a coastal site in northern Santa Cruz County, 90 percent of non-migratory California red-legged frog remained within 60 meters (196 feet) of aquatic habitat following the onset of winter rains.

Bulger *et al*. (2003) demonstrated that California red-legged frog migrations to breeding ponds were often precipitated by rain events in excess of 25 mm (0.99 inches). Migratory routes were often highly oriented toward the nearest pond and were typically traversed in direct, point to point movements with little to no preference or avoidance toward topography or habitat. Migratory activity was conducted over a few to several days, followed by several sedentary days. California red-legged frogs were documented to migrate between aquatic sites at distances up to 3,200 meters (approximately 2 miles).

Breeding typically begins between November and mid-December and lasts through April in most years, but is dictated by winter rainfall (Stebbins 2003, Jennings and Hayes 1994, Bulger *et al*. 2003). As spawning occurs, California red-legged frogs cease using terrestrial uplands farther than six meters (20 feet) from the water (Bulger *et al.* 2003). At the breeding sites, males call in groups of three to seven individuals to attract females (Jennings and Hayes 1994). During amplexus, females deposit an egg mass on emergent vegetation (Storer 1925, Jennings and Hayes 1994). Larvae hatch in 6-14 days and metamorphosis is completed in 4-5 months (Jennings and Hayes 1994). Males and females attain sexual maturity at two and three years, respectively (Jennings and Hayes 1994). In some cases, tadpoles overwinter and metamorphose the following spring (Storer 1925).

The California red-legged frog is known to occur within a ten mile radius of the project site as recently as May 1999, however, based on the most recent data available (CDFG 2004a, Swaim Biological Consulting 2002, Sycamore 2003c), their presence has not been documented within a five-mile radius of the project site. In addition, the site is located outside federally proposed designated Critical Habitat and it does not offer suitable breeding habitat.

A California red-legged frog site assessment was conducted for the Cypress Grove project (Sycamore 2003c) which identified marginally suitable dispersal and aestivation habitat within 300-feet of Marsh Creek and the Contra Costa Canal. Marginally suitable dispersal habitat was also identified within Emerson Slough, which was measured to have a salinity level of 2.0 ppt during low tide (Sycamore 2003c), within the range of tolerance for California red-legged frog. However, decreases in freshwater outflow and increases in saltwater intrusion during the summer likely cause salinity levels in Emerson Slough to approach or exceed California red-legged frog tolerances for certain life history stages during that time.

Breeding would likely not occur within Marsh Creek and the Contra Costa Canal, due to the high water flows during the California red-legged frog breeding season (Swaim Biological Consulting 2002). Additionally, connectivity to known populations, while possible via Marsh Creek, is unlikely due to the degraded nature of the creek, which has been channelized within the City of Brentwood and northward, including the reach near the site.

The U.S. Fish and Wildlife Service personnel agreed during discussions with Sycamore Associates and during site visits on the Cypress Grove property that California red-legged

frogs were very unlikely to occur (Sycamore 2003c). Furthermore, as part of the formal Section 7 Endangered Species Act consultation for the Cypress Grove project, which resulted in issuance of a Biological Opinion dated July 2, 2004, the U.S. Fish and Wildlife Service determined that the proposed Cypress Grove project was not likely to adversely affect the California red-legged frog due to a lack of suitable habitat and distance to known sightings. The *Special Status Species Assessment for the Gilbert Property* (Zentner and Zentner 2007) concluded that although potentially suitable habitat on Dutch Slough and in drainage ditches is located on this property, California red-legged frog were not likely to occur on-site. The determination that the red-legged frog is not expected on the site was based on the lack of occurrences and connectivity to other sightings for this species (nearest sighting being over six miles at Sand Creek) coupled with the both the Site Assessment and the USFWS findings for Cypress Grove.

California red-legged frog is not expected to occur on the project site due to the lack of reported occurrences in the vicinity, lack of connectivity to known populations in the region, the presence of breeding bullfrogs within Marsh Creek and the adjacent Contra Costa Canal (Swaim Biological Consulting 2004), and U.S. the Fish and Wildlife concurrence with these assertions.

California tiger salamander

The California tiger salamander (*Ambystoma californiense*), federally-listed Threatened and a California Species of Special Concern, is a relatively large, terrestrial salamander that inhabits grasslands and oak savanna habitats in the valleys and low hills of central and northern California (Storer 1925, Stebbins 2003, Barry and Shaffer 1994). California tiger salamanders have been recorded from all of the nine Bay Area Counties at elevations ranging from approximately 10 to 3,500 feet above mean sea level (Shaffer and Fisher 1991). California tiger salamanders appear to be in the initial stages of habitat fragmentation and decline (Fisher and Shaffer 1996). California tiger salamanders require vernal pools, ponds (natural or man-made), or semi-permanent calm waters (where ponded water is present for a minimum of three to four months) for breeding and larval maturation, and adjacent upland areas that contain small mammal burrows or other suitable refugia for aestivation.

Adult California tiger salamanders spend most of their lives underground in small mammal burrows typically those of Beechey (California) ground squirrels (Loredo *et al*. 1996). Adults emerge from underground retreats to feed, court, and breed during warm winter rains typically from November through March. Adults may migrate long distances, up to a kilometer or more, to reach pools for breeding and egg laying (Jennings and Hayes 1994). The eggs are attached singly or in small groups of 2-4 to vegetation under water or directly on the bottom of the pool if emergent vegetation is sparse or nonexistent (Storer 1925, Jennings and Hayes 1994). After hatching in about 10-14 days the larvae continue to develop in the pools for several months until they metamorphose, which takes a minimum of 10 weeks (Anderson 1968, Feaver 1971).

Following metamorphosis, juvenile salamanders seek refugia, typically mammal burrows, traveling distances of one mile or more from their breeding sites (Austin and Shaffer 1992) in which they may remain until they emerge during a subsequent breeding season. Trenham *et al.* (2000) found that most individuals did not reach sexual maturity for 4-5 years. After completion of breeding, adult California tiger salamanders retreat to underground burrows. During some years in which the conditions are sub-optimal, adult females have been known to forego reproduction completely (Loredo *et al*. 1996, Trenham *et al*. 2000). California tiger salamander populations and breeding are vitally influenced by environmental conditions including seasonal rainfall and pond duration (Loredo *et al*. 1996). California tiger salamanders are dependent on the integrity of both breeding ponds and adjacent upland habitat, especially long-lasting seasonal pool and pond complexes (Jennings and Hayes 1994). The alteration of either habitat component through the introduction of exotic predators or the construction of barriers, such as roads, berms and certain types of fences that fragment habitat and reduce connectivity can be detrimental to the survival of California tiger salamander (Jennings and Hayes 1994).

Based on the most recent data available (CDFG 2004a, Swaim Biological Consulting 2002), California tiger salamander is not likely to occur on-site. California tiger salamander may have historically occurred in the vicinity of the project site but populations currently known to occur within the region are located approximately six and eight miles away, in the Sand Creek and Cowell Ranch State Park areas to the southwest and south respectively (CDFG 2004a). These known populations are separated from the project area by extensive urbanization and habitat modification. Suitable breeding habitat does not occur on the project site, or in the immediate vicinity of the project site, including the seasonal wetlands located on the Gilbert and Emerson properties because they do not pond water for a sufficient duration to support breeding (Zentner and Zentner 2005b,c). Accordingly, California tiger salamander is not expected to occur on the project site due to the site's highly disturbed nature, including recent disking, lack of breeding habitat, and geographic isolation from known populations.

Western spadefoot toad

Western spadefoot toads (*Scaphiopus hammondii*), a Federal Species of Concern and a California Species of Special Concern, are medium-sized native toads once found from Redding south to Northwestern Baja, California and from San Francisco Bay south to Mexico in the Coast Ranges and coastal lowlands. The toad prefers habitats with short grasses and open vegetation in sandy or gravelly soils. The species is normally found in lowland habitats including alluvial fans, floodplains, playas, and alluvial flats, but are also found in foothill and mountain valleys below 3,000 feet.

The toad was designated a California species of concern in 1994 due to the population being reduced and extirpated in many areas, with declines being greatest in lowlands. Loss of habitat due to conversion to agricultural lands and development, population fragmentation and isolation, and the introduction of non-native predators are the main reasons for population decline. Other reasons for population decline include roads, which act as barriers to movement and result in further isolation, and activities that produce

vibrations and/or low frequency noise that can cause toads to leave dormancy early, which can result in mortality.

Western spadefoot toads are nocturnal and hide in deep burrows during the day and during extended dry periods. Some toads use mammal burrows but the majority dig their own burrows by using the spades on their feet. The species emerge to feed during warm summer nights. Insects, worms, and invertebrates including grasshoppers, moths, ground beetles, flies, ants, and earthworms make up the majority of their diet.

Adult movement is minimal except during the breeding period. The toads breed in vernal pools with water temperature between 48˚ Fahrenheit and 86˚ Fahrenheit and up to 4,500 feet in elevation between January and May. Females can deposit more than 500 eggs in two days on detritus, small, submerged rocks, or around plant stems in the temporary pools. Eggs can hatch after 1.5 days but larval development can take from 3 to 11 weeks and must occur before pools dry. Tadpoles feed on plankton and organic material from the bottom of the pool, which they filter out of the water.

Potentially suitable habitat on the Gilbert Property was assessed as part of the Zentner and Zenter (2007) Special Status Species Assessment for the Gilbert property. This species is not likely to occur on the project site for several reasons. The deeper seasonal pools required by this species are not present on-site; the existing ponded areas are too shallow and ephemeral to support breeding by this species. Records within five miles of the site do not exist and western spadefoot toad has not been observed during site surveys.

Reptiles

Reptilian species that are prominent in today's regulatory environment are addressed herein in further detail.

Giant garter snake

The giant garter snake (*Thamnophis gigas*), federally-listed Threatened and state-listed Threatened, historically occurred throughout the Central Valley of California, from Kern County in the south to Butte County in the north, within the boundaries of the Coastal and Sierra Nevada ranges (Hansen and Brode 1980). The current range of the giant garter snake is confined to the Sacramento Valley and isolated parts of the San Joaquin Valley (Stebbins 2003, USFWS 1999), with scattered sightings in the Sacramento-San Joaquin Delta. Currently the highest densities of giant garter snake are found in the Sacramento Valley within the American Basin, where the species persists largely in seasonally flooded agricultural fields, primarily rice, and irrigation ditches (CDFG 2000). Loss of habitat has occurred throughout the range as a result of urban expansion (USFWS 1993, Dickert 2003), agricultural practices such as intensive vegetation control along canal banks that potentially fragment available habitat and changes in crop composition, and livestock grazing at waters edge, which can degrade the habitat available to giant garter snakes.

The giant garter snake is highly aquatic and primarily feeds on fish, tadpoles, and frogs (Fitch 1941). Historically these prey items included thick-tailed chub (*Gila crassicuada*) and the Sacramento blackfish (*Orthodox microlepidus*), both of which have been extirpated from the giant garter snakes current range (Dickert 2003). The habitat requirements of the giant garter snake include wetland areas such as sloughs, streams and other waterways, ponds or small lakes, marshes, and agricultural wetlands, with sufficient emergent vegetation for cover, openings in vegetation for basking, relatively low water flow, and access to high ground with abandoned rodent burrows for shelter and winter periods of reduced activity (USFWS 1993). The giant garter snake has been found to use altered habitats such as irrigation ditches and rice fields (CDFG 2000) in addition to more natural waterways. Furthermore, giant garter snakes tend to be absent from larger rivers that support populations of invasive or introduced predatory fish as well as wetlands that have sand, gravel or rocky substrates (Hansen 1980). Giant garter snakes are less active (Wylie *et al.* 1997), or dormant from October until April when they emerge to breed and forage. They are viviparous, giving birth to as many as 10 to 46 young from late July through early September (Hansen and Hansen 1990). The giant garter snake is the largest member of its genus, reaching lengths of 120 cm (Stebbins 2003), and become sexually mature in three (males) to five (females) years (USFWS 1993). Giant garter snakes are vulnerable to predation from both native (raccoons, skunks, opossums, foxes, hawks, egrets and herons) and invasive (bullfrogs, catfish, large mouth bass, and feral cats) species (USFWS 1993, Carpenter *et al.* 2002). Additionally they face threats from parasites and contaminants. Giant garter snakes are found sympatrically with the western terrestrial garter snake (*Thamnophis elegans*) and the common garter snake (*Thamnophis sirtalis*).

Giant garter snakes have been observed approximately four miles northwest and six miles north of the project site, within the waterways of the Delta (CDFG 2004a, Swaim Biological Consulting 2002) in 2002 and 1998 respectively. These recent occurrences in the region suggest that individual giant garter snakes may use the site environs, if only occasionally, and the site's proximity to Marsh Creek and the Contra Costa Canal, as well as the presence of suitable escape and refugia habitat on-site in the form Beechey (California) ground squirrel burrows, indicate that the site could potentially be used by giant garter snakes. The perennial irrigation ditches within the property and the adjacent Contra Costa Canal were determined to provide marginally suitable habitat given that giant garter snakes have been known to use similar ditches as movement corridors when they are inundated with water.

However, field surveys, including trapping, were conducted by Karen Swaim for the property. Giant garter snakes have not been found on-site or in proximity to the site. Swaim completed trapping and field surveys during 2003 for the adjacent Emerson and the neighboring Cypress Grove project, and included the stretch of the Contra Costa Canal that runs adjacent to the Emerson property (Swaim Biological Consulting 2004a). These protocol surveys did not find evidence of giant garter snake presence within the Contra Costa Canal or on the Cypress Grove site. Based upon the findings of giant garter snake surveys, the presence of predatory game fish within the Contra Costa Canal, which

have been known to prey upon giant garter snakes as well as compete with them for food, and the disturbed nature of the site, giant garter snakes are not expected to be present. Furthermore, as part of the formal Section 7 Endangered Species Act consultation for the Cypress Grove project, which resulted in issuance of a Biological Opinion dated July 2, 2004, the U.S. Fish and Wildlife Service determined that the Cypress Grove project was not likely to adversely affect the giant garter snake due to negative findings from protocol trapping surveys.

Surveys for giant garter snake were then conducted on the Gilbert and Burroughs properties during the summer of 2005 by Karen Swaim. The results of those survey were negative (Pers. comm. John Zentner November 4, 2005). Surveys for giant garter snake were conducted on the E. Cypress Specific Plan area, located east of the project site concurrently with the Gilbert survey. Findings in the East Cypress Specific Plan area were also negative (Swaim Biological Consulting 2006a,b,c,d.) Accordingly, giant garter snakes are not expected to occur on the project site but could move through the area.

Western pond turtle

The western pond turtle, a Federal Species of Concern and a California Species of Special Concern, frequents slow-moving rivers and streams (*e.g*. in oxbows), lakes, reservoirs, permanent and ephemeral wetlands, and stock ponds. Western pond turtles regularly utilize upland terrestrial habitat for nesting (females), mate seeking (males), overwintering, a seasonal terrestrial habitat use, and overland dispersal (Reese 1996, Holland 1994). Female western pond turtles have been reported ranging as far as 500 m (1,640 ft) from a watercourse to find suitable nesting habitat (Reese and Welsh 1997). Nest sites are most often situated on south or west-facing slopes, are sparsely vegetated with short grasses or forbs, have no overstory, and are scraped in hard-packed, dry silt or clay soils (Holland 1994, Rathbun *et al.* 1992, Reese and Welsh 1997), typically on low slopes of less than 25 degrees, but ranging from slopes of 0 to 60 degrees (Holte 1994). Western pond turtles exhibit high site fidelity, returning in sequential years to the same terrestrial site to nest or overwinter (Reese 1996). Most hatchlings appear to overwinter in the nest (Holland 1992, Jennings and Hayes 1994), and placing nests away from watercourses makes young less susceptible to death by flood events that commonly occur during the winter weather year (Rathbun *et al.* 1992). Additional explanations for placing nests away from watercourses include avoidance of predators such as raccoon and sex determination, which may be affected by temperature (Rathbun *et al.* 1992).

This medium-sized turtle ranges in size to just over eight inches (21cm) with a low carapace that is generally olive, brownish or blackish (Stebbins 2003, Jennings and Hayes 1994). Western pond turtles may live for 40 years or more (Jennings and Hayes 1994), and are therefore sometimes found in degraded areas. Adults appear to be able to persist for several years in poor aquatic habitat without any successful recruitment. This failure in recruitment is presumably due to introduced predators or unsuitable conditions for egg deposition.

Suitable aquatic habitat for the western pond turtle exists near the project site within Marsh Creek and the Contra Costa Canal, which runs along the northern boundary of the project site. Herpetologist Karen Swaim observed a western pond turtle on the northwest portion of the adjacent Emerson property within the Contra Costa Canal during a site visit to the Cypress Grove residential development site (Swaim Biological Consulting 2002). Additionally, much of the project site along the Contra Costa Canal contains potential nesting and overwintering habitat for hatchlings, despite the disturbed nature of the area due to disking. Suitable Western pond turtle habitat also exists in Dutch Slough. A review of recent occurrences (CDFG 2004a, Swaim Biological Consulting 2002) identified four occurrences of western pond turtles within a five-mile radius of the project area and several others within the extended vicinity. Dutch Slough and the other aquatic habitats of the Gilbert property were specifically surveyed for the presence of western pond turtle and turtle nests with negative results (Zentner and Zentner 2005d, 2005e); however, evidence of a western pond turtle nest was observed in 2004 on the interior sand dune adjacent to the neighboring Emerson property, which borders the levy along the Contra Costa Canal. This interior sand dune is contiguous with the sand mound habitat on the Emerson property, and as such western pond turtles could use the sand mound habitat on the project site for nesting as well.

Based on negative survey results on Gilbert, the presence of suitable aquatic habitat in Dutch Slough and occupied aquatic habitat within the Contra Costa Canal north of the site, western pond turtles are considered to have a moderate potential to occur on the project site.

Silvery legless lizard

The silvery legless lizard, a federal Species of Concern and a California Species of Special Concern, is a limbless lizard approximately four to seven inches long with a seemingly polished skin typically silvery gray or beige in color and a yellow belly. This species is differentiated from snakes by its smaller size and the presence of eyelids and ears. The silvery legless lizard ranges from San Francisco to Baja, Mexico along coastal mountains and foothills. The Central Coast dunes, interior dunes and coastal scrub provide favorable habitat, which is typically characterized by shrubby vegetation and loose soils. This species is also associated with streamside growths of sycamores, cottonwoods, and oaks with plenty of ground litter. This species uses burrows in loose soil near the base of slopes and near temporary or permanent streams. A diurnal species (active during the day), the silvery legless lizard forages leaf litter under the overhang of trees and bushes on sunny slopes and under rocks and logs. Bush lupine (*Lupinus arboreus*) and mock heather (*Ericameria ericoides*) often grow in areas that are suitable for this lizard. A highly fragmented distribution and widespread threats, mainly habitat conversion, have made them vulnerable to localized extirpations.

A population of silvery legless lizards is known to occur approximately 1.5 miles west of the project site within the East Bay Regional Park Legless Lizard Preserve as recently as May 2000 (CDFG 2004a, Swaim Biological Consulting 2002). Silvery legless lizard was positively identified in a remnant dune area located on the far south portion of the

Cypress Grove project in January and June 2004 during pre-construction surveys (Sycamore 2004a). Silvery legless lizard was also found just off site of the Cypress Grove property on a remnant dune located along the Burlington Northern Santa Fe (BSNF) Railroad tracks.

Surveys for silvery legless lizard conducted in April and May 2005 did not identify any silvery legless lizard on the Gilbert property. Surveys were completed using wood cover-boards placed in random locations two months prior to conducting surveys. Thus, Zentner and Zentner determined that silvery legless lizard would not likely occur in the degraded remnant sand mound located in the center of the Gilbert property (Zentner and Zentner 2005d).

California horned lizard

The California horned lizard (*Phrynosoma coronatum frontale*), a California Species of Special Concern, occupies a variety of open habitats including coastal scrub, oak savanna and grasslands. Historically, the species ranged throughout the Central Valley and Coast Range from Sonoma County south to Santa Barbara, Kern and Los Angeles Counties where the species likely intergrades with the San Diego horned lizard (*Phrynosoma coronatum blainvillei*). Despite a wide-ranging distribution, the species appears to be restricted to localized populations because of its close association with loose soils that have a high sand content (Jennings and Hayes 1994); however, local abundance and geographic distribution are poorly understood for this region. Horned lizards require open areas to forage and feed primarily on native harvester ants (*Pogonomyrmex barbatus*) species. The spread of introduced Argentine ants (*Linepithema humile*), which are toxic to horned lizards and eliminate native ants, has probably contributed significantly to localized extirpations in urban and semi-rural areas (Jennings personal communication 2000). The species cannot exist in areas that have been converted to agriculture, so the species' current distribution throughout the Central Valley is highly restricted.

California horned lizards are not expected to occur on the project site. Suitable habitat does exist within the nearby remnant dune/sand mound areas, but a review of recent data (CDFG 2004a, Swaim Biological Consulting 2002), did not reveal recent or historic occurrences within the region. Additionally, the presence of the non-native Argentine ant, which tends to preclude the horned lizard, was noted on the Gilbert property during surveys conducted by Zentner and Zentner. Finally, according to Jennings and Hayes (1994) this species is extirpated from the Oakley area.

Birds

Avian species that are prominent in today's regulatory environment are addressed herein in further detail.

Raptors

Raptors potentially nesting within the project area include white-tailed kite, red-tailed hawk, red-shouldered hawk, Swainson's hawk, American kestrel, great horned owl, short-eared owl, and burrowing owl. Most raptors such as red-tailed hawk, great horned owl, Swainson's hawk, and red-shouldered hawk nest in mature, large trees and use twigs or branches as nesting material. Smaller raptors such as American kestrel may nest in cavities in anthropogenic structures and trees. Short-eared owls and northern harriers nest on the ground with moderate ground cover. Burrowing owls typically nest in small mammal burrows in open dry lands, but have been known to utilize any ground cavity of similar size as well as anthropogenic structures. The nesting period for raptors generally occurs between December 15 and August 31.

Suitable nesting and foraging habitat exists on the project site for many raptor species, especially those that can withstand high levels of disturbance such as red-tailed hawks, American kestrels, and burrowing owls. Agricultural lands can provide a rich source of food for a wide range of species such as rodents, which in turn can be utilized as a prey base by raptors. Several mature trees occur along the south side of Cypress Road and Sellers Avenue, and around the home sites, and provide highly suitable nesting and foraging habitat for raptors. In addition, several species of raptors have been observed foraging on-site.

Special-status raptor species that have potential to occur on-site and those that are prominent in today's regulatory environment are addressed in further detail below.

Western burrowing owl

In California, the western burrowing owl, a California Species of Special Concern and a federal Species of Concern, occurs in the Central Valley, inner and outer Coastal region, the San Francisco Bay Area, southern California Coast, from southern California to the Mexican Border, the Imperial Valley and in portions of the desert and high desert habitats in southeastern and northeastern California. Burrowing owl inhabits available burrows in flat, open areas characterized by dry vegetation that is typical of heavily grazed grasslands, low stature grasslands, or desert vegetation (Johnsgard 1988). Burrowing owl occurs in deserts, plains and open grasslands, and in some cases, urban and agricultural landscapes. Burrowing owl requires underground burrows or artificial, man-made structures for shelter and nesting, and is often associated with fossorial animals such as prairie dogs, ground squirrels, badgers and some canids. In the Bay Area, burrowing owl typically utilizes burrows of Beechey (California) ground squirrel for denning. Burrows are used year-round and are an essential component to the life history of burrowing owl.

Burrowing owl is predominantly active during the early morning and late evening hours, with some limited activity throughout the day. In general, burrowing owl primarily consumes insects, amphibians, reptiles, and small mammals (Zarn 1974, Collins 1979). The breeding season for burrowing owl begins in the late winter and extends through late

summer. Courtship is evident when males decorate burrow entrances with dung, feathers, shiny objects, and/or desiccated skins of various animals. In California, egg-laying may begin as early as March in some areas (Zarn 1974) but typically begins in late April and early May (Thomsen 1971). Once eggs are laid, the female does the majority of incubating (although there are conflicting reports; see Coulombe 1971), which lasts approximately three to four weeks.

A single burrowing owl was observed on the Gilbert property during the biotic survey conducted in November 2004. The owl was likely an over-wintering owl or an owl using the site for foraging. Protocol-level breeding season surveys resulted in negative findings for burrowing owl or sign of burrowing owl, although ground squirrel burrows were present on the Gilbert property within the remnant sand dune area. Because of the presence of burrows and the sighting of an individual owl in November 2004, burrowing owl is considered to have a moderate potential to occur on the Gilbert property and winter surveys should be done on this site to complete the survey protocols.

Swainson's hawk

The Swainson's hawk, State-listed Threatened, occurs in open habitats throughout much of the western United States, Canada, and northern Mexico. Swainson's hawk breeds in North America and winters in the open grassland areas of southern South America (pampas), as well as parts of Mexico. In the Central Valley, Swainson's hawk arrives at nesting areas in late February and early March, four to six weeks earlier than it arrives at nesting sites in northeastern California. The species begins to depart for wintering areas in early September. In California, Swainson's hawk breeds in desert, shrub steppe, agricultural, and grassland habitats. Swainson's hawk constructs its nests in a variety of tree species in existing riparian forests, remnant riparian trees, shade trees at residences and alongside roads, planted windbreaks, and solitary upland oaks; however, it typically does not nest in large continuous patches of woodland other than along edges next to open habitats (England *et al.* 1997). The diet of Swainson's hawk varies considerably during breeding and non-breeding seasons. The species depends largely on small mammals during the breeding season and shift to feeding on insects during the non-breeding season, particularly crickets and grasshoppers. During the breeding season, Swainson's hawk travels long distances (up to 18 miles) in search of suitable foraging habitat that provides abundant prey (Estep 1989). The vegetation types/agricultural crops considered suitable foraging habitat for Swainson's hawk due to the availability of small mammals and insects include alfalfa, fallow fields, beet, tomato, and other low-growing row or field crops, dry land and irrigated pasture, rice land (when not flooded), and cereal grain crops (including corn after harvest) (CDFG 1994).

A Swainson's hawk nest was positively identified on Cypress Road approximately 50 meters west of Dutch Slough in the summer of 2005. This tree was removed, in consultation with the CDFG, for the construction of a pipeline constructed as part of the Summer Lakes residential development east of the project site (Monk & Associates, 2005). Additionally, a pair of Swainson's hawks successfully nested less than 3,000 feet south of the project area in 2004 (CDFG 2005a). Suitable nesting habitat for Swainson's

hawk is present within the large trees within the project site. The Gilbert site is often cultivated in hay, which is a suitable foraging habitat type for Swainson's hawk. Swainson's hawks have been observed during field surveys conducted by Zentner and Zentner in the project area. Swainson's hawks are highly likely to nest on-site.

White-tailed kite

White-tailed kite, a California Fully Protected species, is a medium-sized raptor that is distributed across much of the western part of California. The species underwent a dramatic reduction in numbers during the last century due to habitat loss and hunting. Between the 1940s and early 1980s, the population recovered and its range expanded. More recently, population declines have again been noted, possibly as a result of the conversion of agricultural lands to urban uses (Allsop 2001). The white-tailed kite occupies low-elevation grassland, agricultural, wetland, oak woodland and savanna habitats and nests in a wide variety of trees and shrubs, either isolated or in larger stands. Nearby open areas are required for foraging, including certain types of agricultural fields. Food habit studies have demonstrated that voles make up a large proportion of the White-tailed kite's diet, although other small mammals, birds and insects are also preyed upon (Allsop 2001). The species hunts during the day primarily by hovering and searching for prey. White-tailed kite in California is generally resident, although the White-tailed kite may occupy different areas during the non-breeding and breeding seasons. Typically, four eggs are laid in February and March and chicks hatch after 30 to 32 days. Juvenile kites are dependent on parents for two to three months before they fledge. During the non-breeding season, the species roosts communally.

Suitable breeding and foraging habitat exists on-site. White-tailed kites have been observed roosting and foraging on the project site and in the vicinity. In addition, a pair successfully bred on the neighboring Cypress Grove property during the spring of 2004. Therefore, white-tailed kite has a high potential to nest on-site.

Short-eared owl

Short-eared owl, a California Species of Special Concern, is a large owl that inhabits coastal areas of California. The species is a winter resident of the Central Valley of California and occupies open habitats including annual and perennial grasslands, meadows, irrigated lands, and saline and fresh emergent marshes. Short-eared owl feeds primarily on voles and other small mammals, as well as small birds, amphibians and arthropods. Nests are built on the ground in a shallow depression among dense vegetation. Eggs are laid in April and May. The male feeds the female while she incubates eggs. The young fledge at 31 to 36 days (Sibley 2000). Hay fields such as those found on-site provide suitable foraging and nesting habitat for short-eared owls. Raptor species such as northern harrier and short-eared owl are well suited to foraging in tall grasses and often nest in agricultural fields cultivated in grain crops. However, observations have not been recorded in the vicinity; therefore, short-eared owls have a low potential to occur on-site.

Northern harrier

Northern harrier, a California Species of Special Concern, inhabits grasslands, agricultural fields, scrub habitats, and marshes. Breeding typically occurs in tall vegetation near marshes and in grasslands and agricultural fields from March to July. Northern harrier feeds primarily on voles and other small mammals, birds, frogs, and insects (Sibley 2000). Hay fields such as those found on-site provide suitable foraging and nesting habitat for northern harriers. Raptor species such as northern harrier and short-eared owl are well suited to foraging in tall grasses and often nest in agricultural fields cultivated in grain crops. Northern harrier has been observed in the immediate vicinity of the site; therefore, it has a moderate potential to occur on-site.

Passerines and non-passerine land birds

Passerines (perching birds) are a taxonomic grouping that consists of several families including swallows (*Hirundinidae*), larks (*Alaudidae*), crows, ravens and jays (*Corvidae*), shrikes (*Laniidae*), vireos (*Vireonidae*), finches (*Fringillidae*) and Emberizids (*Emberizidae*, warblers, sparrows, blackbirds, *etc.*), among others. Non-passerine land birds are a non-taxonomic based grouping typically used by ornithologists to categorize a loose assemblage of birds. Families grouped into this category include kingfishers (*Alcedinidae*), woodpeckers (*Picidae*), swifts (*Apodidae*), hummingbirds (*Trochilidae*) and pigeons and doves (*Columbidae*), among others. Habitat, nesting and foraging requirements for these species are wide ranging; therefore, outlining generic habitat requirements for this grouping is difficult. These species typically use most habitat types and are known to nest on the ground, in shrubs and trees, on buildings, under bridges, and within cavities, crevices and manmade structures. Many of these species migrate long distances and all species except starlings, English house sparrows, and rock doves (pigeons), are protected under the federal Migratory Bird Treaty Act. The nesting period for passerines and non-passerine land birds occurs between February 1 and August 31.

The cultivated and disturbed habitat and sand mound communities provide suitable nesting habitat for many ground-nesting passerine and non-passerine land bird species. Additionally, trees around home sites provide suitable nesting habitat for many other passerine and non-passerine land bird species.

Special-status passerine species have the potential to occur on-site, including California horned lark, loggerhead shrike, and tri-colored blackbird. California horned lark, loggerhead shrike, and tri-colored blackbird are discussed in more detail below.

California horned lark

The California horned lark, a California Species of Special Concern, breeds in open grasslands throughout the Central Valley and adjacent foothills and along the central and southern California coast region. Feeding on insects and seeds, this bird is a ground nesting species that prefers shorter, less dense grasses and areas with some bare ground.

The California horned lark forms flocks in the summer and winter months that are often observed foraging and roosting in cultivated fields and along dirt roads.

Due to the presence of marginally suitable nesting and foraging habitat on-site, California horned lark is considered to have a low potential for occurrence.

Loggerhead shrike

The loggerhead shrike, a California Species of Special Concern, is a wide-ranging species that occupies open habitats including grassland, scrub and open woodland communities. The species typically nests in densely vegetated, isolated trees and shrubs and occasionally man-made structures, and at the margins of open grasslands. Loggerhead shrike feeds on a variety of small prey including arthropods, mammals, amphibians, reptiles and birds (Alsop 2002). Because the bird lacks talons, the loggerhead shrike often impales prey on thorns or barbed wire. In California, the species does not migrate and is resident year-round. Loggerhead shrike is highly territorial, with pairs maintaining territories during the breeding season and individuals maintaining territories during the winter (Alsop 2002). Declines in numbers have been noted across a broad geographical range in the United States.

Suitable foraging habitat is present on-site, and loggerhead shrikes have been observed foraging on the project site. Potential nesting habitat is also present on the project site.

Tricolored blackbird

Tricolored blackbird (*Agelaius tricolor*), a California Species of Special Concern, inhabits coastal areas of central and southern California and the Central Valley. The species typically requires freshwater marshes with emergent vegetation surrounded by water for nesting, although thorny brambles, nettles, dense willows or grain fields near water are also used. The microhabitats selected for nesting must provide protection from numerous avian, mammalian, and reptilian predators. The species is highly colonial. Historically, tricolored blackbirds congregated in large colonies during the breeding season.

Breeding is highly synchronous. The species is nomadic and smaller colonies often nest in different areas from year to year. Juveniles are not likely to return to the sites where they were born (DeHaven *et al.* 1975). Tricolored blackbird is regularly observed foraging and roosting in mixed flocks with other blackbird species, especially during the non-breeding season. Tricolored blackbird forages on seeds and insects in grassland and cropland, the latter primarily during the breeding season (Skorupa *et al.* 1980). Nesting colonies can be highly susceptible to human disturbance; in extreme cases, disturbances can result in entire colonies abandoning their nests. Agricultural activities in particular can threaten entire colonies.

Although the exact occurrence locations for tricolored blackbird are listed as sensitive by the CNDDB, occurrences have been reported in the Union Island, Byron Hot Springs,

Brentwood, and Clifton Court Forebay quads, but none are reported within five miles of the site. Suitable nesting habitat for the tricolored blackbird is present on the project site along the sloughs and irrigation and drainage canals, and irrigated pastures provide foraging opportunities. Tricolored blackbird nesting colonies are readily observable but none have been seen during surveys of the project site although a non-nesting tricolored blackbird was observed on the Gilbert property during a September 2004 survey and a few non-nesting tricolored blackbirds were observed on June 6, 2005 (Zentner and Zentner 2005d). Sycamore Associates biologists observed tricolored blackbirds foraging on the East Cypress Corridor Specific Plan Area, approximately 1.5 miles to the east in 2004 (Sycamore 2005e). However, no nesting birds or colonies have been noted on the project site or any areas adjacent to the site. Therefore, tricolored blackbird is not expected to nest on the project site within Dutch Slough or the perennial irrigation and drainage canals due to negative survey results.

Mammals

Mammalian species that are prominent in today's regulatory environment are addressed herein in further detail.

San Joaquin kit fox

The San Joaquin kit fox (*Vulpes macrotis mutica*), federally-listed Endangered and State-listed Threatened, is one of seven subspecies of kit fox and is considered the most genetically distinct (Mercure *et al*. 1993). The San Joaquin kit fox is the smallest North American canid (member of the dog family, Canidae). Adult males weigh approximately five pounds and adult females weigh 4.6 pounds, on average (Morrell 1972). Historically, the San Joaquin kit fox occurred extensively throughout California's Central Valley and parts of the Salinas and Santa Clara valleys. Kit fox currently inhabit some areas of suitable habitat on the San Joaquin Valley floor and in the surrounding foothills of the coastal ranges, Sierra Nevada, and Tehachapi Mountains, from southern Kern County north to Contra Costa, Alameda, and San Joaquin Counties on the west, and near La Grange, Stanislaus County on the east side of the Valley and some of the larger scattered islands of natural land on the Valley floor in Kern, Tulare, Kings, Fresno, Madera, and Merced Counties (taken from the Recovery Plan for Upland Species of the San Joaquin Valley, California, USFWS 1998).

A number of reviews of the distribution of kit fox in the northern portion of their range have been prepared (Laughrin 1970, Swick 1973, Morrell 1975, USFWS 1983, Orloff *et al.* 1986, Wesler 1987, Bell 1994, H.T. Harvey and Associates 1997, USFWS 1998). Detection of kit fox in the past decade in the Black Diamond Mines East Bay Regional Park have extended the kit fox range farther north than earlier descriptions. Kit fox prefers habitats of open or low vegetation with loose soils. In the northern portion of their range, the species occupies grazed grasslands and to a lesser extent valley oak woodlands. In the southern and central portion of the Central Valley, kit fox is found in valley sink scrub, valley saltbrush scrub, upper Sonoran subshrub scrub and annual grassland (USFWS 1998). Kit fox is also found in grazed grasslands, urban settings and

in areas adjacent to tilled or fallow fields (USFWS 1998). Kit fox requires underground dens to raise pups in order to avoid predators (Golightly and Ohmart 1984), and to regulate temperature and avoid other adverse environmental conditions. In the northern portion of their range, burrowing mammals, primarily ground squirrels, usually provide these holes. Dens are usually located on loose-textured soils on slopes less than 40 degrees (O'Farrell 1980).

Wildlife biologist Susan E. Townsend, Ph.D. conducted an assessment of potential kit fox utilization of the adjacent Cypress Grove property and connectivity between known occurrences and Cypress Grove (Townsend 2002). Dr. Townsend's report identified several occurrences of San Joaquin kit fox within the region, though the nearest sightings occurred approximately 6.8 miles south and 7.5 miles west of the project site near Brentwood and within East Bay Regional Park District Black Diamond Mines, respectively. Although potentially suitable habitat exists on-site within the remnant sand mounds, Dr. Townsend determined that kit fox is highly unlikely to access the adjacent Cypress Grove site for foraging or denning due to the lack of connectivity caused by urbanization within the region. Therefore, San Joaquin kit fox is considered to have a low potential to occur on the project site.

Special-status bat species

California has 24 known species of bats (CDFG 2000a). Of those, 11 are classified as California Species of Special Concern (CDFG 2000a). Two special-status bat species have at least some potential to occur within the project area, including pallid bat, a California Species of Special Concern, and Townsend's big-eared bat (*Corynorhinus towsendii townsendii*), a California Species of Special Concern. These species use caves, mature trees, snags, crevices and man-made structures (such as buildings) for roosting, either for winter roosting (hibernacula) or for forming nursery colonies. Bats are generally site faithful and will not abandon an established roosting area unless disturbed.

Several mature trees exist along the roadways and around the home site, which provide suitable bat roosting habitat. In addition, the residences located on the project site provide potentially suitable roosting habitat for bats. Because none were observed and only marginal roosting habitat exists, the bat species are considered to have a low potential to occur on-site.

Wildlife Movement Corridors and Habitat Fragmentation

Wildlife movement includes migration (usually one direction per season), inter-population movement (long-term genetic exchange, dispersal) and small travel pathways (daily movement corridors within an animal's territory). While small travel pathways primarily function as movement corridors for daily home range activities such as foraging or escape from predators, they can also provide a connection between outlying populations and the main corridor, thereby facilitating dispersal and leading to an increase in gene flow between populations.

These connections between habitat types can extend for miles between primary habitat areas, and occur on a large scale throughout California. Habitat linkages facilitate movement between otherwise isolated populations and those within larger habitat areas. The mosaic of habitats found within a larger-scale landscape results in a meta-population structure, a large single population made up of multiple discrete sub-populations. Where patches of pristine habitat are fragmented, such as occurs with coastal scrub, movement between these sub-populations is facilitated by habitat linkages in the form of migration or movement corridors.

Depending upon the condition of the corridor, dispersal and subsequent gene flow between populations may be either high or low in frequency. A high frequency of dispersal can allow for an increased genetic diversity within the population, whereas a lower frequency of dispersal may lead to decreased genetic diversity, and increased susceptibility to environmental pressures such as disease. If dispersal frequency is very low, sub-populations may become completely isolated from the rest of the meta-population, and eventually could be subject to local extinction (McCullough 1996, Whittaker 1998).

Habitat fragmentation, by definition, is an event that creates a greater number of habitat patches that are smaller in size than the original contiguous habitat. Fragmentation of primary habitat types can hinder regional wildlife movements. The resulting reduced interaction between individuals changes the long-term dynamics of populations distributed among fragments, reducing the ability of these isolated populations to persist in the face of adverse environmental pressures such as disease or stochastic events and increasing the probability of extinction (Kupfer et al. 1997, Zuidema et al. 1996). The effects of habitat fragmentation on the movement and dispersal of organisms, within a landscape, play an important role in determining the genetic composition and diversity of a population (Opdam 1990, Tiebout III & Anderson 1997). As such, it is imperative to consider the impacts of potential habitat fragmentation and the subsequent loss of valuable dispersal corridors when assessing the biological impacts of a project.

The project area is adjacent to agricultural fields with rural residential to the east and south, Contra Costa Canal to the north, and construction activities to the west. The Contra Costa Canal and Dutch Slough are potential movement corridors, which may facilitate the movement of animals to and from the project site and may provide safe refuge for species that may forage within the project area during various times of the year; however, the project site does not provide a key movement corridor for wildlife in the region given the present agricultural practices and surrounding land uses.

REGULATORY CONTEXT

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

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

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

Federal

United States Army Corps of Engineers, Sacramento District

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

Waters of the United States include the following:

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

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

Because of the recent Supreme Court Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers decision, the USACE no longer takes jurisdiction over "isolated wetlands." The USACE does take jurisdiction over "adjacent wetlands," which are

hydrologically connected wetlands that may in some cases appear "isolated." The Regional Water Quality Board (RWQCB) has authority over "waters of the State" under the Porter-Cologne Water Quality Control Act. Furthermore, in creek or river systems, RWQCB asserts jurisdiction similar to California Department of Fish and Game (CDFG), from top of bank to top of bank. The RWQCB asserts that it has authority over all wetlands, including isolated wetlands.

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

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

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

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

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

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

The Federal Endangered Species Act (FESA) prohibits "take" of federally-listed Threatened or Endangered wildlife species. The FESA defines "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or attempt to engage in any such conduct" 16 U.S.C. Section1532(19). The FESA requires that actions authorized, funded or carried out by federal agencies do not jeopardize the continued existence of a federally-listed species or adversely modify designated Critical Habitat for such species. If a federal agency determines that a proposed federal action (i.e., issuance of a Clean Water Act Section 404 permit for wetland fill) "may affect" a listed species and/or designated Critical Habitat, the agency must consult with the USFWS and/or NOAA Fisheries for protected marine and anadromous fish species in accordance with Section 7 of the FESA. If take of a federally-listed species may occur, the applicant may be required to obtain an Incidental Take Permit from the USFWS. The Incidental Take Permit allows "incidental" taking of federally-listed species if the take is "incidental to and not the purpose of, the carrying out of an otherwise lawful activity" 16 U.S.C. Section1539(a)(1)(B). An Incidental Take Permit is issued by USFWS only if the applicant, to the maximum extent possible, has minimized and mitigated for the impacts of the taking, provided adequate funding for the mitigation plan, and if the taking would not appreciably

reduce the likelihood of the survival and recovery of the species in the wild 16 U.S.C. Section1539(a)(2)(B).

Migratory Bird Treaty Act

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

State

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA is similar to the FESA but pertains to state-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Game (CDFG) when preparing California Environmental Quality Act (CEQA) documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. CESA directs agencies to consult with CDFG on projects or actions that could affect listed species, directs CDFG to determine whether jeopardy would occur, and allows CDFG to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that "overriding considerations" exist; however, the agencies are prohibited from approving projects that would result in the extinction of a listed species.

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

California Department of Fish and Game (CDFG)

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

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

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

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

CDFG Species of Special Concern

In addition to formal listing under FESA and CESA, plant and wildlife species receive additional consideration during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern" developed by the CDFG. CDFG tracks species in California whose numbers, reproductive success, or habitat may be threatened.

CDFG Birds of Prey Protection

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

Regional Water Quality Control Board

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

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

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

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

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

Waters of the State

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

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

Natural Community Conservation Planning Act

The Natural Communities Conservation Planning Act (NCCP) program is an unprecedented effort by the State of California, as well as numerous private and public partners that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological

diversity. The program, which began in 1991 under the California Natural Community Conservation Planning Act, is broader in its orientation and objectives than CESA and ESA; these laws are designed to identify and protect individual species that are already listed as threatened or endangered. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use (CDFG, 2003).

Local Regulations

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

On January 25, 2000, the Contra Costa County Board of Supervisors declared its intent to participate in the development of a Habitat Conservation Plan (HCP) for East Contra Costa County. On June 30, 2000, the East Contra Costa County Habitat Conservation Plan Association Agreement went into effect. This agreement established the East Contra Costa Habitat Conservation Plan Association (HCPA) as the lead agency in drafting the Habitat Conservation Plan for submittal to the governing boards and councils of member agencies, oversee compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), and would serve as the lead agency under CEQA for developing the HCP. In addition, the City of Oakley has declared its intent to participate in the development of the HCP and is a member of the HCPA. A Draft of the East Contra Costa Count Habitat Conservation Plan and Natural Community Conservation Plan (Draft HCP) was issued in June 2005 for public review and comment. Following the comment period the Final HCP was prepared, and released in October 2006. The Final HCP is currently in the approval process. The HCP is intended to address potential impacts to many listed species and their habitats within East Contra Costa County. The HCP provides avoidance and minimization measures for several special-status species as well as mitigation via an in-lieu fee program for unavoidable impacts to HCP covered species. The City of Oakley is a participant in the HCP and mitigation according to its guidelines and programs may be available and utilized by the project proponents.

In addition, on June 1, 2006, the project applicants entered into that certain *East Cypress HCP/NCCP Memorandum of Agreement* (HCP MOA) with USFWS and the California Department of Fish and Game to assure, among other things, the expedited issuance of all required inclusions in the CCWD's CVP contractual service area, the prompt completion of any other required Section 7 consultations, and the timely and effective mitigation for potential impacts to special status species. Pursuant to the terms of the HCP MOA, the project applicants agreed to participate in the HCP and USFWS agreed to initiate discussion with USBR and CCWD leading to the initiation of formal consultation with USFWS, under section 7 of the ESA, relative to inclusion of the project site into the CCWD's CVP contractual service area.

City of Oakley General Plan

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

General Land Use

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

Policies

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

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

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

Implementation Programs

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

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

Open Space

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

Policies

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

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

Biological Resources

Goal 6.3 Encourage preservation of important ecological and biological resources.

Policies

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

6.3.2 Develop open space uses in an ecologically sensitive manner.

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

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

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

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

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

Implementation Programs

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

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

Protection and Preservation Ordinance

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

Other Statutes, Codes, and Policies Affording Limited Species Protection

California Native Plant Society

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

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

IMPACTS AND MITIGATION MEASURES

Standards of Significance

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

- Adversely affect, either directly or through habitat modification, any endangered, threatened or rare species, as listed in Title 14 of the California Code of Regulations (Section 670.5) or in Title 50, Code of Regulations (Section 17.11 or 17.12) or their habitats (including but not limited to plants, fish, insects, animals, and birds);
- Have a substantial adverse impact, either directly or through habitat modification, on any species identified as a candidate, sensitive or special-status species in local or regional plans, policies, or regulations or by the CDFG or USFWS, including CNPS plants listed as 1B;
- Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulation or by the CDFG or USFWS;

- Adversely affect federally protected wetlands (including but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means;
- Have a substantial adverse effect on significant ecological resources including:
  - Wetland areas including vernal pools;
  - Large areas of non-fragmented natural communities that support endangered, threatened or rare species;
  - Wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian routes, and known concentration areas of waterfowl within the Pacific Flyway;
- 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 or regional policies or ordinances designed to protect or enhance biological resources, such as a tree preservation policy or ordinance;
- Substantially fragment, eliminate or otherwise disrupt foraging areas, access to food sources, range and/or movement;
- Disrupt critical time periods (i.e., nesting and breeding) for fish and other wildlife species;
- Conflict with local, state, or federal resource conservation plans, goals, or regulations that would result in a physical impact on the environment; or,
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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

Methods of Analysis

This section is based on the *Biological Resources Section* by Zentner and Zentner. Zentner and Zentner's biological analysis is based on a review of documents pertaining to the natural resources of the project area as listed above; examination of aerial photography, biological resources, and vegetation maps; and field investigations as described above. The evaluation of whether or not an impact on biological resources would be substantial considers both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans,

goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

The following information pertaining to biological resources was reviewed by Zentner and Zentner in the preparation of this section:

- Atlas Tree Service, Inc. *Tree Survey: Subdivision: cypress Road, Oakley, CA.* March 7, 2006.
- Entomological Consulting Services, Ltd. *Habitat Assessment for Special-Status Invertebrates for the Cypress Grove Project, Oakley, Contra Costa County, California.* September 19, 2002.
- Entomological Consulting Services, Ltd. *Habitat Assessment for Special-Status Insects and Invertebrates for the Cypress Grove Project, Oakley, Contra Costa County, California.* October 7, 2002.
- Entomological Consulting Services, Ltd. *Western Pacific 19A – Cypress Grove Property in Oakley (Contra Costa County), CA WA# 135 – Presence-Absence Surveys for Three Beetles.* June 27, 2004.
- H.T. Harvey & Associates. *Site Assessment for Special-Status Bats for the Cypress Grove Project, Oakley, Contra Costa County, California.* August 8, 2002
- Monk & Associates. *Shea Homes Summer Lakes Development - Water Pipeline Project – Tree Removal - Swainson's Hawk Avoidance Measures in Coordination with CDFG*. November 14, 2005.
- Raney Planning & Management Inc. *Cypress Grove Draft Environmental Impact Report.* May 2003.
- Raney Planning & Management Inc. *Dutch Slough Properties Draft Environmental Impact Report.* July 2006. *(Withdrawn)*
- Sycamore Associates LLC. *Preliminary Wetlands Delineation and Jurisdictional Determination of the Emerson and Burroughs Properties, Oakley, California. Addendum letter report.* June 28, 1998.
- Sycamore Associates LLC. *Biological Assessment of the Emerson and Burroughs Properties, Oakley, Contra Costa County, California.* 1999.
- Sycamore Associates LLC. *Wetland Delineation and Preliminary Jurisdictional Determination for the Cypress Grove Project, Oakley, California.* August 23, 2001.
- Sycamore Associates LLC. *Protocol-level Habitat Assessment and Focused Breeding Season Burrowing Owl Surveys for the Cypress Grove Project, Oakley, Contra Costa County, California.* August 12, 2002.

• Sycamore Associates LLC. *Botanical Assessment for the Cypress Grove Project, Oakley, Contra Costa County, California.* September 20, 2002.

• Sycamore Associates LLC. *Revised Biological Assessment for the Cypress Grove Property, Oakley, California.* January 30, 2003.

• Sycamore Associates LLC. *Focused Winter Burrowing Owl and Pre-construction Bird Surveys for the Cypress Grove Project, Oakley, Contra Costa County, California.* February 6, 2003.

• Sycamore Associates LLC. *Cypress Grove Project – Swainson's Hawk Foraging Habitat Analysis for the Cypress Grove Project, Oakley, Contra Costa County, California.* June 2003.

• Sycamore Associates LLC. *Site Assessment for the California Red-legged Frog for the Cypress Grove Project, Oakley, California.* March 20, 2003.

• Sycamore Associates LLC. *Supplemental Botanical Assessment for the Cypress Grove Residential Development, Oakley, Contra Costa County, California.* July 25, 2003.

• Sycamore, Hanson Environmental, and Balance Hydrologics. *Essential Fish Habitat Assessment for the Cypress Grove Project, Oakley, Contra Costa County, California.* August 10, 2004.

• Sycamore Associates LLC. *Letter to David Ivester Re: Summary of Silvery Legless Lizard Sightings on the Cypress Grove Residential Development, City of Oakley, Contra Costa County.* May 4, 2004.

• Sycamore Associates LLC. *Silvery Legless Lizard Survey Results and Mitigation Plan for the Cypress Grove Residential Project, City of Oakley, Contra Costa County, California.* July 13, 2004.

• Sycamore Associates LLC. *Focused Special-Status Reptile Surveys for the Cypress Grove Project, Oakley, Contra Costa County, California.* August 23, 2004.

• Sycamore Associates LLC. *Biological Assessment for the 150-acre Emerson Property South of the Contra Costa Canal, Oakley, Contra Costa County, California.* January 14, 2005.

• Sycamore Associates, LLC. *Tree Survey Report for the 150-acre Emerson Property and Off-Site Areas Along Cypress Road and Sellers Avenue, Oakley, Contra Costa County, California.* March 24, 2005.

• Sycamore Associates, LLC. *Burrowing Owl winter Season Habitat Assessment and Focused Surveys 150-acre Emerson Property South of the Contra Costa Canal, Oakley, Contra Costa County, California.* June 6, 2005.

• Sycamore Associates, LLC. *Botanical Assessment for the 150-Acre Emerson Property South of the Contra Costa Canal, Oakley, California*. July 25, 2005.

• Sycamore Associates, LLC. *Swainson's Hawk Foraging Habitat Analysis the 150-Acre Emerson Property South of the Contra Costa Canal, Oakley, Contra Costa County, California*. July 31, 2005.

• Swaim Biological Consulting. *Survey Results for the Giant Garter Snake (Thamnophis gigas) at the Gilbert and Burroughs Properties in Contra Costa County, California.* February 27, 2006.

• Swaim Biological Consulting. *Results of Surveys for the Giant Garter Snake (Thamnophis gigas) in Marsh Creek and the Contra Costa Canal, Northeast Contra Costa County, California.* January 22, 2004.

• Swaim Biological Consulting. *Site Assessment for Special Status Reptiles and Amphibians at the Proposed Cypress Grove Site in Oakley, Contra Costa County, California.* September 15, 2002.

• Swaim Biological Consulting. *Results of Surveys for the Giant Garter Snake (Thamnophis gigas) in Marsh Creek and the Contra Costa Canal, Northeast Contra Costa County, California.* January 22, 2004.

• Swaim Biological Consulting. *Results of Surveys for the Giant Garter Snake (Thamnophis gigas) at the Dal Porto North Property in Oakley, Contra Costa County, California.* October 1, 2005.

• Swaim Biological Consulting. *Results of Surveys for the Giant Garter Snake (Thamnophis gigas) at the Dal Porto South Property in Oakley, Contra Costa County, California.* October 3, 2005.

• Swaim Biological Consulting. *Results of Surveys for the Giant Garter Snake (Thamnophis gigas) at the Lesher Property in Oakley, Contra Costa County, California.* October 3, 2005.

• Swaim Biological Consulting. *Results of Surveys for the Giant Garter Snake (Thamnophis gigas) at the Biggs Property in Oakley, Contra Costa County, California*. October 3, 2005.

• Townsend, S. E. *San Joaquin Kit Fox Regional Analysis for the Cypress Grove Project, Oakley, Contra Costa County, California.* September 9, 2002.

• Zentner and Zentner. *Gilbert Property Oakley, Contra Costa County, Special Status Species Assessment*. January 6, 2005.

• Zentner and Zentner. *Burroughs Property, Oakley, Contra Costa County, Biotic Assessment.* May 2005.

• Zentner and Zentner. *Gilbert Property, Oakley, Section 404 Jurisdictional Delineation.* July 6, 2005.

• Zentner and Zentner. *South Cypress Road Environmental Assessment*. November 2005.

- Zentner and Zentner. *Special Status Species Surveys at the Gilbert's Property including Silvery Legless Lizard, Western Pond Turtle, Tri-colored Blackbird, Nesting Raptors and Vegetation.* October 2005.

- Zentner and Zentner. *Annual Report: Gilbert Property Surveys, Oakley, CA.* April 2006.

Nomenclature used throughout this report conforms to Hickman (1993) for plants except where noted. Nomenclature for special-status plant species conforms to the CDFG (2004c,e) and CNPS (2001); nomenclature for special-status animals conforms to the CDFG (2004b,d); nomenclature for special-status natural communities conforms to the California Department of Fish and Game (2003). Nomenclature for wildlife conforms to Sibley (2000) for birds, Stebbins (2003) for reptiles and amphibians, and Jameson Jr. and Peeters (2004) for mammals.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.8-1 Impacts to jurisdictional waters of the U.S. and waters of the State.

Dutch Slough may be under USACE and State jurisdiction, but should be verified as such by them. Other wetlands and waters that may be considered federal and State jurisdiction and state-jurisdictional waters are located within the project site boundaries. The majority of the roadside ditches along the off-site areas of Sellers and Cypress Roads are considered to be non-jurisdictional, except for one located adjacent to Dutch Slough which appears to be tidally-influenced, and one south of Cypress Road on the eastern edge of the site that was constructed in a seasonal wetland.

Grading and placement of lots and other infrastructure within the project site and off-site area would require fill of wetlands and waters for which State and/or federal jurisdiction has yet to be determined. As on or off-site jurisdictional waters may be affected by project development, ***potentially significant*** impacts to jurisdictional features may occur.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the impact to a *less-than-significant* level.

4.8-1(a) *To the extent feasible implementation of the project shall be designed and constructed to avoid and minimize adverse effects to waters of the United States or jurisdictional waters of the State of California within the project area.*

4.8-1(b) *A Section 404 permit for fill of jurisdictional wetlands shall be sought, and mitigation for impacts to jurisdictional waters that cannot be avoided shall conform with the USACE "no-net-loss" policy and the USACE Regulatory Guidance Letter No. 02-2 establishing policies and guidance on appropriate mitigation for impacts to jurisdictional waters. Mitigation for impacts to both federal and State jurisdictional waters shall be addressed using these guidelines.*

4.8-1(c) *Mitigation shall include creation of wetlands at a minimum 1:1 ratio in conjunction with preservation/enhancement of wetlands at a minimum 1:1 ratio, and all temporary impacts resulting from construction access or similar activities shall be revegetated and restored.*

Or,

Alternatively, the applicant shall provide the required mitigation either through an in-lieu fee program, purchase of the required acreage in an approved mitigation bank, or an approved Habitat Conservation Plan (HCP).

4.8-1(d) *A mitigation plan shall be prepared for mitigation implemented both on-site and off site that provides guidance on managing and monitoring the wetland mitigation habitat. The mitigation plan shall include jurisdictional and non-jurisdictional wetland mitigation. The mitigation plan shall include standards deemed acceptable by the City of Oakley, USACE, RWQCB, and CDFG. Annual reports of the monitoring activities and results shall be provided to the City of Oakley, USACE, USFWS, CDFG and RWQCB.*

4.8-2 Impacts to Protected and Heritage Trees.

The Oakley Heritage Tree Preservation Ordinance (Section 5-D-2-3A) states that a heritage tree is a tree either 50 or more inches diameter at breast height (dbh, or 4.5 feet above the natural grade); or any tree or trees "worthy of protection" because they have historical or ecological interest or significance, is dependent upon other trees for

health or survival, or is considered an outstanding specimen due to location, size, age, rarity, shape, or health.

The Tree Preservation Ordinance (5-D-3B), which applies to any protected tree, indicates that proposed development shall consider tree alteration or removal as part of the project application, and if necessary, a tree survey shall be submitted. Protected trees are those trees which are adjacent to or part of a riparian, foothill woodland, or oak savannah area, or part of a stand of four or more trees, measure 20 inches or larger dbh, and are one or more of the following native species: bigleaf maple, box elder, California buckeye, white alder, madrone, toyon, California black walnut, California juniper, tanoak or tanbark oak, knobcone pine, digger pine, California Sycamore, Fremont cottonwood, clack cottonwood, California or coast live oak, canyon live oak, blue oak, California black oak, Valley oak, interior live oak, and California bay or laurel. Protected trees can also include any tree that is shown in an approved tentative map, development, or site plan that is required to be retained as a condition of approval, or any tree required to be planted as a replacement for an unlawfully removed tree.

Heritage and protected trees as defined by this Section 5-D-3 of the Oakley Zoning Ordinance are protected from destruction or removal, and construction activities are limited around the dripline of heritage and protected trees. If heritage or protected trees are damaged, the contractor, developer, or owner must repair or replace the damaged tree according to the fees noted in the ordinance.

Trees meeting the definition described in the City of Oakley Tree Protection and Heritage Tree Ordinances are identified in the *Tree Survey Report for the Emerson property and Off-Site Areas* (Sycamore, 2005b)[2]. Using the definitions in the City of Oakley Tree Ordinance, the *Emerson Property and Off-Site Areas* tree survey identified 53 protected trees along Sellers Avenue and Cypress Road that are protected. Removal of heritage and/or protected trees could have a substantially adverse impact.

Numerous large cottonwoods exist south of the remnant dune on the Gilbert property. In addition, off-site development of infrastructure could result in impacts to heritage trees. Therefore, project related development could result in impacts to protected and heritage trees, which would be a ***potentially significant*** impact to trees.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the impact to a *less-than-significant* level.

4.8-2(a) *Building structure and yard design, along with construction activities, shall attempt to retain existing protected and heritage trees on the project site to the maximum extent practicable. Prior to the issuance of grading permits, the project developer shall have a tree preservation plan prepared by an ISA-certified arborist to minimize damage to on-*

site protected and heritage trees during the construction of the project, replace any protected or heritage trees damaged or killed by development of the project, and plant additional trees as determined by the Community Development Department. The plan shall be reviewed and approved by the Community Development Department prior to issuance of a grading permit, and the plan shall be in compliance with Sections 5-D-3A and 5-D-2-3B of the City of Oakley Zoning Ordinance. The tree preservation plan shall include but not be limited to the following elements:

- *The preservation element of the plan shall include but not be limited to installation of protective fencing during construction, appropriate irrigation practices, and inclusion of appropriate tree preservation notes on grading and construction plans. The replacement and new plantings portion of the plan shall include a map showing where the replacement and new trees will be located.*
- *Where mitigation is determined to be necessary, tree removal shall be mitigated at a minimum 3:1 ratio or other ratio acceptable to the City of Oakley, or an in-lieu fee shall be paid on a per-inch basis as determined by the Community Development Department. The mitigation trees shall be established with appropriate maintenance to ensure long-term self-sustaining survivorship.*
- *In the event that any protected or heritage tree is damaged during the construction process, the applicant shall comply with subsection 5-D-3A.5(E) and/or 5-D-3B.6(D) and 5.-D-3B.6 (E) of the Oakley Zoning Ordinance as applicable, including but not limited to notification of the Community Development Director.*

4.8-2(b) *Per the Tree Preservation Ordinance Section 5-D-3B.6(B) and (C), prior to the issuance of any grading or building permit for a property where protected or heritage trees will be removed, the applicant shall deposit cash or other acceptable security with the Community Development Department on a per-tree basis in the amount established by the involved development's conditions of approval of approved applications. As required, the City may hold the deposit for a two-year period to guarantee the health of the trees for a two-year period upon completion of construction. In addition, the applicant may be required to enter into a tree maintenance agreement secured by said deposit/bond by which the applicant agrees to maintain said trees in a living and viable condition throughout the term of agreement. This agreement may be transferred to any new owner of the property for the remaining length of the agreement.*

4.8-2(c) *The applicant shall obtain the necessary permit for the removal and/or destruction of protected or heritage trees that cannot be avoided*

during project construction for the review and approval of the Community Development Department.

4.8-3 Impacts to special-status brachiopods.

The potential for occurrence of special-status brachiopod species is considered low based on a lack of occurrences in the vicinity. However, due to the presence of potentially suitable habitat within the Gilbert property and adjacent off-site areas of Cypress Road for the protected vernal pool fairy shrimp, federally-listed Threatened; midvalley fairy shrimp, a federal Species of Concern; Longhorn fairy shrimp, federally-listed Endangered; California linderiella, a federal Species of Concern; and vernal pool tadpole shrimp, federally-listed Endangered, focused surveys should be conducted according to U.S. Fish and Wildlife Service protocol guidelines (USFWS 1996b). If these special-status brachiopods occur within the project site, the project could have a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level.

4.8-3(a) *Prior to issuance of a grading permit, the applicant shall conduct wet season surveys per the 1996 USFWS Interim Survey Guidelines for Vernal Pool Branchiopods within potentially suitable habitat on the Gilbert Property and adjacent off-site during the appropriate season. If vernal pool fairy shrimp is not found during wet season surveys, a second wet season or dry season soil collection and cyst identification shall be conducted. If federally protected branchiopods are not found after completion of protocol-level surveys, then no further mitigation shall be required. If federally protected branchiopods are found during one or more of the surveys, then the following measures shall be implemented.*

4.8-3(b) *If protected brachiopods are found to occur during protocol surveys on the Gilbert Property, properties that are connected biologically and hydrologically (via ground or surface water) shall also be considered as potentially occupied habitat. Assessment of presence or absence shall be determined on a property-by-property basis, taking into account connectivity of the wetland areas. Project impacts shall be evaluated and mitigation shall be based on an analysis of the following:*

- *Connectivity of aquatic habitats (both ground and surface water);*
- *Habitat quality measured as potential to support listed shrimp species;*
- *Potential for cyst (egg) dispersal;*

- *Adjacent land uses, current and anticipated, and resulting effects on the hydrology of aquatic habitats;*
- *Threats and encroachment on populations of listed species, including edge effects and associated buffers, and habitat fragmentation;*
- *If protected brachiopods are found within the boundary of the project site, impacts to occupied or potentially occupied aquatic habitats and an associated upland buffer, to be determined according to the criteria above, shall be avoided to the extent feasible. If avoidance is not feasible, aquatic habitat and the amount of watershed associated with the preserved pools necessary to sustain the existing hydrology of the pool habitat shall be replaced at a 1:1 ratio at a location approved by the City and USFWS. The habitat in the amount specified above shall be acquired, permanently protected, and enhanced through management for the benefit of the species, to compensate for the loss of aquatic habitat on the project site. A plan describing the mitigation and monitoring requirements and performance standards shall be prepared if habitat is preserved or acquired for special-status fairy shrimp species. This mitigation measure shall be coordinated with the plan in Mitigation Measure 4.8-1 (d). Alternatively, the applicant can provide the required mitigation either through an in-lieu fee program, purchase of the required acreage in an approved mitigation bank, or an approved Habitat Conservation Plan (HCP). Take authorization shall be obtained from the USFWS if federally-listed branchiopods are present on-site.*

4.8-3(c) *If presence of protected brachiopods is confirmed during protocol surveys, the uppermost layer of soil in seasonally inundated habitat may contain cysts of listed crustaceans as well as seeds of vernal pool plants. Therefore, before these wetlands are filled, the top layer of soil shall be made available prior to the start of project grading to any vernal pool creation bank that requests it, with USFWS approval, for inoculating newly created pools. Soil stockpiled for this purpose shall be shielded from rain with a waterproof cover to ensure that it remains completely dry.*

4.8-4 Impacts to special-status dune and sand mound insects.

Special-status insect species, including but not limited to Middlekauf's shieldback katydid, Antioch efferian robberfly, andrenid bee, anthicid beetle and San Joaquin dune beetle, have a low potential to occur within the sand mound habitats on the project site (see Table 4.8-1 for a full list of special-status insect species with a low potential to occur on the site). These invertebrate species are federal Species of

Concern and are not afforded any formal protection under the federal or State Endangered Species Acts. The portion of the sand dune habitat located on the neighboring Emerson property, site, which extends onto the adjacent Cypress Grove property, was surveyed with negative findings for these species in 2004 by entomologist Dr. Dick Arnold. Given the recent negative findings on the Cypress Grove portion of the dune and the negative findings on the neighboring Emerson site, as well as marginal quality of the habitat on the Gilbert Property, and the dune's disturbed nature, implementation of the project is expected to have a ***less-than-significant*** impact on these species.

Mitigation Measure(s)
None required.

4.8-5 Impacts to special-status fish species.

Potential special-status fish species that may be present in Dutch Slough include Sacramento perch, a federal Species of Concern and a California Species of Special Concern; delta smelt, federally- and state-listed as Threatened; and Sacramento splittail, a California Species of Special Concern; Chinook salmon, winter-run, federally- and state-listed Endangered; Central Valley fall/late run, a federal Candidate species; Central Valley spring-run, federally- and State-listed Threatened; and steelhead, Central Valley ESU, federally-listed Threatened. As the potential exists for construction activities within the ordinary high water level, the project could have a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level.

4.8-5(a) *A Fish Rescue Plan for the project area shall be prepared that details measures to avoid take of fish during any construction activities within the ordinary high water level of Dutch Slough. To ensure compliance and implementation of the plan, a qualified biologist shall be present during construction and pumping activities.*

4.8-5(b) *If construction takes place within the ordinary high water level, formal consultation with the NOAA Fisheries, and USFWS shall be required in conjunction with USACE Section 404 permit. If construction takes place below top-of-bank, formal consultation with CDFG as part of the Streambed Alteration Agreement to determine appropriate measures to avoid impacts to special-status fish species. A mitigation plan shall be prepared that includes measures to avoid take of special-status fish during construction activities and post construction water withdrawal activities. At a minimum, the following mitigation measures shall be incorporated into the mitigation plan:*

- *If entrapment in the siphons, flood gates, pumps, outfalls or other features is determined by the fisheries biologist to cause a potentially significant impact, a fish screen or other structure approved by USFWS, NOAA Fisheries, and CDFG shall be placed on these features to prevent fish entering the diversions system.*
- *Turbidity and suspended sediment levels in water discharged into Emerson Slough shall not exceed more than 10 percent above ambient levels in these water bodies.*
- *Waterway construction in Emerson and Dutch Slough shall occur between July 1 and October 1 (or other period requested by the NOAA Fisheries) to work outside of the season in which juvenile salmonids could be present in the system.*

4.8-6 Impacts to silvery legless lizard.

Silvery legless lizard was positively identified in a remnant dune area located on the far south portion of the Cypress Grove project in January and June 2004 during pre-construction surveys (Sycamore 2004a). Silvery legless lizard was also found just off site of the Cypress Grove property on a remnant dune located along the Burlington Northern Santa Fe (BSNF) Railroad tracks. Additionally, a population of silvery legless lizards is known to occur approximately 1.5 miles west of the project site within the East Bay Regional Park Legless Lizard Preserve as recently as May 2000 (CDFG 2004a, Swaim Biological Consulting 2002).

Suitable silvery legless lizard habitat is present within the sand mound located in the northwest corner of the neighboring Emerson project site, and is contiguous with the interior dune habitat on the Cypress Grove property that was surveyed concurrently with the southern dune on Cypress Grove where six silvery legless lizards were found. Beechey (California) ground squirrels have created numerous burrows in the project area, which may be utilized by these lizards for cover. Bush lupine also occurs within this vegetation community. Only the northwestern portion of the Emerson property contains sandy soils suitable for silvery legless lizard inhabitation; however, the mound's proximity to sand mound habitats on the Gilbert Property indicates that silvery legless lizard could occur on the Gilbert site. Silvery legless lizards have been found in dune habitats on the adjacent Cypress Grove project site, specifically the dune south of Cypress Road; however, the on-site sand mound is an extension of the dune located on the northern portion of the Cypress Grove and Emerson sites. This on-site dune was surveyed as part of the Cypress Grove project and silvery legless lizard was not found (Sycamore 2004b). Nonetheless, based on the availability of suitable habitat in close proximity to the project site and the recent occurrences within the region, the silvery legless lizard is considered to have a moderate potential to occur on the project site. Therefore, project impacts to this species could be ***potentially significant***.

Mitigation Measure

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

4.8-6(a) *Pre-construction surveys for silvery legless lizard shall be conducted within the sand mound habitat on the project site and submitted to the City of Oakley for review and approval prior to the issuance of grading permits. If silvery legless lizard is not found, no further mitigation is required. If they are found Mitigation Measure 4.8-6(b) shall be implemented.*

4.8-6(b) *If silvery legless lizard is documented on the project site, occupied habitat as well as other highly suitable habitat shall be avoided to the maximum extent feasible. If avoidance is not feasible, habitat shall be replaced at a 1:1 ratio at a location approved by the City and CDFG. Habitat in the amount specified above shall be acquired, permanently protected, and enhanced through management for the benefit of the species, to compensate for the loss of suitable sand dune and mound habitat on the project sites. Alternatively, the applicant shall provide the required mitigation either through an in-lieu fee program, purchase of the required acreage in an approved mitigation bank, or an approved Habitat Conservation Plan (HCP).*

4.8-7 Impacts to giant garter snake.

Potential aquatic habitat for the giant garter snake, federally-listed Threatened, is present within Emerson Slough, Dutch Slough, perennially inundated irrigation/drainage ditches, and the Contra Costa Canal adjacent to the project site. Adjacent upland habitats contain ground squirrel burrows that provide dispersal, refugia, and winter retreat opportunities. Focused surveys for giant garter snake in the Contra Costa Canal in 2003 resulted in negative findings as did focused surveys conducted in 2005 on the Gilbert and Burroughs properties. However, giant garter snakes have been observed approximately four miles northwest and six miles north of the project site, within the waterways of the Delta (CDFG 2004a, Swaim Biological Consulting 2002) in 2002 and 1998 respectively. These recent occurrences in the region suggest that individual giant garter snakes may use the site environs. Given occurrences in the region, and the presence of potential habitat in Emerson Slough, Dutch Slough, potentially inundated irrigation/drainage ditches and the Contra Costa Canal, giant garter snake could move onto the site. The site's proximity to Marsh Creek and the Contra Costa Canal, as well as the presence of suitable escape and refugia habitat on-site in the form Beechey (California) ground squirrel burrows, indicate that the site could potentially be used by giant garter snakes. Therefore, the project could have a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level.

4.8-7(a) *The following measures shall be implemented to avoid potential take of individual garter snakes during construction:*

- *All construction activity within potential giant garter snake aquatic habitat shall be conducted between May 1 and October 1. This is the active period for giant garter snakes and if present, potential effects are lessened because snakes are actively moving and can avoid danger.*

- *Any dewatered areas within the sloughs shall remain dry for at least 15 consecutive days prior to excavating or filling of the dewatered area.*

- *A qualified biologist shall provide project contractors and construction crews with a worker-awareness program appropriate for giant garter snakes before any work within aquatic habitats or adjacent upland habitats is initiated. This program shall be used to describe the species, its habits and habitats, its legal status and required protection, all applicable mitigation measures, and*

conditions of any state or federal permits as they relate to giant garter snake. Proof of this instruction shall be submitted to the City.

- *During project activities and following construction, all trash shall be properly contained, removed from the work site, and disposed of properly.*

- *24-hours prior to construction activities, the project area shall be surveyed for giant garter snake. Survey of the project area shall be repeated if a lapse in construction activity of two weeks or greater has occurred. If a giant garter snake is encountered during construction, activities shall not begin until appropriate corrective measures have been completed or it has been determined that the snake shall not be harmed. Any sightings and any incidental take shall be reported immediately to the USFWS at (916) 414-6600.*

- *Movement of heavy equipment to and from the project site shall be restricted to established roadways to minimize disturbance.*

- *After completion of construction activities, any temporary fill and construction debris shall be removed and, wherever feasible, disturbed areas shall be restored to pre-project conditions. Restoration work shall include replanting emergent vegetation.*

- *All fueling and maintenance of vehicles or other equipment and staging areas shall occur at least 66 feet from any water body. Prior to the onset of work, the applicant shall prepare a plan to allow prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.*

- *To control erosion during and after project implementation, the applicant shall implement best management practices, as identified by the Regional Water Quality Control Board. Drainage banks shall be stabilized by compacting additional soil after sediment and vegetation removal to minimize the potential for erosion. Additionally, during sediment and vegetation removal in a channel that still contains flowing water during August, September, and October, a silt fence shall be installed directly downstream of the project site. This will help to prevent silt accumulation downstream of the project site.*

4.8-8 Impacts to western pond turtle.

Western pond turtle, a California Species of Special Concern, has been documented in the Contra Costa Canal and on the neighboring Cypress Grove property, and has the potential to occur in Emerson Slough, Dutch Slough and perennial irrigation/drainage ditches on the project site. This species has potential to nest and over-winter in upland habitats such as the grasslands/ruderal habitats adjacent to aquatic habitats on the Gilbert property, as evidence of a Western pond turtle nest was observed adjacent to the Emerson site. Temporary construction impacts that may affect this species include presence of heavy equipment, placement of a temporary cofferdam, placement of rip-rap, and earthmoving activities and fill of irrigation/drainage canals as part of residential, and levee alignment or modification construction. The proposed project may result in impacts to upland habitat for western pond turtle. Loss of habitat and potential loss of individuals and nests if this species is present within construction areas could have a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level.

4.8-8(a) *A qualified biologist shall conduct pre-construction surveys for western pond turtles in all construction areas identified as potential nesting or dispersal habitat located within 1,000 feet of potential aquatic habitat 48 hours prior to initiation of construction activities. If western pond turtle is found during pre-construction surveys, it shall be relocated as necessary to a location deemed suitable by the biologist and CDFG (i.e., at a location which is a sufficient distance from construction activities). This survey shall include looking for turtle nests within the construction area. If a nest is found within the construction area, construction shall not take place within 100 feet of the nest until the turtles have hatched and have left the nest or can be safely relocated with assistance from CDFG.*

4.8-8(b) *Because attempting to locate pond turtle nests will not result in a realistic probability of detection, after completion of pre-construction surveys, and relocation as necessary, exclusion fencing shall be placed around all construction-sites adjacent to aquatic habitats to eliminate the possibility of nest establishment in uplands adjacent to aquatic areas.*

4.8-8(c) *If construction activities occur in aquatic areas where turtles have been identified during pre-construction or other surveys, a biological monitor shall be present during disturbance of those aquatic habitats. If any turtle is found, it shall be relocated as necessary to a location*

deemed suitable by the biologist and CDFG (i.e., at a location which is a sufficient distance from construction activities).

4.8-8(d) *A qualified biologist shall provide project contractors and construction crews with a worker-awareness program before any work within aquatic habitats or adjacent upland habitats that are appropriate for western pond turtles. This program shall be used to describe the species, its habits and habitats, its legal status and required protection, and all applicable mitigation measures.*

4.8-9 Impacts to western burrowing owl.

Burrowing owl is a California and federal Species of Concern. Despite negative focused breeding season surveys of the Gilbert Property, a single burrowing owl was observed on the Gilbert property during the biotic survey conducted in November 2004. The owl was likely an over-wintering owl or an owl using the site for foraging. Protocol-level breeding season surveys resulted in negative findings for burrowing owl or sign of burrowing owl, although ground squirrel burrows were present on the Gilbert property within the remnant sand dune area. Because of the presence of burrows and the sighting of an individual owl in November 2004, burrowing owl is considered to have a moderate potential to occur on the Gilbert property. Disturbance of over-wintering or nesting owls and habitat loss could have a ***potentially significant*** impact on burrowing owls.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level.

4.8-9(a) *Prior to issuance of a grading permit, pre-construction surveys of all potential burrowing owl habitat shall be conducted by a qualified biologist within the project area and within 250 feet of the project boundary. Presence or sign of burrowing owl and all potentially occupied burrows shall be recorded and monitored according to CDFG and California Burrowing Owl Consortium guidelines. If burrowing owls are not detected by sign or direct observation, construction may proceed.*

4.8-9(b) *Prior to issuance of a grading permit focused over-wintering surveys of all potential burrowing owl habitat shall be conducted by a qualified biologist within the Gilbert property. Presence or sign of burrowing owl shall be recorded and monitored according to CDFG and California Burrowing Owl Consortium guidelines.*

4.8-9(c) *If potentially nesting burrowing owls are present during pre-construction surveys conducted between February 1 and August 31,*

grading shall not be allowed within 250 feet of any nest burrow during the nesting season (February-August), unless approved by the CDFG.

4.8-9(d) *If burrowing owl is detected during pre-construction surveys outside the nesting season (September 1-January31), passive relocation and monitoring may be undertaken by a qualified biologist following CDFG and California Burrowing Owl Consortium guidelines, which involve the placement of one-way exclusion doors on occupied and potentially occupied burrowing owl burrows. Owls shall be excluded from all suitable burrows within the project area and within a 160-foot buffer zone of the impact area. A minimum of a week shall be allowed to accomplish this task and allow for owls to acclimate to alternate burrows. These mitigation actions shall be carried out prior to the burrowing owl breeding season (February 1- August 31) and, until construction begins, the site shall be monitored weekly by a qualified biologist to ensure that burrowing owls do not re-inhabit the site.*

4.8-9(e) *If burrowing owl or sign of burrowing owl is detected at any time on the project site, a minimum of 6.5 acres of foraging habitat per pair or individual resident bird, shall be acquired and permanently protected to compensate for the loss of burrowing owl habitat. The acreage shall be based on the maximum number of owls observed inhabiting the property for any given observation period, pre-construction survey, or other field visit. The protected lands shall be occupied burrowing owl habitat and at a location acceptable to CDFG and the City of Oakley. The habitat in the amount specified above shall be acquired, permanently protected, and enhanced through management for the benefit of the species, to compensate for the loss of burrowing owl habitat on the project site. Alternatively, the applicant shall provide the required mitigation either through an in-lieu fee program, purchase of the required acreage in an approved mitigation bank, or an approved Habitat Conservation Plan (HCP).*

4.8-9(f) *Before construction activities begin, all construction personnel shall receive training that includes photos of burrowing owl for identification purposes, habitat description, limits of construction activities in the project area, and guidance regarding general measures being implemented to conserve burrowing owl as they relate to the project.*

4.8-9(g) *A monitoring report of all activities associated with pre-construction surveys, avoidance measures, and passive relocation of burrowing owls shall be submitted to the City and CDFG no later than two weeks before initiation of grading.*

4.8-10 Impacts to raptors and migratory birds.

Several special-status and common bird species have the potential to nest in existing vegetation, including trees, shrubs, and ruderal habitats, within the project area, including the following: raptors such as red-tailed hawk, red-shouldered hawk, Cooper's hawk, sharp-shinned hawk, American kestrel, prairie falcon, rough-legged hawk, ferruginous hawk, golden eagle, merlin, short-eared owl, white-tailed kite, and northern harrier; and birds such as California horned lark, loggerhead shrike, and tri-colored blackbird. Any removal of buildings, trees or shrubs, grading, or construction activities in the vicinity of active passerine or non-passerine land bird nests, or active raptor nests, could result in nest abandonment, nest failure, or premature fledging. Destruction or disturbance of active nests would be in violation of the Migratory Bird Treaty Act (MBTA) and California Department of Fish and Game (CDFG) Code. Such disturbance would be considered a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level.

4.8-10(a) *The removal of any buildings, trees, emergent aquatic vegetation, or shrubs shall occur from September 1 through December 15, outside of the avian nesting season. If removal of buildings, trees, emergent aquatic vegetation, or shrubs occurs, or construction begins between February 1 and August 31 (nesting season for passerine or non-passerine land birds) or December 15 and August 31 (nesting season for raptors), a nesting bird survey shall be performed by a qualified biologist within 14 days prior to the removal or disturbance of a potential nesting structure, trees, emergent aquatic vegetation, or shrubs, or the initiation of other construction activities during the early part of the breeding season (late December through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, a qualified biologist shall inspect all potential nesting habitat (trees, shrubs, structures, grasslands, pastures, emergent aquatic vegetation, etc.) in and immediately adjacent to the impact areas for nests.*

4.8-10(b) *All vegetation and structures with active nests shall be flagged and an appropriate non-disturbance buffer zone shall be established around the nesting tree. The size of the buffer zone shall be determined by the project biologist in consultation with CDFG and will depend on the species involved, site conditions, and type of work to be conducted in the area. Typically, if active nests are found, construction activities shall not take place within 500 feet of the raptor nests and within 100 feet of other migratory birds until the young have fledged. A qualified*

biologist shall monitor active nests to determine when the young have fledged and are feeding on their own. The project biologist and CDFG shall be consulted for clearance before construction activities resume in the vicinity.

4.8-11 Impacts to Swainson's hawk.

Mature trees provide suitable nesting habitat on the project site for Swainson's hawk, state-listed Threatened. At least two Swainson's hawk nests are known to occur within 1,000 feet of the project area, one active and one removed (CDFG 2004a, Monk 2005).

The cultivated/ruderal habitats on the project site provide suitable foraging habitat for Swainson's hawks, and they have been observed foraging over these areas. Dryland pasture, irrigated pasture, grasslands, and other suitable foraging habitats such as row crops, in particular alfalfa fields, are abundant in the vicinity of the project area. CDFG identifies whether or not a project will adversely affect suitable foraging habitat within a ten-mile radius of an active Swainson's hawks nest (used during one or more of the last 5 years). The ten-mile radius standard is the flight distance between active nest sites and suitable foraging habitats as documented in telemetry studies by Estep (1989) and Babcock (1993, 1995). Telemetered Swainson's hawks have been documented by Babcock (1993) utilizing foraging areas of up to 19,000 acres surrounding nest sites. According to calculations in the *Revised Swainson's Hawk Foraging Habitat Analysis the 150-Acre Emerson Property South of the Contra Costa Canal, Oakley, Contra Costa County, California* (Sycamore 2005), presently between 65,181 and 120,078 acres of foraging habitat exist within the ten-mile radius of the nest sites, depending upon individual nest. Development of the proposed project would remove approximately 120 acres of foraging habitat for Swainson's hawk within the above-described area presently available. Based on this analysis, the currently proposed project is not likely to substantially affect Swainson's hawk foraging habitat.

Loss of an occupied Swainson's hawk nest, however, would be considered a significant impact. If during the pre-construction surveys, Swainson's hawks are found nesting on or adjacent to the site, the project could have a ***potentially significant*** impact on Swainson's hawks.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level.

4.8-11(a) *In order to ensure that nesting Swainson's hawks shall not be affected by construction on the project site or off-site improvement locations, a qualified biologist shall conduct pre-construction surveys according to CDFG and Swainson's Hawk Technical Advisory Committee guidelines (2000). Survey Period I occurs from January 1 – March 20,*

Period II from March 20 – April 5, Period III from April 5 – April 20, Period IV from April 21 – June 10, and Period V is from June 10 – July 30. Three surveys shall be completed in at least each of the two survey periods immediately prior to a project's initiation and encompass the area within ½ mile of the project site. If a nest site is found, then either of the following measures shall be implemented:

4.8-11(b) *Trees containing known or potential raptor nest sites that must be removed as a result of project implementation shall be removed during the non-breeding season (September 1 to January 31) to discourage future nesting attempts, on the condition that no Swainson's hawk pair is currently utilizing the nest site. Monitoring evidence that any nests in trees planned for early removal are unattended by reproductive-aged birds must be provided; or*

4.8-11(c) *If an active Swainson's hawk nest is found sufficiently close (as determined by the qualified biologist and CDFG) to the construction area to be affected by construction activities, a qualified biologist shall determine the extent of a construction-free buffer zone to be established around the nest. Intensive new disturbances (e.g., heavy equipment activities associated with construction) that may cause nest abandonment or forced fledging shall not be initiated within this buffer zone between March 1 and September 1 until it is determined by a qualified biologist in coordination with CDFG that the young have fledged and are feeding on their own.*

4.8-12 Impacts to special-status bat species.

Several mature trees exist along the roadways and around the abandoned home site, which provide suitable bat roosting habitat. In addition, the abandoned residences located on the project site provide potentially suitable roosting habitat for bats. Special-status bat species that have the potential to occur on-site including pallid bat, a California Species of Special Concern, Townsend's big-eared bat, a federal Species of Concern and California Species of Special Concern, and Yuma myotis (*Myotis yumanensis*), a federal Species of Concern. Although these species have a low potential to occur on the project site, the existing building and mature trees located within the project site provide potential roosting habitat for these special-status bat species. If special-status bats are found roosting on-site, the project could have a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level.

4.8-12(a) *A pre-construction survey for roosting bats shall be performed by a qualified biologist within 30 days prior to any removal of trees or*

structures on the site. If no active roosts are found, then no further action shall be required. If either a maternity roost or hibernacula (structures used by bats for hibernation) is present, the following mitigation measures shall be implemented.

4.8-12(b) *If active maternity roosts or hibernacula are found in trees or structures which are to be removed as part of project construction, the project shall be redesigned to avoid the loss of the tree or structure occupied by the roost to the extent feasible as determined by the City. If an active maternity roost is located and the project cannot be redesigned to avoid removal of the occupied tree or structure, demolition shall commence before maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). Disturbance-free buffer zones as determined by a qualified biologist in coordination with CDFG shall be observed during the maternity roost season (March 1 - July 31).*

4.8-12(c) *If a non-breeding bat hibernacula is found in a tree or structure scheduled for removal, the individuals shall be safely evicted, under the direction of a qualified biologist (as determined by a Memorandum of Understanding with CDFG), by opening the roosting area to allow airflow through the cavity. Demolition shall then follow at least one night after initial disturbance for airflow. This action shall allow bats to leave during darkness, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Trees or structures with roosts that need to be removed shall first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours.*

4.8-13 Impacts to wildlife corridors.

Emerson Slough, Dutch Slough and the Contra Costa Canal, are potential wildlife movement corridors, which may facilitate the movement of animals to and from the project area and may provide safe refuge for species that may forage within the project area during various times of the year, including the giant garter snake (if present) and western pond turtle (if present). However, lands and hydrologic features surrounding the site are not suitable to facilitate movement and dispersal of many other special-status species as described in the above section due to agricultural practices, the isolated nature of habitats (*i.e.,* sand mounds), introduction of exotic predators, and suburban development. Additionally, the project site does not provide a key movement corridor for wildlife in the region given the present agricultural practices and surrounding land uses. Therefore, project impacts to wildlife corridors are expected to be ***less-than-significant***.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.8-14 Contribution to cumulative impacts to biological resources in the project area.

The Oakley area, like many other communities in the Bay Area, is experiencing a great deal of urban growth. Many housing developments are already approved in the surrounding areas. In the immediate vicinity of the project site are several projects in various stages of the entitlement and development process. To the west is the 155-acre Cypress Grove development, which will result in the removal of 155 acres that were previously under cultivation. Approximately 1.5 miles to the east is the East Cypress Corridor Specific Plan area, an approximate 2,500-acre area that has been used historically for irrigated pasture and row crops and which is planned for urban development. Although the 1,166-acre Dutch Slough restoration project located immediately north of the project area will provide valuable habitat for native plant and wildlife species in the region, cumulatively, these projects could affect common as well as special-status plant and animal species with the reduction of available habitat and the potential loss of individuals.

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

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce cumulative impacts to biological resources to a *less-than-significant* level.

4.8-14 Implement Mitigation Measures 4.8-1 through 4.8-12.

Endnotes

[1] Zentner and Zentner. *Biological Resources Section.* February 2007.
[2] Sycamore Associates. *Tree Survey Report.* 2005.

4.9 GEOLOGY AND SOILS

4.9 GEOLOGY AND SOILS

INTRODUCTION

This section analyzes the effects of the proposed subdivisions upon soils and geology within the project area. Information in this chapter is drawn from *Geotechnical Investigation: Gilbert Property Residential Development* (See Appendix J of the Draft EIR) prepared by Stevens, Ferrone, & Bailey Engineering Company Inc.[1] (August 30, 2004), a geology report for the Dutch Slough Properties Draft EIR (See Appendix K of the Draft EIR) prepared by Kleinfelder[2] (November 18, 2005), the Soil Survey of Contra Costa County[3] (1977) and the City of Oakley General Plan and General Plan EIR.

ENVIRONMENTAL SETTING

The following background setting information focuses on the site seismicity, soil conditions, groundwater, expansive soils, and liquefaction as well as the general conditions and expansiveness of the on-site soils.

Regional Geology

The site is located at the margin of the Great Valley Geomorphic Province and the Coast Ranges Geomorphic Province. The Great Valley Geomorphic Province consists of an elongated structural trough that has been filled with a sequence of sedimentary deposits ranging from Jurassic to recent in age. In the San Joaquin/Sacramento Delta, sedimentary bedrock is up to six miles in thickness (Atwater, 1982 qtd. in Kleinfelder, 2005). Geophysical evidence suggests that the Great Valley is underlain at depth with granitic rocks of the Sierra Nevada Province. The adjacent Coast Ranges Geomorphic Province is underlain at depth by Franciscan Assemblage rocks.

The San Joaquin/Sacramento Delta lies at the junction of the Sacramento and San Joaquin rivers, the two major waterways that drain the Central Valley. The Delta area currently consists of a braided pattern of brackish to freshwater tidally-influenced channels and sloughs encircling a series of low-lying islands.

Site Geology

The near-surface sediments across the project consist of eolian (wind-blown), lacustrine (lake-deposited) and alluvial deposits. These sediments are typically irregularly stratified, poorly consolidated deposits of clay, silt, sand, and minor gravel.

The geology of the surficial deposits on the site has been largely influenced by changes in sea level during the Late Pleistocene. Most of the high-standing areas in the site vicinity are the crests of old sand dunes and are underlain by sandy eolian soils deposited during the later part of the most recent low-stand of sea level. According to Atwater, these eolian deposits formerly extended across most of the surface of the site but are now buried in low-lying areas by younger sediments.

The alluvial fan of Marsh Creek extends across the site and Atwater's map (Atwater, 1982 qtd. in Kleinfelder, 2005) and text imply that alluvium of Marsh Creek typically overlies the sandy eolian deposits in low-lying areas. Much of the alluvium in the site vicinity consists of gray silt and clay deposited in near sea-level flood basins and ephemeral lakes.

Site Seismicity

The project is located in an area of moderate seismicity. Faults, active or otherwise, are not known to surface on or very close to the project site. In addition, the site does not include any areas mapped within any Earthquake Fault Zone. The closest active strike-slip fault with surface expression, as identified by the California Geological Survey, is the Concord fault located approximately 19 miles to the west. Other nearby active strike-slip faults include the Calaveras fault 22 miles to the southwest, the Hayward fault 32 miles to the west, and the San Andreas fault 50 miles to the west.

The Midland fault was mapped by Jennings (1994) approximately 0.5 miles east of the site and by Bortugno (1991) approximately two miles east of the site. An unnamed queried fault, assumed to be the Midland fault, is also mapped by the City of Oakley (*Oakley General Plan 2020*) at approximately one mile east of the site. According to Kleinfelder's draft Geology Chapter for the proposed project, Crane (1971) mapped a postulated concealed splay of the Midland fault across the subject site. However, evidence does not exist to support that Crane's postulated concealed splay of the Midland fault has a risk of surface rupture on the subject site. The Midland fault is thought to be a part of the Coast Ranges-Sierran Block (CRSB) fault system.

Because of the presence of active faults in the region, the area is considered seismically active. Numerous small earthquakes occur every year in the region, and large (Greater than Magnitude 7) earthquakes have been recorded and can be expected to occur in the future. Table 4.9-1 lists distances to known active and potentially active strike-slip faults located within 62 miles of the site and summarizes their estimated earthquake magnitudes.

A significant seismic source listed is the Coast Ranges-Sierran Block (CRSB) boundary, mapped along the west side of the Central Valley. As the name implies, the Sierran Block is the approximate boundary between the actively uplifting east side of the Coast Range crustal block and the west side of the Sierran crustal block. The west side of the Sierran block is covered by the thick veneer of sedimentary rock that fills the Central Valley. The boundary between the two blocks is thought to be a zone of tectonic crustal shortening and compression. The compression is structurally accommodated by a series of generally west-dipping buried or "blind" thrust faults, along which Coast Range rocks have been thrust eastward over Central Valley sediments. According to Wakabayashi and Smith (1994), the CRSB can be divided into a series of segments that are thought to be seismically independent. The local segments of the CRSB, according to the California Geological Survey (Peterson, et al., 1996) pass through the area in the approximate vicinity of the site. Because the CRSB thrust faults are thought to exist entirely in the subsurface, the exact location of the boundary, that is a "surface fault trace," cannot be

defined. However, an earthquake on the local segment of the CRSB could occur in the subsurface below or a few miles east or west of the site.

Table 4.9-1
Regional Active and Potentially Active Faults

Fault Name	Approximate Distance in Miles[1]	Maximum Moment Magnitude[2]
Great Valley	5.2	6.7
Greenville	12.0	6.9
Concord – Green Valley	17.6	6.9
Calaveras	21.3	6.8
Hayward	30.3	7.1
West Napa	32.8	6.5
Rogers Creek	36.4	7.0
Hunting Creek – Berryessa	42.4	6.9
Foothills Fault System	47.3	6.5
San Andreas (1906)	48.8	7.9
Monte Vista- Shannon	49.3	6.5
San Gregorio	53.1	7.3
Ortigalita	54.2	6.9
Sargent	60.8	6.8
Point Reyes	61.8	6.8

Notes:
1. Source: EQFault, 2003.
2. Source: CDMG, Open-File Report 96-08.The Movement Magnitude is commonly used by scientists to measure the amount of energy released by an earthquake.
Source: ENGEO, Inc., 2005.

The historic seismicity of the eastern Coast Ranges includes a number of earthquakes in the Magnitude (M) 5.0 to M 6.8 range, including the M 6.3 1889 Antioch-Collinsville earthquake, the M 6.4 to 6.8 1892 Vacaville-Winters earthquakes, and the M 6.0 to 6.5 1983 Coalinga earthquakes. Based on historic seismicity and segment lengths, the CRSB is considered generally capable of producing M 6.0 to 6.8 earthquakes. The CRSB faults are not known to extend to the ground surface and the State of California has not defined Earthquake Fault Hazard Zones around the postulated traces. Therefore, the actual location of a possible earthquake epicenter in the CRSB cannot be easily estimated, so the maximum ground shaking levels at the site could vary as described above. However, the recurrence interval for the local segments of the CRSB is believed to be in the range of 500 to 650 years (Peterson, et al. 1996), much longer than for the nearby strike-slip faults (commonly 150 to 250 years).

Soil Conditions

The site is mapped by the Soil Survey of Contra Costa County (1977). In general, the project is underlain by variable layers of soft to stiff clayey material and loose to very dense sandy material to the maximum depth explored of 50 feet. The soils across the project site are Dehli Sand (DaC), Marcuse Clay (Mb), Piper Loamy Sand (Pe). Of these, Delhi Sand and Piper Loamy Sand are

considered Farmland of Statewide Importance by the U.S.D.A Natural Resources Conservation Service. The characteristics of the above soils are described in Table 4.9-2, below.

Table 4.9-2
Characteristics of the Soils on the Project Site

Soil	Characteristics
Delhi Sand (DaC)	Slopes are 2 to 9 percent. Runoff is slow or very slow, and the hazards of soil blowing and water erosion are slight where the soil is tilled and exposed.
Marcuse Clay (Mb)	Slopes of less than 2 percent. Poorly drained. Subject to ponding, or water runs off very slowly. No hazard of erosion.
Piper Loamy Sand (Pe)	Slopes of 0 to 2 percent. On the delta and 5 to 10 feet below sea level. Subject to frequent ponding and water runs off very slowly. Soil blowing is a hazard where soil is tilled or exposed. Permeability is rapid.

Source: Soil Survey of Contra Costa County, California. USDA Soil Conservation Service, 1977.

Expansive Soil

The near surface soils in portions of the project site consist of moderately expansive clay. Expansive soils shrink and swell as a result of moisture changes, causing heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Building damage due to moisture changes in expansive soils can be reduced by re-grading the pad areas with appropriate non-expansive soils, pre-swelling the soils by moisture conditioning, stabilizing the expansive soil through lime treatment, and/or modifying or stiffening foundations to resist movement.

Groundwater

The depth to groundwater varies across the project site from approximately one to 15 feet below the existing ground surface. In addition, the groundwater elevation may fluctuate due to seasonal variation in rainfall, tidal action or other factors not in evidence at this time.

Liquefaction

The most significant geotechnical issue to be considered in the design of the project is the presence of liquefiable dune sand near the ground surface across most of the project site. During earthquakes, ground shaking may cause a loss of strength in cohesionless saturated soils. This process is called liquefaction and occurs most commonly in loose sands associated with a high water table. In general, variable layers of potentially liquefiable material were encountered in the upper 30 feet of the project site during soil explorations. Below a depth of 30 feet, the sandy materials are dense and generally not liquefiable.

REGULATORY CONTEXT

Existing policies, laws and regulations that would apply to the proposed projects are summarized below.

State Regulations

California Building Standards Code / Uniform Building Code

Site development and design are regulated in the State of California by the California Building Standards Code (CBC), based on the federal Uniform Building Code (UBC) and suited to the unique sensitivity of the State's geology and faultlines. CBC and UBC regulations must be complied with in consideration of expansive soils, drainage, erosion, earthquake resistance, and required safety measures during on-site development. Geologic and soils conditions would also determine the proper installation of underground communications and utility lines.

Local Regulations

City of Oakley General Plan

Goals, policies, laws, and regulations established in the Oakley 2020 General Plan, are listed below as applicable:

Health and Safety Element

Geology and Seismic Hazards

Goal 8.1 Protect human life, reduce the potential for serious injuries, and minimize the risk of property losses from the effects of earthquakes, including fault rupture, ground shaking, and liquefaction - induced ground failure.

Policy 8.1.1 Recognize that a severe earthquake hazard exists and reflect this recognition in the City's development review and other programs.

Policy 8.1.2 Include a thorough evaluation of geologic-seismic and soils conditions at risk in all significant land use decisions (General Plan amendment, rezoning, etc., affecting 10 acres or more).

Policy 8.1.3 Require the design of structures for human occupancy for satisfactory performance under earthquake conditions.

Policy 8.1.4 Prohibit the erection of critical structures and facilities whose loss would substantially affect the public safety or the provision of needed services, in areas where there is a high risk of severe damage in the event of an earthquake.

Policy 8.1.6 Prohibit construction of structures for human occupancy, and structures whose loss would affect the public safety or the provision of needed services, within 50 feet of known active faults as referenced in the Alquist/Priolo Act.

Policy 8.1.7 In areas where active or inactive earthquake faults have been identified, the location and/or design of any proposed buildings, facilities, or other development shall be modified to mitigate possible danger from fault rupture or creep.

Policy 8.1.8 To the extent practicable, the construction of critical facilities, structures involving high occupancies, and public facilities should not be sited in areas identified as, or underlain by deposits classified as, having a high liquefaction potential.

Policy 8.1.9 Any structures permitted in areas of high liquefaction potential shall be sited, designed and constructed to minimize the dangers from damage due to earthquake-induced liquefaction. Approval of public and private development projects shall be contingent on geologic and engineering studies which: 1) define and delineate potentially hazardous geologic and/or soils conditions, 2) recommend means of mitigating these adverse conditions; and 3) provide implementation of the mitigation measures.

IMPACTS AND MITIGATION MEASURES

The geological impacts related to the proposed projects are analyzed and assessed in this section.

Standards of Significance

In accordance with Appendix G of the CEQA Guidelines, an impact on the geology of the project site would be considered significant if any of the following conditions would potentially result from the proposed project's implementation:

- Exposure of people, structures, or infrastructure components to increased risk of injury or damage due to the presence of expansive soils, soil settlement/compaction, or other geotechnical constraints.
- Exposure of people or structures to substantial, adverse effects as a result of strong ground shaking, seismic-related ground failure, liquefaction, lateral spreading, landslides, or lurch cracking;
- Substantial alteration of the existing topography through significant grading activities; or
- Substantial erosion or unstable slope or soil conditions through alteration of topographic features, dewatering, or changes in drainage patterns.

Method of Analysis

Analyses for this section were undertaken by Stevens, Ferrone & Bailey Engineering Company, Inc. (August 30, 2004).

Stevens, Ferrone & Bailey (SFB) Engineering Company, Inc.'s field investigation for the Gilbert property consisted of a surface reconnaissance and a subsurface exploration program using truck-mounted drill rigs equipped with five- to eight-inch diameter, continuous flight, solid and hollow stem augers. Fourteen exploratory borings were drilled on August 6 and 9, 2004, to a maximum depth of approximately 19 feet. In addition, six Cone Preparation Tests (CPTs) were performed on August 12, 2004 and were advanced to a depth of approximately 50 feet below the ground surface. Representative samples were obtained from the exploratory borings at selected depths appropriate to the investigation. Undisturbed samples were obtained using three-inch O.D. modified California sampler; disturbed samples were obtained used the two-inch O.D. split spoon sampler. All samples were transmitted to SFB's office for evaluation and appropriate testing. Resistance blow counts were obtained in SFB's borings with the samplers by dropping a 140-pound hammer through a 30-inch free fall. The sampler was driven 18 inches, or a shorter distance where hard resistance was encountered, and the number of blows were recorded for each six inches of penetration. The blows per foot recorded on the boring logs represent the accumulated number of converted blows that were required to drive the last 12 inches, or the number of inches indicated where hard resistance was encountered. The blow counts recorded on the boring logs have been converted to equivalent SPT field blow counts, but have not been corrected for overburden, silt content, or other factors.

Conclusions in this chapter are drawn by using the significance criteria listed above and, if applicable, mitigation measures are prescribed.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.9-1 Damage to foundations, pavements, and other structures constructed within the project site as a result of heaving and settlement of expansive soils.

Construction of the proposed roadways and future construction of the houses would require solid building surfaces. Expansive soils shrink and swell as a result of moisture changes, causing heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations.

The near surface soils in portions of the site consist of moderately to very highly expansive clay. Therefore, expansive soil on the project site could have a ***potentially significant*** impact on foundations, pavements, and other structure within the proposed project area.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce potential impacts related to foundation support/expansive soil to a *less-than-significant* level.

4.9-1 *Prior to approval of improvement plans, the project proponent shall conduct a design-level geotechnical study, which shall consider the recommendations in the existing geology report and additional recommendations as needed. The study shall specifically address whether expansive soils are present in the development area and include measures to address these soils where they occur. The recommendations from the geotechnical study shall be incorporated into the design of roadway and infrastructure improvements as well as foundation and building design for the review and approval of the City Engineer.*

4.9-2 Impacts related to weak or compressible clay.

Weak or compressible clays can consolidate under additional loads from engineered fill and buildings. These soils can cause settlement of pavements and structures founded on shallow foundations.

Much of the project is underlain by relatively weak or moderately to highly compressible clay and silt with interbedded strata of moderately organic clay (Kleinfelder, p. 4). The presence of moderately organic clay could increase the potential for foundation settlement. A majority of the settlement on the project site is likely to occur during earthwork operations. Therefore, weak or compressible soil could have a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

4.9-2 *Prior to the approval of improvement plans, and after the project grading plans are completed and the approximate building loads are determined, a qualified geotechnical engineer shall determine if remediation measures such as removing and surcharging the compressible materials are necessary to minimize future settlement to acceptable levels. The applicant shall provide the findings of the consolidation analysis to the City Engineering Division for review and approval.*

4.9-3 Loss of structural support due to potential liquefaction.

Liquefaction is a phenomenon during which granular material (silt or sand) is transformed from a solid state into a liquid state as a result of seismic activity. The primary factors determining liquefaction potential of a soil deposit are: (1) the level and duration of seismic ground motions; (2) the type and consistency of the soil; and (3) the depth to groundwater.

The geotechnical study performed on the proposed project site indicates that variable thicknesses of liquefiable material exist below a majority of the project. Up to four inches of settlement could occur due to liquefaction. In addition, portions of the site do not have enough capping material to prevent the liquefiable material from venting to the surface creating sand boils, ground cracking, and other ground surface disruption.

Structural support related to the proposed project could be adversely affected by potential liquefaction within the project site. Therefore, the development of the proposed Gilbert Property project could result in a ***potentially significant*** impact.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impacts related to liquefiable soils to a *less-than-significant* level.

4.9-3(a) Prior to issuance of a grading permit, the applicant/developer shall incorporate the recommendations of a design-level geotechnical report into the improvement plans. The following measures include, but are not limited to, the options available to reduce site liquefaction potential and/or adverse effects to structures located above potentially liquefiable soils. Once final grading plans are designed, the project's geotechnical engineers will need to determine the appropriate methods of mitigating the effects of liquefaction such as:

- *Remove and replace potentially liquefiable soils;*
- *Strengthen foundations (e.g., post-tensioned slab, reinforced mat or grid foundation, or other similar system) to resist excessive differential settlement associated with seismically-induced liquefaction;*
- *Support the proposed structures on an engineered fill pad in order to reduce differential settlement resulting from seismically-induced liquefaction and post-seismic pore pressure dissipation; and*
- *Densify potentially liquefiable soils with an in situ ground improvement technique such as deep dynamic compaction, vibro-compaction, vibro-replacement, compaction grouting, or other similar methods.*

4.9-3(b) If deep dynamic compaction is expected to be implemented as the method of densification or for any other reason, the following measures shall be implemented:

- *Geotechnical engineers for the Contra Costa Water District and the Group Member performing Deep Dynamic Compaction (the "DDC Member") shall mutually agree upon acceptable threshold limits for peak particle velocities measured during deep dynamic compaction at the toe of the Canal berm (the "Threshold Limits") along the DDC*

Member's Project. The sole purpose of the Threshold Limits is to attempt to avoid damage to the canal. The parties are not warranting that peak particle velocities at the toe of the Canal berm along the DDC Member's Project less than said Threshold Limits is safe or would not cause or contribute to Canal damage. In determining Threshold Limits, in addition to general safety and engineering factors, the District and DDC Member Engineers may also consider the types and amounts of comprehensive general liability insurance coverage provided by the DDC Member and its contractors or sub-contractors, as well as specific design, construction monitoring, and other measures that are developed to protect the Canal's Integrity, stability, and water quality as set forth above. (For example, if the District believes the amounts of comprehensive general liability insurance coverage provided by the DDC Member and its contractors or sub-contractors is insufficient, the Threshold Limits should be reduced accordingly to reflect this fact.) An independent licensed engineer selected by the District (with the concurrence of the DDC Member) shall, at the DDC Member's sole cost and expense, monitor measurements of peak particle velocities at the toe of the Canal berm along the DDC Member's Project during the period that Deep Dynamic Compaction is being performed, and shall submit to the District logs reflecting such measurements on a daily basis during such period.

- *To help ensure that the threshold limits are not exceeded, the DDC Member shall commence deep dynamic compaction on those portions of the project site located farthest from the Canal, and thereafter shall proceed with Deep Dynamic Compaction from those portions of the Project toward the Canal. That is, the DDC Member shall always conduct Deep Dynamic Compaction on this Project in a manner that the progression is in a direction toward the canal.*

- *If the threshold limits are exceeded while deep dynamic compaction is being performed, then the DDC Member shall immediately cease performing deep dynamic compaction within its Project and promptly notify the District. Deep dynamic compaction shall not resume unless and until (i) measures are developed and implemented by the DDC Member to ensure that the threshold limits are not exceeded, and (ii) the DDC Member notifies the District in writing of such measures.*

4.9-4 Increased soil erosion, wind and water erosion, and siltation of local drainage during and after construction from excavation and grading activities.

During construction within the proposed project area, topsoil would be moved and graded. The removal and grading of topsoil would lead to potential erosion of the project site soils because disturbed soil would not have as much connectivity to the

ground as undisturbed soil. The disturbed soils are more likely to undergo erosion from a variety of sources, such as wind and water. Construction activities involve water, which may further erode the topsoil as the water moves across the ground, or precipitation may lead to soil erosion on the project site. Therefore, the impact would be considered ***potentially significant.***

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

4.9-4 Prior to issuance of a grading permit, the project applicant shall submit, for the review and approval of the City Engineer, an erosion control plan that utilizes standard construction practices to limit the erosion effects during construction of the proposed project. Measures could include, but are not limited to:

- *Hydro-seeding;*
- *Placement of erosion control measures within drainageways and ahead of drop inlets;*
- *The temporary lining (during construction activities) of drop inlets with "filter fabric" (a specific type of geotextile fabric);*
- *The placement of straw wattles along slope contours;*
- *Directing subcontractors to a single designation "wash-out" location (as opposed to allowing them to wash-out in any location they desire);*
- *The use of siltation fences; and*
- *The use of sediment basins and dust palliatives.*

4.9-5 Grading and import of fill.

Some parts of the project site would require several feet of fill materials (*Geotechnical Investigation: Gilbert Property Development*, p. 1). The placement of fill on the site could increase erosion and sediments into the stormwater system. Therefore, the import of fill material would constitute a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

4.9-5 Implement Mitigation Measure 4.9-4.

Cumulative Impacts and Mitigation Measures

The continuing buildout of developments in the City of Oakley and surrounding areas would be expected to increase the need for surface grading and excavation and, consequently, increase the

potential for impacts related to soil erosion, unforeseen hazards, and exposure of people and property to earthquakes.

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.9-6 In combination with existing and future developments, increased potential impacts related to geological impacts and hazards.

The proposed project would increase the number of people and structures that could be exposed to potential effects related to seismic hazards. Development of the proposed project would also increase the number of structures that could be subject to the effects of shallow depth to rock or expansive soils, and site preparation would result in temporary and permanent topographic changes that could affect erosion rates or patterns. However, potentially adverse environmental effects associated with seismic hazards, as well as those associated with geologic or soils constraints, topographic alteration, and erosion, are usually site-specific and generally would not combine with similar effects that could occur with other projects in Oakley. Furthermore, all projects would be required to comply with the UBC and other applicable safety regulations. Consequently, the proposed project would generally not be affected by, nor would the project affect, other development approved by the City of Oakley. Therefore, the impact would be considered ***less-than-significant***.

Mitigation Measure(s)
None required.

Endnotes

[1] Stevens, Ferrone, & Bailey Engineering Company Inc. *Geotechnical Investigation: Gilbert Property Residential Development.* August 30, 2004.
[2] Kleinfelder. *Geology report for the Dutch Slough Properties Draft EIR*. November 18, 2005.
[3] Soil Survey of Contra Costa County (1977).

4.10 MINERAL RESOURCES

4.10 MINERAL RESOURCES

INTRODUCTION

The Mineral Resources section of the EIR describes the mineral characteristics of the project site and evaluates the extent to which implementation of the proposed project could affect the availability of locally and regionally valuable mineral resources. Information sources for this evaluation include the *Phase I Environmental Site Assessment and Limited Soil Quality Evaluation*[1], *Agreement Regarding Restrictions on Surface Entry and Plugging and Abandonment and Joint Escrow Instructions*[2] *City of Oakley 2020 General Plan*[3], the *City of Oakley General Plan EIR*[4], *City of Brentwood General Plan EIR*[5], and the *Contra Costa County General Plan 1995 – 2010*[6].

ENVIRONMENTAL SETTING

The following background setting information presents a description of the proposed project site and any known mineral resources located on-site.

Regional Mineral Resources

The site is located at the margin of the Great Valley Geomorphic Province and the Coast Ranges Geomorphic Province. The Great Valley Geomorphic Province consists of an elongated structural trough that has been filled with a sequence of sedimentary deposits ranging from Jurassic to recent in age. In the San Joaquin/Sacramento Delta, sedimentary bedrock is up to six miles in thickness (Atwater, 1982 qtd. in Kleinfelder, 2005). Geophysical evidence suggests that the Great Valley is underlain at depth with granitic rocks of the Sierra Nevada Province. The adjacent Coast Ranges Geomorphic Province is underlain at depth by Franciscan Assemblage rocks.

The San Joaquin/Sacramento Delta lies at the junction of the Sacramento and San Joaquin rivers, the two major waterways that drain the Central Valley. The Delta area currently consists of a braided pattern of brackish to freshwater tidally-influenced channels and sloughs encircling a series of low-lying islands.

Local Mineral Resources

The nearest mineral resources to the proposed project site remain within the Contra Costa County and consist of aggregate, oil and gas. Immediately to the south of the City of Oakley city limit are oil and gas fields. Approximately half the designated oil and gas field area resides in northwest Brentwood and the County. In addition to oil and gas, the City of Brentwood contains potential aggregate resources in the southern portion of the Brentwood planning area. Additional aggregate resources exist northwest of Mount Diablo near the City of Clayton.

Project Site Mineral Resources

The proposed 120-acre Gilbert Property project site is located in the City of Oakley, Contra Costa County, California (See Figure 3-1, Regional Location Map, and Figure 3-2, Project Location Map in Chapter 3 of this Draft EIR). The primary use of the Gilbert property is cattle grazing. Structures on the site include a dilapidated wooden and corrugated steel structure with an attached shed on a raised concrete foundation, a former water tower, a paved storage yard located on the northwest corner of the site, several abandoned vehicles, a former aboveground storage tank, and an abandoned residence located on the eastern portion of the site.

According to the Oakley General Plan, Figure 8-4, Hazardous Area Locations, the proposed project site contains two gas wells. Natural gas production well "Tract 8" 8-3, was drilled to a depth of approximately 7,700 feet in the north-central area of the Gilbert site in 1964. The "Tract 8" 8-3 well was abandoned in 1978 under a permit obtained from the Department of Oil and Gas (DOG). In 1964, gas well "Tract 8" 8-1 was drilled in the northeast area of the site to a depth of approximately 8,328 feet. This well was abandoned in 1966 under a permit obtained from the DOG.

REGULATORY CONTEXT

The following section is a brief summary of the regulatory context under which mineral resources are managed.

State Regulations

The primary state law concerning conservation and development of mineral resources is the California Surface Mining and Reclamation Act (SMARA) of 1975, as amended. SMARA is found in the California Public Resources Code (PRC), Division 2, Chapter 9, Section 2710, et. seq. SMARA was enacted in 1975 to limit new development in areas with significant mineral deposits and to prevent or minimize the negative impacts of surface mining to public health, property, and the environment. SMARA calls for the State Geologist to classify the lands within California based on mineral resource availability.

Local Regulations

Association of Bay Area Governments

The Association of Bay Area Governments (ABAG) has established regional goals and policies encompassing the Oakley area. Below is a sub-regional land use policy from the ABAG regional goals and policies (Policy 5):

> Pursue programs that identify and protect the availability of significant rock, sand, gravel and other mineral resource areas and which balance their use with ecological conservation objectives.

City of Oakley General Plan

Policy 8.2.11 in the Health and Safety Element (Flood Hazards subsection) of the Oakley General Plan states the following regarding mineral resources: "The pumping of substantial quantities of water, oil and gas in an area protected by levees is inconsistent with new major development approvals."

City of Oakley Zoning Code

Chapter 6, Section J of the Oakley Zoning Code regulates the following:

> drilling, redrilling, and recovery of oil, gas and other hydrocarbons, including injection wells, so that these activities may be conducted in a manner that: a) protects public health, safety and welfare; b) conforms with established codes and regulations; c) minimizes the potential impact to property and mineral rights owners; d) encourages well site consolidation; and e) protects the quality of the environment.

With regard to land uses proposed by the project, the Zoning Ordinance provides the following development regulations:

> 6-J-1.6(A)(1) Setbacks. All distances to and from any setback shall be measures from the nearest well. No well shall be drilled nor shall any storage tank and other production related structures be located within:
>
> a. Fifty feet of the right-of-way of any dedicated public street, highway, railroad or private street, or adopted specific plan line of any street or highway;
>
> b. One hundred and fifty feet of any occupied building including dwellings, except buildings incidental to the operation of the well.
>
> d. Fifty feet of park area that is open and accessible to the public.

Additionally, Section 6-J-1.7 and 6-J-1.6(A)(19) of the Oakley Zoning Ordinance provide regulations for proper oil and gas well abandonment processes.

IMPACTS AND MITIGATION MEASURES

This section presents the standards of significance for any potential impacts regarding mineral resources and the methods by which the potential project impacts are assessed, and identifies impacts associated with implementation of the proposed project as well as mitigation to reduce these impacts.

Standards of Significance

The following thresholds of significance related to Mineral Resources are derived from the criteria listed in Appendix G of the State CEQA Guidelines.

Impacts resulting from the project would be considered significant if the project would:

- 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.

Method of Analysis

The analysis in this section uses information obtained from the sources listed in the introduction of this chapter and compares the existing mineral resources and the effects of the proposed project on these resources. Conclusions are drawn using the significance criteria listed above and, if applicable, mitigation measures are prescribed.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.10-1 Loss of availability of a known State, regional, and/or locally valuable mineral resource, as identified in the Oakley General Plan.

The Oakley General Plan identifies two oil and gas wells on the proposed project site. According to documentation from the State Department of Oil and Gas, the Gilbert property on-site wells were abandoned in 1966 and 1978s; thus, all the gas wells on the proposed project site have been properly abandoned. In addition, the General Plan designates the wells as hazards not mineral resources. Moreover, mineral resources are not designated anywhere within the planning area of the Oakley General Plan.

The proposed project would result in the construction of residential units and other amenities on the site. The placement of impervious surfaces over oil and gas wells in combination with the incompatibility of residential use with mineral extraction use would preclude further oil and gas exploration and extraction on the proposed project site. In addition, the owners of the right to develop the mineral resources below the proposed project site, Tonka Energy, Inc. (TEI), have entered into an agreement restricting surface access to the mineral resources. However, access could be obtained from designated drill sites to the north of the proposed project. Thus, although the proposed project would result in the construction of residential units and other amenities on the site, TEI could gain access to the mineral resources below the project site from the designated drilling sites to the north. Therefore, because all the oil and gas wells on-site are abandoned with access to the resource obtainable, implementation of the proposed project would not result in a loss of the mineral resource, resulting in a ***less-than significant*** impact.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.10-2 Long-term loss of mineral resource availability from the proposed project in combination with existing and future developments in the Oakley area.

The proposed project would restrict access to two abandoned gas wells as discussed in Impact Statement 4.10-1, above. However, north and northeast of the proposed project site are active gas and oil wells that would be abandoned upon buildout of the General Plan (See Figure 2-2 and Figure 8-4 of the Oakley General Plan). The area north of the proposed project site has a Delta Recreational land use designation and is planned for wetland restoration by Cal-Fed, necessitating the abandonment of the wells in the area. The area to the northeast is designated for residential uses, which would require well abandonment in that area. Because buildout of the General Plan would require abandonment of the wells to the north and northeast, access to the mineral resources through the existing well locations in the project vicinity would be restricted.

However, the gas and oil resources would remain. The designated recreational uses to the north would contain mostly open space with buildout of the General Plan. At a future date, access to the gas and oil resources in the area could be potentially re-established with the boring of new wells. Therefore, because the gas and oil resources would not be destroyed and future access would continue to be available in the proposed project vicinity, a ***less-than-significant*** cumulative impact would occur.

Mitigation Measure(s)
None required.

Endnotes

[1] Lowney Associates, *Phase I Environmental Site Assessment and Limited Soil Quality Evaluation*. September 3, 2004.
[2] Emerson, Gilbert, Burroughs, and Tonka Energy, Inc., *Agreement Regarding Restrictions on Surface Entry and Plugging and Abandonment and Joint Escrow Instruction*, September 2003.
[3] City of Oakley. *City of Oakley 2020 General Plan*. December 2002.
[4] City of Oakley. *City of Oakley 2020 General Plan Draft Environmental Impact Report*. September 2002.
[5] City of Brentwood. City of Brentwood General Plan Update EIR. June 25, 2001.
[6] Contra Costa County. *Contra Costa County General Plan 1995 – 2010*. July 1996.

4.11 HISTORICAL AND CULTURAL RESOURCES

4.11 HISTORICAL AND CULTURAL RESOURCES

INTRODUCTION

This section discusses the impacts the Gilbert Property project would have on existing cultural resources in the area. The cultural resources analysis evaluates known prehistoric and historic uses in the project area, and the potential for existence of currently unknown heritage sites. Information used in this section is derived from the *City of Oakley General Plan (2002)*[1], the *City of Oakley General Plan Draft Environmental Impact Report* (2002)[2], and the *Archaeological Resources Assessment* for the Gilbert (2004)[3] property prepared by Basin Research Associates (See Appendix L of this Draft EIR).

EXISTING SETTING

This section of the EIR describes cultural (prehistoric and ethnographic) and historical resources known to be located on the project site. Cultural resources are those sites and artifacts associated with indigenous, non-Euroamerican population, generally prior to contact with people of European descent. Historical resources include structures, features, artifacts and sites that date from Euroamerican settlement of the region.

Prehistoric Resources

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

The Oakley area appears to have been favored by Native Americans for both occupation, and hunting and collecting activities. The area would have provided a favorable environment during the prehistoric period with riparian and inland resources readily available, and the bayshore in relative close proximity. Native American occupation and use of the Oakley area appears to extend over 5,000 to 7,000 years and may have been longer. Archaeological information suggests an increase in the prehistoric population over time with an increasing focus on permanent settlements with large populations in later periods. This change from hunter-collectors to an increased sedentary lifestyle is due to more efficient resource procurement but with a focus on staple food exploitation, the increased ability to store food at village locations, and the development of increasingly complex social and political systems, including long-distance trade networks.

Ethnographic Resources

The proposed project appears to have been within the Julpun and/or Volvon tribelet area of the Bay Miwok or Eastern Miwok. The Julpun territory appears to have extended along the Old River of the San Joaquin River and lower Marsh Creek, while the Volvon held Mount Diablo and upper Marsh Creek drainage on the eastern side of Mount Diablo (Milliken 1995:229, Map 5, 246, 259). The Julpun and/or Volvon may have been subject to some Northern Yokuts influence, a group clustered along the San Joaquin River and its main tributaries. Chupcan is the closest known ethnographic village and the tribelet center appears to have been located at present-day Antioch (Kroeber 1925; Davis 1961; Bennyhoff 1977; Levy 1978; Wallace 1978; Elsasser 1986; qtd. in the Archaeological Resources Assessments for the properties by Basin Research Associates).

The Bay Miwok were the first of the Eastern Miwok to be missionized and the largest group of Julpun went to Mission San Jose in present-day Fremont. Julpunes is identified as a Christian village on an 1824 topographic map of the Mission San Jose. This village is shown on an island on the north bank of the San Joaquin River in the 1824 map, suggesting the Julpun moved as a result of missionization (Anonymous 1824 in Bennyhoff 1977:144, 166-167, Maps 4a-b; Levy 1978:401; qtd. in the Archaeological Resources Assessments for the properties by Basin Research Associates).

In 1838, Dr. John Marsh, the namesake of Marsh Creek, found a few Native Americans when he settled on his Rancho Los Meganos (the sand-banks or sand dunes), a rancho located south of the project. Native Americans appear to have returned to the area at the end of 1836 after the secularization of Mission San Jose. Marsh was noted for his good relations with local Native Americans, whom he referred to as the Pulpunes and placed his adobe dwelling on the bank opposite their rancheria (Hoover et al. 1966; Bennyhoff 1977; Milliken 1995; qtd. in the Archaeological Resources Assessments for the properties by Basin Research Associates).

Extensive ethnographic data for the San Francisco Bay Region are lacking, and the aboriginal way of life apparently disappeared by approximately 1810 due to introduced diseases, a declining birthrate, the cataclysmic impact of the mission system, and the later secularization of the missions by the Mexican government (Levy 1978).

Native American villages or known trails are not situated within or near the project area.

History and Settlement of Oakley

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

Hispanic Period

As identified in the Cultural Resources section of this element, the first settlers in the west delta were the Bay Miwoks, who occupied the region between 1100 and 1770 A.D. Spanish incursions into the Oakley area began in the 1770s. Between 1769 and 1776, a number of Spanish expeditions passed through the San Francisco Bay region, including those led by Portola, Fages, Fages and Crespi, Anza, Rivera, and Moraga. Even though the routes of the early explorers cannot be determined with total accuracy, none are known to have traveled near the project area (Schenck 1926; Cook 1957; Beck and Haase 1974:#17; Milliken 1995:33, Map 3; qtd. in the Archaeological Resources Assessments for the properties by Basin Research Associates). The closest known historic trail corridor, the 1776 Juan Bautista de Anza National Historic Trail, passed just west and south of the Emerson property (USNPS 1995). The Spanish philosophy of government in northwestern New Spain was directed at the founding of presidios, missions, and secular towns with the land held by the Crown (1769 to 1821), while the later Mexican policy (1822 to 1848) stressed individual ownership of the land. After the secularization of the missions was declared by Mexico in 1833, vast tracts of the mission lands were granted to individual citizens (Hart 1987 qtd. in the Archaeological Resources Assessments for the properties by Basin Research Associates).

During the Mexican Period (1822 to 1846) and into the American Period, the project was situated in ungranted/patented lands north of the Rancho Los Meganos. Governor Jose Castro granted the rancho to Jose Noriega in October 1835. He sold it to John Marsh in 1837. Marsh moved to the rancho in April 1838 and was murdered in 1856 by three Mexican vaqueros. His daughter patented the rancho in August 1867.

Hispanic period features, dwellings, roads, corrals, etc. do not appear to have been present within or near the project (Hendry and Bowman 1940:484-486; Collier 1983; qtd. in the Archaeological Resources Assessments for the properties by Basin Research Associates).

American Period

In the mid-19th century, most of the rancho and pueblo lands in California were subdivided as the result of population growth and the American takeover. This American ascendancy was the result of the confirmation of property titles throughout California, prior to which the transfer of real estate had been extremely risky. The initial explosion in population was associated with the Gold Rush (1848), followed later by the construction of the transcontinental railroad (1869). Still later, the development of the refrigerator railroad car (ca. 1880s), used for the transport of agricultural produce to distant markets, had a major impact on population growth (Hart 1987 qtd. in the Archaeological Resources Assessments for the properties by Basin Research Associates).

American settler John Marsh successfully farmed the land in the 1830s, bringing other American immigrants to the region. By 1862, the population of the Oakley region was large enough to support a school. A store on the Dutch Slough brought vessels into the canal for commerce. In the 1860s, farmers created swampland districts through reclamation of delta lands for new farming opportunities. Construction of the railroad along the City's southern boundary in 1879

introduced a shipping alternative for farmers. The town of Oakley was founded in 1897, when the transcontinental railroad arrived and agriculture shifted from grains to orchard crops.

Contra Costa County is among the 27 initial California counties. Growth in the county has been linked with agriculture, a coal-mining boom from the 1850s to 1880s, and the development of transportation networks to service both industry and agriculture with market links. The towns of Crockett, Port Costa, Vallejo Junction, Martinez, former Bay Point/Port Chicago, Bay Point, Pittsburg, Antioch, and later Oakley were important focal points for services and the transport of coal, fish, lumber, and wheat to San Francisco and Sacramento and beyond by water and, later, by rail.

Growth was slow in the early 1900s, with expanding agricultural industry and local services. Civic institutions and activities expanded after WWI, followed by the depression. Floods and levee breaks altered the land area, resulting in the expansion of agriculture and tourism for recreation in the 1930s. Opportunities and inexpensive land brought about a population boom in the 1970s. The increase in population attracted industrial and commercial uses to the community. The population quadrupled in the 1980s to 16,000 persons. Discontent with the way the county government was handling growth in Oakley led to the founding of an official advisory council in 1983 and eventual incorporation in 1999.

The Portuguese in the area began observing the Holy Ghost Festival (which involves a parade, a feast and a religious service) in 1926 and built the Flor Do Oakley Hall in 1928. Oakley pioneers John Augusta and Joseph Augusta were both instrumental in the promotion of this annual event. John Augusta moved to Oakley in 1900 and purchased the first business lot in town. His blacksmith shop quickly became a favorite gathering place for early settlers. The shop was lost in the Oakley Fire of 1924, which also burnt most of downtown, including the Oakley Hotel. Joseph Augusta, John Augusta's brother, moved to Oakley in 1913 and was a lumberyard manager. He is credited with fighting the County for much needed improvements in Oakley, like curbs and gutters, and he also was instrumental in the formation of the Oakley Sanitary District.

Project Study Area

The project is located in the eastern part of present-day Oakley. Prior to reclamation, Marsh's Landing at the edge of the extensive tule area opposite Sherman Island and Iron House/Babbe's Landing (both dating to the 1850s) along Dutch Slough were the most important features in the study area.

By 1873 the San Pablo and Tulare Railroad ran through the study area, skirting the northeastern portion of Rancho Los Meganos. By 1878, the San Pablo and Tulare Railroad was complete and ran south of the future Oakley vicinity, from Tracy through Byron, Brentwood, Antioch, Pittsburg/Cornwall, and Bay Point and on to Martinez to connect with the Central Pacific Railroad. In 1899, a parallel line was constructed between Seal Bluff and Antioch by the San Francisco & San Joaquin Valley Railroad Company. This line was conveyed to the Santa Fe Railroad Company in 1901, which was an 1897 reorganization of the Atchison Topeka & Santa Fe Railway Company (AT&SF).

By the late 19th century, Oakley was located on the south side of Atchison Topeka and Santa Fe (AT&SF) railroad line 1.5 miles east and slightly south of the Emerson property. The town is now situated about six miles east of Antioch and about 1.5 miles northwest of Knightsen (on the Atchison Topeka & Santa Fe Railway Company rail line). Oakley was named for the abundant native oak trees by R.C. Marsh and was noted for apricots, almonds and grapes. R.C. Marsh, farmer and first postmaster of the Oakley post office, which opened October 7, 1878, negotiated the right-of-way across the northwest quarter of Section 25. The right-of-way included a half-mile of sidetrack and a small station room.

The land for Oakley was provided by James O'Hara, who had purchased government-grant land in 1887. The town was founded in 1897, initially subdivided by R.C. Marsh with O'Hara Avenue as the main north-south street followed to the east to the tracks by Second, Third, and Fifth streets. East-west streets from Main Street (present-day State Route 4) south consisted of Acme, Ruby, Star, and Home streets. By 1902 Oakley had a general merchandise store, blacksmith shop, a post office, and a “pigeon industry.” The first hotel opened in 1908 by Mr. and Mrs. S. Dal Porto, who also built a town hall. In 1910 A.G. Ramos opened a store specializing in harnesses, whips, lap robes, and blankets and in 1911 M.A. Ferrell opened another grocery store and also sold feed and hardware.

Fruit and vegetable wholesalers built packing sheds along the north side of the half-mile long railroad spur to ship almonds, celery, asparagus and wine grapes to the eastern markets. Reportedly, the field workers in the area were "mostly Oriental" (Chinese and Japanese) but also included Hindus and later, Mexicans provided labor (Smith and Elliot 1879:map; Collier 1983:141-142; Emanuels 1986:209-211; Patera 1991:154; Fickewirth 1992:13, 129, 137; Metcalfe 1994 [1902]: not paginated; Walker 1994:Map CA-13; Gudde 1998:266; Oakley 2002b:EIR, 3-2; qtd. in the Archaeological Resources Assessments for the properties by Basin Research Associates).

Historical Resources In/Near the Project Site

Two historic-era historical resources are located adjacent to the project area: Iron House School, and part of the Contra Costa Canal. The study did not locate any other local, state or federal historically or architecturally significant structures, landmarks, or points of interest have been identified within or adjacent to the project area. One historic-era cultural resource, Iron House landing (later known as Babbe’s Landing), is located just north of the project.

Iron House School-Built 1896

Originally, Iron House School was located at the northwest corner of the intersection of Cypress Road and Sellers Avenue on the neighboring Emerson property (e.g., USGS 1916 Bryon [surveyed 1911]). The School has been moved in recent years to the northeast corner of the Emerson property. By 1882, the Iron House School District was one of 39 in Contra Costa County (Slocum 1882:207). The school is a single-story wood frame building with shiplap siding capped with a double-pitched roof. In 1976, a pipeline was proposed about 150 yards from the school, which had been modified and modernized for use as a private residence and dairy (Busby 1976).

The former school is on the *California History Plan* (CAL/OHP 1973:55) and *California Inventory of Historic Resources* under the theme of Social/Educational (CAL/OHP 1976:209, 229), is listed on the *Revised Preliminary Historic Resources Inventory* of Contra Costa County as a "Structure of Historical Significance" (CCCo/CDD 1989:East Contra Costa County area), and is on the *Contra Costa County Map of Historical Points of Interest* (Contra Costa County Historical Society (CCCoHS) 1994:#148). Iron House School is listed on the *Historic Properties Directory* (HPD) on Cypress Road in Brentwood [sic] as a "code 7," not evaluated for inclusion on the National Register of Historic Places or the California Register of Historical Resources or needing reevaluation. The HPD assigns Primary Number P-07-000903 to the school.

Contra Costa Canal

The Contra Costa Canal, the first canal built as part of the Central Valley Project, is located adjacent to the northern boundary of the proposed project area. The United States Bureau of Reclamation opened an office in Antioch in 1936. Construction on the canal began in late 1937 and was completed in 1948 (after work was suspended during World War II). The 46-mile long Contra Costa Canal has been evaluated as eligible for inclusion on the National Register of Historic Places at the state and local level under Criterion A for the canal's association with events that have made a significant contribution to the broad patterns of history. In addition, the Contra Costa Water District (CCWD) plans to convert up to approximately 21,000 feet of the Contra Costa Canal adjacent to the proposed project to buried pipeline. The CCWD has completed a CEQA review of the Contra Costa Canal Encasement Project in the form of an Initial Study/Mitigated Negative Declaration (IS/MND).

Iron House Landing

One historic-era cultural resource, Iron House Landing (later known as Babbe's Landing), is described as located at the foot of Sellers Avenue on Dutch Slough (CAL/OHP 1976:228). Iron House Landing, as mapped on the 1862 *Government Land Office* (GLO) survey plat for Township 2 North, Range 3 East, is north of the project site in the N 1/2 of the NE 1/4 of Section 19. The landing dates to the 1850s and appears on a number of historic maps. The name "Iron House" is reportedly associated with a store on the landing owned by Larrabee and Henderson who replaced their make-shift pole and tule structure with a house built of sheet iron. The Iron House was later bought by the Halstead family (Hohlmayer 1991:239-240 qtd. in the Archaeological Resources Assessments for the properties by Basin Research Associates). The landing was on a channel cut to high land and was the central point for horse and hay transport to San Francisco in the Iron House and Eden Plains districts. The landing also included the store of Martin Hamburg until he moved to Antioch (Smith and Elliott 1879:30, ff22 [illustrated]; Slocum 1882:484; Baker 1985:2-4/S-7639 qtd. in the Archaeological Resources Assessments for the properties by Basin Research Associates). Research conducted by Baker at the Bancroft Library, University of California, Berkeley located some material on Frederick Babbe, but not for Martin Hamburg at the Landing site. Baker posits, given the lack of data, that the Martin Hamburg store at the landing may be a mistake.

Babbe's Landing [*sic*] is listed on the *California History Plan* under the theme of Exploration/Settlement (CAL/OHP 1973:53), *California Inventory of Historic Resources* under the theme of Economic/Industrial (CAL/OHP 1976:68, 228), and the *Revised Preliminary Historic Resources Inventory* of Contra Costa County (CCC/CDD 1989:East Contra Costa County area) as a Site of Historic Event.

Farm Structures

By the early 1930s the number of farm structures within the present City limits might have been 500. Due to the small-scale nature of most of local agriculture in the 20th century, the buildings were generally small and simple. Few farmsteads containing a house, auxiliary buildings, and surrounding open land, remain today. Exceptions are the Emerson and former Burroughs dairies in the northeast corner of the City. Individual farm buildings, not always houses, are more common. Several trends have diminished the number of farm structures: the abandonment of ranching, the replacement of old houses with newer ones, and the conversion of land from farming to residential tracts.

REGULATORY CONTEXT

Federal, State and local governments have developed laws and regulations designed to protect significant cultural resources that could be affected by actions that they undertake or regulate. The National Environmental Policy Act (NEPA), National History Preservation Act (NHPA) and California Environmental Quality Act (CEQA) are the basic federal and State laws governing preservation of historic and archaeological resources of national, regional, State and local significance.

Federal Regulations

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

National Historic Preservation Act (NHPA)

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

National Register of Historic Places

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

State Regulations

Historical resources are recognized as part of the environment under CEQA statutes and guidelines (Public Resources Code sections 21001(b), 21083.2 and 21084.1; and section 15064.5 of the CEQA Guidelines). CEQA requires lead agencies to carefully consider the potential effects of a project on historical resources. Properties of local significance, including those identified in a local historical resource inventory, are presumed to be significant for the purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC sections 5024.1, 14 CCR section 4850).

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

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

Integrity is the authenticity of the historical resource's physical identity as evidenced by the survival of characteristics that existed during the resource's period of significance. The property must meet at least one of the criteria as described above and retain enough of its historic character or appearance to be recognizable as an historical resource and also to convey the

reasons for its significance. Integrity is evaluated with regard to the aspects of location, design, setting, materials, workmanship, feeling, and association.

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

State Office of Historic Preservation

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

Local Regulations

City of Oakley General Plan

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

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

Cultural Resources

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

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

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

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

Historical Resources

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

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

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

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

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

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

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

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

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

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

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

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Archaeological Resources

A project could have a significant effect on the environment if it would cause a substantial adverse change in the significance of an archaeological resource or disturb any human remains. Pursuant to Section 15064.5 of the CEQA *Guidelines,* archaeological resources not otherwise determined to be historical resources may be significant if they are unique. Pursuant to Public Resources Code (PRC) Section 21083.2, a unique archaeological resource is defined as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, a high probability exists that it meets one of the following criteria:

- Contains information needed to answer important scientific questions and a demonstrable public interest exists 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; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

According to Section 15064.5 of the CEQA *Guidelines*, all human remains are significant.

A non-unique archaeological resource means an archaeological artifact, object, or site that does not meet the above criteria. Non-unique archaeological resources do not receive further consideration under CEQA.

Historical Resources

Section 15065 of the CEQA *Guidelines* mandates a finding of significance if a project would eliminate important examples of major periods of California history or pre-history.

In addition, pursuant to Section 15064.5 of the CEQA *Guidelines*, an historical resource (including both built environment and prehistoric archaeological resources) shall be considered by the lead agency to be historically significant if it is listed on the California Register of Historical Resources (CRHR) or has been determined to be eligible for listing by the State Historical Resources Commission. An historical resource may also be considered significant if the lead agency determines, based on substantial evidence, that the resource meets the criteria for inclusion in the CRHR. Any resource that is listed on or considered eligible for inclusion on the National Register of Historic Places is automatically considered eligible for the CRHR.

Under the National Historic Preservation Act (NHPA), the quality of significance in American history, architecture, archaeology and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, handiwork, feeling and association and:

1. That are associated with events that have made a significant contribution to the broad patterns of our history;
2. That are associated with the lives of persons significant in our past;
3. That embody the distinctive characteristics of a type, period, or method of construction, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
4. That have yielded or may be likely to yield, information important in prehistory or history.

The National Register of Historic Places requires consideration of significance of any structure over 45 years old.

Method of Analysis

Determinations of impacts to cultural resources were based on information from the *Oakley General Plan: Environmental Setting and Background*, the *City of Oakley General Plan*, and the *Cultural and Archaeological Assessment* prepared by Basin Research Associates for the proposed project.

A prehistoric and historic site records and literature search was completed by the California Historical Resources Information System, Northwest Information Center, California State University Sonoma, Rohnert Park (CHRIS/NWIC File No. 04-04, and 04-808). Reference material from the Bancroft Library, University of California at Berkeley and Basin Research Associates, San Leandro, was also consulted.

A *Phase 1 Environmental Site Assessment* and land *Soil Quality Evaluation* was also conducted for the project (St. Thomas Construction 2004) and reviewed by Basin Research Associates. The

Phase 1 Environmental Site Assessment provides the results of a historical review, interview, regulatory records results, and site visit.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.11-1 Substantial adverse change in the significance of a historical resource.

Two historic-era historical resources are located adjacent to the proposed project: Iron House School at the northwest corner of Sellers Avenue and Cypress Road, and part of the Contra Costa Canal. The study did not identify any other local, State, or federal historically or architecturally significant structures, landmarks, or points of interest within or adjacent to the project area. One historic-era resource, Iron House Landing (later known as Babbe's Landing), is located just north of the project. However, the proposed project would have no impact on either Iron House Landing or Iron House School.

As stated under the Existing Setting section of this chapter, the 46-mile long Contra Costa Canal has been evaluated as eligible for inclusion on the National Register of Historic Places (NRHP), and the portion of the canal adjacent to the proposed project is planned for encasement. Because the Contra Costa Canal has been determined eligible for listing in the NRHP, the canal is automatically determined eligible for listing in the California Register of Historic Resources. Therefore, the Contra Costa Canal qualifies as a historical resource under CEQA. However, the Contra Costa Canal Encasement Project IS/MND states in the Cultural Resources section, page 3-54, that the canal's significance as a cultural resource lies in the association with the Central Valley Project and the economic development of the eastern Contra Costa Canal. The 21,000-foot segment of unlined canal to be replaced by pipeline is only a small segment of the primary structure of the Contra Costa Canal. This segment is not central to the canal's significance as a whole, but rather is among the many features along the canal that contribute to the historic significance. Thus, the IS/MND for the canal encasement project concluded that the impact would be less-than-significant, and the rest of the canal would retain status as historical. Therefore, although the proposed project would not impact the adjacent canal, the segment adjacent to the proposed project would cease to be a historical resource after implementation of the Contra Costa Canal Encasement Project.

The Oakley General Plan EIR addresses the loss of cultural and historical resources, stating that the Oakley Planning Area and the surrounding areas contain possible archaeological resources that would be potentially affected from new development associated with buildout of the General Plan, which would include the proposed project. Urbanization of Oakley and the surrounding areas could result in the continued loss of historic structures and remove sources that have value both as a scientific resource and as an integral part of establishing community identity. However, the General Plan EIR addressed the impact of General Plan buildout on cultural and historical resources and concluded that with implementation of the General Plan goals and policies, a less-than-significant impact would result.

Therefore, because the proposed project would not be expected to result in an adverse impact to the historic resources identified in the vicinity of the proposed project site, and because historic sites were not identified within the proposed project site, the development of the proposed project would result in a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

4.11-2 Unearthing of previously unknown archaeological resources as a result of project grading.

Development allowed by the proposed project, such as road improvements, utility corridors, and excavation associated with residential, or business development could result in the destruction or damage of unknown archaeological, or paleontological resources. The Archaeological Resource Assessment of the project area stated that based on a review of pertinent records, maps and other documents, and a field inventory, the proposed project can proceed as planned in regard to prehistoric and historic archaeological resources.

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

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

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

Although studies suggest that the project area does not contain a large number of prehistoric sites or artifacts, archaeological sensitivity within the project area cannot be

ruled out. In addition, Oakley General Plan Policy 6.4.1 requires the preservation of areas that have been identified as having important archaeological or paleontological significance. Therefore, because there is a potential for archaeological resources to exist virtually anywhere, even in areas thought to be of relatively low sensitivity, a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce any potential risks to archaeological resources to a *less-than-significant* level.

4.11-2(a) *During construction, if any earth-moving activities uncover artifacts, exotic rock, or unusual amounts of bone or shell, work shall be halted in the immediate area of the find and shall not be resumed until after a qualified archaeologist has inspected and evaluated the deposit and determined the appropriate means of curation. The appropriate mitigation measures may include as little as recording the resource with the California Archaeological Inventory database or as much as excavation, recordation, and preservation of the sites that have outstanding cultural or historic significance.*

4.11-2(b) *During construction, if bone is uncovered that may be human, the Contra Costa County Coroner and the Native American Heritage Commission in Sacramento shall be notified. Should human remains be found, the Coroner's office shall be immediately contacted and all work halted until final disposition by the Coroner. Should the remains be determined to be of Native American descent, the Native American Heritage Commission shall be consulted to determine the appropriate disposition of such remains.*

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.11-3 In combination with other known and foreseeable projects in the Oakley area, the project's contribution to cumulative cultural resources impacts.

Buildout of approved and planned uses such as the Gilbert Property project and other projects within the City have the potential to uncover previously unknown resource sites. Each site is a unique contributor to the overall scientific understanding of a region's pre-history. Evaluation of cultural finds and resources within their original context is a critical component of their value. Disturbance, movement, and destruction of such resources would remove or preclude the analysis of the resource within the resource's origin and therefore adversely affect the understanding of the development of human cultural history. Increased population and intensified land use patterns associated with cumulative growth could also increase the potential for vandalism and/or inadvertent

destruction of such resources. Consequently, the Oakley 2020 General Plan EIR found that cumulative development would create a significant impact to cultural resources. However, General Plan EIR found that the adoption of the Policies and Programs involved with the General Plan would reduce cumulative impacts related to cultural resources to a less-than-significant level (See page 5-13 of the 2020 General Plan EIR.)Therefore, cumulative impacts from implementation of the proposed project would be considered to be ***potentially significant***.

Mitigation Measure9s)
Implementation of the following mitigation measures would reduce any potential risks to archaeological resources to a *less-than-significant* level.

4.11-3 Implement Mitigation Measure 4.11-2(a) and (b).

Endnotes

[1] City of Oakley. *Oakley 2020 General Plan*. August 30, 2002.
[2] City of Oakley. *Oakley 2020 General Plan Draft Environmental Impact Report*. September, 2002.
[3] Basin Research Associates. *Archaeological Resources Assessment for the Gilbert Property.* 2004.

4.12 HYDROLOGY, WATER SUPPLY AND WATER QUALITY

4.12 HYDROLOGY, WATER SUPPLY AND WATER QUALITY

INTRODUCTION

This section of the EIR describes existing drainage and water resources for the project site and the region, and evaluates potential impacts of the project with respect to flooding, surface water resources, groundwater resources, and water supply. The hydrology and water quality impact analysis is based on information drawn from the *Oakley 2020 General Plan*[1] and its associated EIR[2], the *Oakley 2020 General Plan Background Report*[3], the Diablo Water District Urban Water Management Plan Final Report (December 2005) as well as the Stormwater Management Plan (Appendix M) for the Gilbert Property prepared by Balance Hydrologics[4], the Groundwater Study (Appendix N) prepared by ENGEO, Inc.[5], and the Draft Water Supply Assessment (Appendix O) for the Gilbert Property prepared by Diablo Water District[6]. (See Appendices M, N and O of this Draft EIR.)

ENVIRONMENTAL SETTING

The following setting information provides an overview of the existing conditions of the water supply, drainage systems, water quality, as well as stormwater runoff in the Gilbert Property project site and drainage area.

Drainage Area

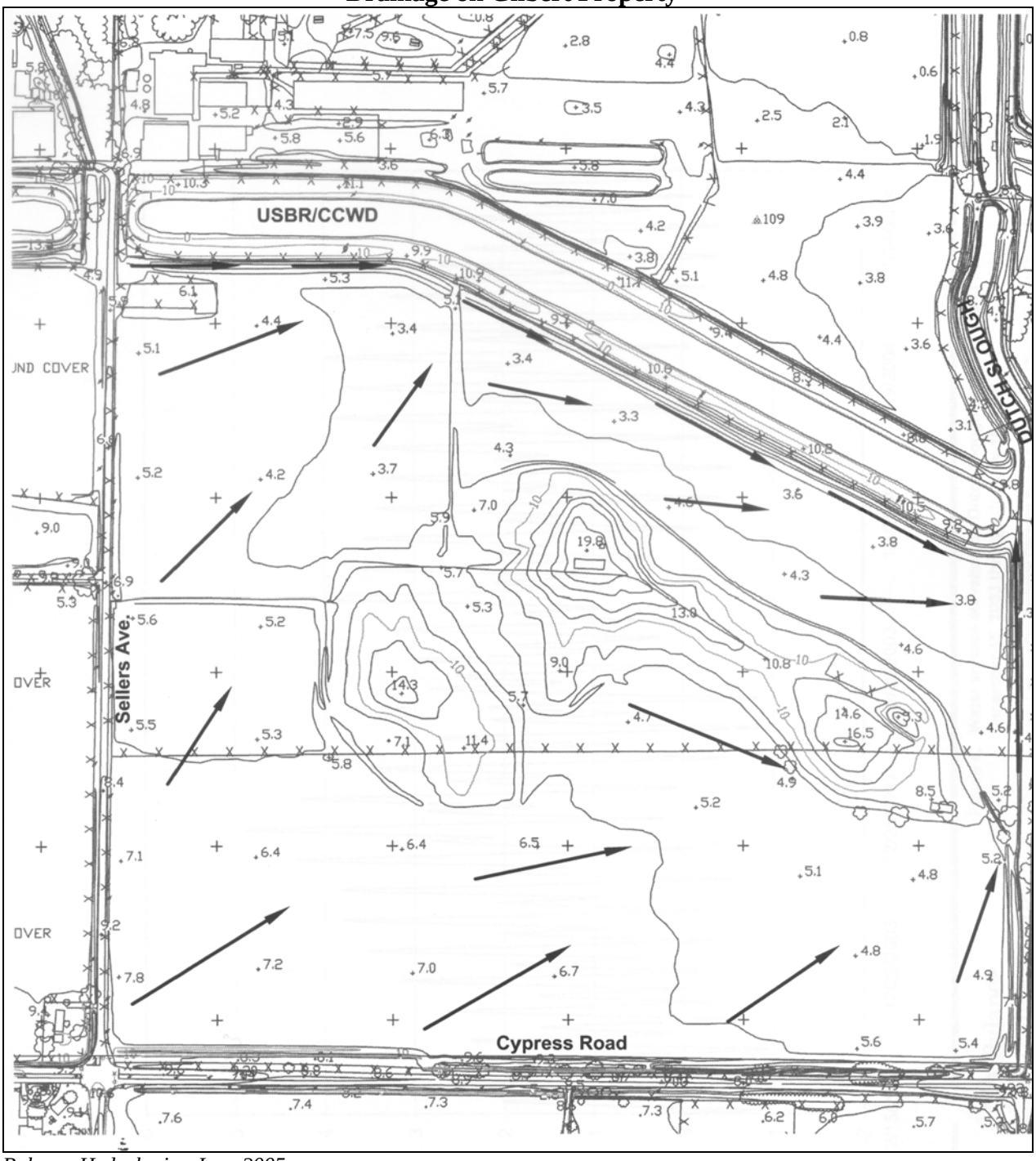
For the purposes of this analysis, this section identifies the Gilbert Property project site as well as the overall drainage area. The project site is located on approximately 120 acres directly to the east of the center of the City of Oakley in the north-central portion of Contra Costa County.

The Gilbert Property project area is situated north of Cypress Road, bordered on the immediate east and west by vacant land and situated a short distance east of the Cypress Grove Project. The proposed project is bounded on the north by the Contra Costa Water District Canal (CCWD/USBR Canal) (see Figure 3-3 in Chapter 3 of this Draft EIR).

Drainage Patterns

The Gilbert property has been historically served by a conventional agricultural drainage system (see Figure 4.12-1). The property is served by a series of shallow ditches that convey stormwater runoff and irrigation return flows to the northern perimeter of the site. The primary points of discharge are through culverts to the Little Dutch Slough to the east and, to a lesser degree, along Sellers Avenue to the southern end of Emerson Slough.

Figure 4.12-1
Drainage on Gilbert Property



Balance Hydrologics, Inc., 2005.

Water Supply

Contra Costa Water District (CCWD)

The proposed Gilbert Property project site is located in the City of Oakley, which relies on the Diablo Water District (DWD) the City's water purveyor. DWD receives water from Contra Costa Water District (CCWD). CCWD's primary source of water is the United States Bureau of Reclamation's Central Valley Project (CVP). CCWD receives additional supplies from Mallard Slough, Mallard Well Fields, and the East Contra Costa Irrigation District (ECCID).

CCWD is a CVP contractor relying almost entirely on the United States Bureau of Reclamation (USBR) to supply the district's water through the Sacramento-San Joaquin Delta (Delta). The CCWD amended contract with the USBR provides for the operation of the Los Vaqueros Project, and for a maximum delivery of 195,000 acre-feet per year (ac-ft/yr) from the CVP. CCWD's supply contract is subject to reductions in deliveries during water shortages including regulatory-restricted low flows and drought years.

The CVP manages approximately nine million acre-feet of water annually, delivering about seven million acre-feet to agricultural, urban, municipal and industrial, and wildlife (public trust) use. The CVP currently provides approximately five million acre-feet for farms and 600,000 acre-feet for municipal and industrial use. The Central Valley Project Improvement Act (CVPIA) dedicates 800,000 ac-ft/year to fish and wildlife and their habitat, and 410,000 ac-ft/year to State and federal wildlife refuges and wetlands pursuant to the CVPIA.

Passage of the CVPIA in 1992 established new CVP operating parameters by reforming water distribution pricing and policies. The CVPIA attempts to better balance the needs of water contractors with those of the environment. Future water allotments under renewed CVP contracts will be based on new estimates of CVP supply that take into account the CVPIA and other new regulations.

In addition to the existing CVP contract, CCWD receives minor supplies from pumped diversions at Mallard Slough and through pumping at the Mallard Well Fields. CCWD has obtained an agreement with East Contra Costa Irrigation District (ECCID) to use up to 12,000 ac-ft/yr (8,200 firm, plus 4,000 in years of shortage) of ECCID water supply for municipal and industrial demands in portions of ECCID that are now within the CCWD Service Area. An agreement with the City of Brentwood provides for the transfer of 21,000 ac-ft/yr to Brentwood for future water needs. A review of water rights in the current CCWD Service Area identified the City of Antioch, the Gaylord Container Corporation, and the Tosco Corporation as having surface water rights.

Under ideal conditions, current agreements entitle CCWD to a total annual supply of 242,700 ac-ft/yr, plus an additional 3,000 ac-ft produced from wells (owned by CCCWD and others) in the District's Service Area.

Central Valley Project

CCWD's primary water supply is through CVP entitlement. On September 18, 1951, the District entered into a contractual agreement with the United States Department of the Interior, Bureau of Reclamation (USBR or Bureau), to receive water service from the Bureau's CVP (Water Right Permits Nos. 12725 and 12726). The contract has been amended on several occasions since the contract's original enactment. The Contract is effective through February 28, 2045 and provides that the Bureau will supply up to 195,000 ac-ft annually to CCWD at Rock Slough.

The CVP's ability to provide water supplies to CCWD is greatly affected by regulatory conditions in the Sacramento-San Joaquin Delta, the Central Valley Project Improvement Act (CVPIA), and upstream water resource conditions. During regulatory restrictions, CCWD will receive greater than 75 percent of the contract entitlement, or 85 percent of historical use. During water shortages, CCWD will not receive less than 75 percent of the contract entitlement or 85 percent of historical use (whichever is less). Under severe drought conditions, the CVP supply can drop to as little as 75 percent of historical use; the contract allows lower supplies during drought emergency conditions, when there is only a sufficient supply to maintain health and safety.

Because the proposed project site is not located within the CVP service area, it will be necessary to obtain an Inclusion Permit from the USBR in order to access the CVP's water supplies to CCWD.

Current Water System Capacity and Quality

Prior to completion of the Los Vaqueros Project, approximately 90 to 95 percent of Diablo Water District's (DWD) raw water was surface water supplied from the Contra Costa Canal. Since the Los Vaqueros Project was completed in 1997, and since a new water intake was constructed by CCWD just south of Discovery Bay at Old River, water quality has improved.

Contra Costa Canal and Los Vaqueros Project

Diablo Water District purchases CVP water from CCWD under a contractual agreement. Surface water is currently supplied from the Contra Costa Canal. The canal is operated by CCWD, which treats water for the District's own use and also sells raw water to agencies serving the municipalities of Oakley, Antioch, Pittsburg, Bay Point, and Martinez and several large industrial users. In turn, these communities/water districts and industries own their own treatment, distribution, and storage systems for treated water.

The Contra Costa Canal is 48 miles long and conveys water from Rock Slough and Old River in the Delta to various treatment plants. The Bureau of Reclamation constructed the canal and the Bureau's four pump stations in 1937, as part of the CVP, to serve agricultural and industrial demands in eastern and central Contra Costa County. Since that time, the predominant demand for canal water has transitioned to residential, commercial, and some industrial use; agricultural use is now negligible. CCWD assumed operation and maintenance of the canal and pump stations in 1972. The canal capacity varies from 350 cubic feet per second (CFS) at Mile 0 in

Oakley to approximately 25 CFS at Mile 48, where the canal terminates into the Martinez Reservoir in Martinez.

Pumping Plant 1 is approximately 4 miles from the canal intake and the City of Oakley is the first major consumer of canal water. The Randall-Bold Water Treatment Plant (RBWTP), which DWD jointly owns with CCWD, takes raw water from the canal downstream of Pump Station No. 4. Los Vaqueros Reservoir also provides raw water, which is blended with Rock Slough canal water prior to delivery to the RBWTP.

Historically, the canal has been a reliable source of water. Stoppages of canal operations have occurred infrequently from one to eight hours in duration, because of electrical or mechanical failures, over the past 20 years. However, water supply was not interrupted because the treatment plant intake is positioned so that water can be backfed to the plant from the Contra Loma Reservoir in Antioch.

In November 1988, Contra Costa County voters passed a bond proposal for the construction of a water storage reservoir in the Los Vaqueros area. CCWD proposed the Los Vaqueros Project to improve the quality of water supplied to the CCWD's customers, minimize seasonal water quality changes, and improve the reliability of the CCWD's raw water supply by providing emergency storage. The raw water supply from Rock Slough is subject to substantial variations in quality, during seasonal periods of saltwater movement from the San Francisco Bay into the Delta. The Los Vaqueros project facilities were completed in 1998. The Los Vaqueros Reservoir supplies high-quality water for blending with Rock Slough water during periods of low water quality in the Delta. Los Vaqueros Reservoir also provides emergency storage in the event of unforeseen circumstances, such as a levee failure or chemical spill, which could make Delta water unusable for extended periods.

The Los Vaqueros Project provides 100,000 acre-feet of storage with a 1,500-acre surface area and 170-foot maximum depth. The intake is from the Delta at Old River just south of Discovery Bay. The intake facility has a 250 CFS (10,000 HP) pumping plant.

The reservoir is filled during times of high water quality (typically winter and spring high flow periods). Then during low flow periods (typically summer and fall) when the canal water quality from Rock Slough is traditionally at the lowest with high sodium and chloride levels, the higher quality water stored in the reservoir is blended with the canal water to improve raw water quality. The blending is effected by the RBWTP at the Neroly blending facility, which receives water conveyed from the Los Vaqueros Reservoir via a pipeline varying from 6 to 8 feet in diameter.

Groundwater Wells

In addition to the surface water supply from CCWD, DWD is developing a groundwater supply system. Groundwater from one or more wells located in the City of Oakley will be conveyed by dedicated well supply pipelines to a blending facility near the Randall-Bold WTP. The first well, Glen Park Well near March Creek, was put into service in 2006. The Glen Park well has a pumping capacity of approximately 2.0 million gallons per day (mgd).

DWD may implement additional wells as "future phases" with specific locations to be determined as part of future well siting studies.

The DWD Urban Water management Plan (UWMP) anticipates that groundwater supply until 2020 is from the Glen Park well only, assuming an average 1.5 mgd pumping capacity. By 2020, the CCWD assumes that an additional well(s) will be constructed that will provide an additional 1.5 mgd capacity. By 2030, an additional 1.5 mgd well capacity is provided. Ultimately, groundwater may provide a total capacity of approximately 6 to 7 mgd.

As constructed, the Glen Park well actually has an average capacity of 2.0 mgd pumping capacity. The DWD has not changed the assumptions in the UWMP regarding the total amount of groundwater supply that would ultimately be available. Instead, the DWD has utilized an additional 0.5 mgd of the anticipated ground water supply earlier than was contemplated in the UWMP.

Expansion of the groundwater supply system is based upon the performance of the Glen Park well. As the Glen Park well is implemented and operated, ongoing data collection and monitoring conducted by DWD will be provided. DWD will monitor groundwater levels and consult other well operators to monitor effects on other wells in the region. In the event local wells were to be adversely affected, mitigation actions would be made on a case-by case basis, and may include, supplying the property with different sources of water, lowering or replacing pumps, or installing new wells.

Randall-Bold Water Treatment Plant

The Randall-Bold Water Treatment Plant, completed in 1992, is jointly owned by DWD and CCWD. CCWD operates the plant under a Joint Powers Agreement between the two agencies that specifies the terms of the contractual arrangement for ownership and operation.

The facility has a capacity of 40 mgd with an expansion capability of up to 80 mgd. The initial treatment capacity is allocated with 15 mgd to DWD (37.5 percent share) and 25 mgd to CCWD. DWD is entitled to increased capacity, from 15 mgd to 30 mgd, provided the incremental increases are no less than 5 mgd in any single increment. DWD must notify CCWD of the need for additional capacity at least three years prior to the date such capacity is required.

Diablo Water District (DWD)

The proposed Gilbert project site is located in the City of Oakley. The Diablo Water District (DWD) is the water purveyor to the City, including the proposed project. DWD's service area encompasses the northeastern corridor of Contra Costa County including the City of Oakley, the Town of Knightsen, and portions of Bethel Island. DWD currently serves a population of approximately 28,000 residents of the City of Oakley. Under the City of Oakley's adopted General Plan, the total build-out population will be approximately 68,000, including approximately 50,000 residents within the existing City limits and 18,000 in the City's expansion area.

Approximately 90 to 95 percent of DWD's raw water supply comes from the Contra Costa Water District (CCWD) via the Contra Costa Canal and Los Vaqueros Reservoir. All surface water is treated at the Randall-Bold Water Treatment Plant (RBWTP), which is jointly owned by DWD and CCWD. When the RBWTP was put into operation in 1992, the treatment plant had an initial capacity of 40 million gallons per day (mgd) with expansion capability to 80 mgd. The initial allocation of water to DWD from CCWD is 15 mgd, with a future maximum allocation of 30 mgd. This future allocation is to be made in increments of 5 mgd under the condition that CCWD is notified at least three years prior to the date such capacity is required.

For purposes of comparing DWD's allocation to CCWD's total water supply, 15 mgd and 30 mgd translate into approximately 16,800 and 33,500 ac-ft/yr respectively. Therefore, in a normal year DWD would initially claim approximately 6.9 percent of CCWD's total water supply under ideal conditions, and approximately 7.3 percent of the firm supply. Under the maximum allocation, in a normal year, DWD would claim approximately 13.8 percent of CCWD's water supply under ideal conditions and 14.6 percent of CCWD's firm water supply.

In addition to the surface water supplies from CCWD, DWD is implementing a groundwater supply system to supplement the raw water supplied by CCWD during peak summer demand periods, or if there is a limitation imposed on Contra Costa Canal supply.

Since 1991, a number of changes have occurred requiring that DWD review and update the districts water system planning to ensure adequate capacity for existing and future customers. In 1993, Oakley Water District became Diablo Water District, with a service boundary that includes the community of Oakley, as well as unincorporated lands in the greater Oakley area. DWD's sphere of influence has also grown to include the Cypress Corridor, Hotchkiss Tract, Veale Tract, and Knightsen. DWD may also provide service to Bethel Island in the future. In 2005, based on DWD's analysis of the changes in the districts sphere of influence (SOI), DWD prepared the Diablo Water District Urban Management Plan.

Diablo Water District Urban Water Management Plan Update

The Diablo Water District (DWD) Urban Water Management Plan Update was adopted in December 2005. Historically, 98 percent of the DWD's customers are residential and the remaining two percent are primarily commercial with some landscape irrigation. DWD does not provide any water for agricultural uses. Between 1995 and 2004, the total number of customer connections increased by approximately 31 percent, an average annual growth rate of approximately three percent per year. The East Contra Costa County area, including DWD's service area, is experiencing high growth. Accordingly, DWD calculated water use projections in five-year increments from 2005 to 2040 (Tables 4.12-1 and 4.12-2). Buildout water usage for each customer sector was calculated using buildout land uses from the City of Oakley General Plan, the East Cypress Corridor Specific Plan, and the Contra Costa County General Plan.

Table 4.12-1
Projected Water Use

Customer Sector (Millions of Gallons)								
Year	Residential		Commercial Business Park, & Light Industrial	Heavy Industrial	Institutional (Public & Schools)	Parks & Landscape Irrigation	Unaccounted for System Losses	Total (MG)
	Single Family	Multi-Family						
2005	1,590	45	5	0	10	35	100	1,785
2010	1,934	124	147	70	40	51	140	2,467
2015	2,279	204	289	140	70	68	180	3,149
2020	2,623	283	431	210	100	84	220	3,831
2025	2,967	362	574	280	130	101	260	4,514
2030	3,311	441	716	350	160	117	290	5,186
2035	3,656	521	858	420	190	134	330	5,868
2040	4,000	600	1,000	400	220	150	380	6,750

Source: Diablo Water District Urban Water Management Plan, December 2005

Table 4.12-2
Current and Projected Water Supplies

Water Source Supplies	2005	2010	2015	2020	2025	2030	2035	2040
Surface Water Purchased from CCWD	2,738 MG	2,738 MG	3,650 MG	3,650 MG	4,562 MG	4,562 MG	5,457 MG	5,457 MG
DWD Groundwater	0	547 MG	547 MG	1,095 MG	1,095 MG	1,642 MG	1,642 MG	2,189 MG
Supplier Produced Diversions: None								
Transfers: Only as supplied by CCWD and included in surface water purchased from CCWD – See DWD's Urban Water Management Plan Section 6.4								
Exchanges: Only through CCWD and including in surface water purchased from CCWD – See DWD's Urban Water Management Plan								
Recycled Water: Section DWD's Urban Water Management Plan Section 5								
Desalinization: Section DWD's Urban Water Management Plan Section 4.4								
Total Supply	2,738 MG	3,285 MG	4,197 MG	4,745 MG	5,657 MG	6,204 MG	7,099 MG	7,646 MG
Source: Diablo Water District Urban Management Plan, December 2005, Table 4-1								

It should be noted that the figures shown in this table for "Surface Water Purchased from CCWD" for years 2035 and 2040 (i.e., 5,457 MG) differ from those shown in Table 4-1 of the 2005 Diablo Water District Urban Water Management Plan (i.e., 5,475 MG). Also, the figure shown in this table for "Total Supply" for the year 2030 (i.e., 6,204 MG) differs from that shown in Table 4-1 of the 2005 Diablo Water District Urban Water Management Plan (i.e., 5,657). These changes reflect the correction of clerical errors contained in the 2005 Diablo Water District Urban Water Management Plan. Note, however, that these changes are consistent with Tables 7-1 through 7-3 of the Urban Water Management Plan, which tables contain the correct figures. (Source: Lisa House, P.E.; CDM, consultant to the Diablo Water District and preparer of the 2005 Diablo Water District Urban Water Management Plan).

DWD's primary water supply is treated surface water from the CVP, purchased from CCWD. CCWD, in turn, contracts with the USBR for delivery of CVP water supplies. CVP water is conveyed through the Contra Costa Canal, and treated at the Randall-Bold Water Treatment Plant (WTP) in Oakley, which is jointly owned by DWD and CCWD. DWD is also beginning to develop a groundwater supply system to provide additional supply reliability. Canal water can also be supplemented by surface water stored at Los Vaqueros Reservoir. Owned and operated by CCWD, the Los Vaqueros Reservoir is a large 100,000 acre-foot storage facility located eight miles south of Brentwood. In May 2005, CCWD renewed their water service contract with the USBR for a period of 40 years, through February 2045.

To accommodate the buildout of DWD's ultimate service area will require the purchase of additional excess capacity at the current WTP, which has a design capacity of 40 mgd and is expandable to 80 mgd. The Randall-Boyd WTP was designed assuming that the treatment plant would be expanded in the future to service future development within the planned service area. The WTP anticipates that DWD will purchase 5 mgd additional capacity in 2015, 2025, and 2035 in order to meet the districts needs.

Groundwater Supply

As described in the Urban Water Management Plan update final report (December 1, 2005), DWD is currently implementing a new groundwater supply system to provide additional supply reliability, known as the Well Utilization Project. Groundwater from the Well Utilization Project, located in the City of Oakley, will be conveyed by a dedicated well supply pipeline to a blending facility near the Randall-Bold WTP. The first well, Glen Park Well near March Creek, was put into service in 2006. The well has a pumping capacity of 1.5 mgd. DWD anticipates that groundwater supply until 2020 is for the first well only. By 2020, additional well(s) will be constructed that will provide an additional 1.5 mgd capacity. Ultimately, groundwater may provide up to 20 percent of the DWD's water supply, which would be a total ultimate well capacity of 6 to 7 mgd.

As constructed, the Glen Park well actually has an average capacity of 2.0 mgd pumping capacity. The DWD has not changed the assumptions in the UWMP regarding the total amount of groundwater supply that would ultimately be available. Instead, the DWD has utilized an additional 0.5 mgd of the anticipated ground water supply earlier than was contemplated in the UWMP.

The Well Utilization Project wells will be developed in a groundwater basin that has been studied since the late 1990's by Luhdorff and Scalmanini Consulting Engineers (LSCE) (see *Investigation of Ground-Water Resources in the East Contra Costa Area*, Luhdorff & Scalmanini, March 1999). The groundwater basin is not adjudicated, and has not been studied by the California Department of Water Resources. The groundwater basin is currently not overdrafted. The DWD wells will be located within the region identified as the Marginal Delta Dunes. When groundwater is withdrawn from an aquifer, groundwater levels are lowered around the well, creating a cone of depression.

The 1999 *Investigation of Ground-Water Resources in the East Contra Costa Area* by Luhdorff & Scalmanini stated that historical conditions suggest that for much of the Alluvial Plain and Marginal Delta Dune regions, extraction activates have not exceed the sustainable yield of the groundwater system. Sustainable yield is unlikely to be exceeded because of the general lack of groundwater development throughout much of these areas. Areas in the vicinity of the river and Delta systems have a large source of potential recharge, which could offset potential adverse impacts due to increased extraction. The Urban Water Management Plan update describes the potential for such impacts causing decreased productivity in existing wells from this process to be low. The Glen Park wells site was chosen based on a regional groundwater investigation, and due to the areas deep annular seal, which will serve to isolate the walls of the well from significant pumping impacts. The UWMP predicted a depression of approximately ten feet of draw down at the City of Brentwood Well 14 when pumping at 3 mgd for 30 days. However, the investigation pumping is greater than the anticipated 1 to 2 mgd well capacity at the Glen Park site. In April 2004 testing indicated that additional pumping at the Glen Park site did not have a measurable impact on groundwater levels at the Brentwood site.

The 1999 *Investigation of Ground-Water Resources in the East Contra Costa Area* by Luhdorff & Scalmanini also indicates that groundwater extraction on a local level may induce some degradation by nitrate. However, these influences can be mitigated through well design practices. DWD will continue to monitor groundwater levels and consult with other well operators to monitor effects on the other wells in the region. In the event local wells were to be adversely affected (i.e. lowering of groundwater below existing pumps or degradation of water quality), mitigation actions would be taken on a case by case basis and could include supplying the property with a different source of well water, lowering or replacing pumps, or installing new wells. It should be noted, however, that Project would not rely on groundwater as a source of water supply because DWD has sufficient surface supplies to serve buildout of the area, which is expected to occur between 2010 and 2015.

Additionally, DWD requires that parks and landscaped areas in new development areas irrigate landscaped areas with groundwater, not with DWD water.

Supply and Demand

As documented in the Urban Water Management Plan update, DWD has adequate supply sources to meet future needs under all conditions, normal, dry and multiple dry water years (see Tables 4.12-3, 4.12-4 and 4.12-5).

Table 4.12-3
Projected Supply and Demand Comparison for Normal Year (MG)

	2005	2010	2015	2020	2025	2030	2035	2040
Surface Water From CCWD	2,738	2,738	3,650	3,650	4,562	4,562	5,457	5,457
DWD Groundwater	0	547	547	1,095	1,095	1,642	1,642	2,189
Supply Total	2,738	3,285	4,197	4,745	5,657	6,204	7,099	7,646
Demand	1,685	2,324	2,964	3,603	4,242	4,881	5,521	6,350
Difference (Surplus of Supply)	1,053	961	1,233	1,142	1,415	1,323	1,578	1,296

Source: Diablo Water District SB 610 Draft WSA, March 2007.

Table 4.12-4
Projected Supply and Demand Comparison for Single Dry Year (MG)

	2005	2010	2015	2020	2025	2030	2035	2040
Surface Water From CCWD	2,738	2,738	3,650	3,650	4,562	4,562	5,457	5,457
DWD Groundwater	0	547	547	1,095	1,095	1,642	1,642	2,189
Supply Total	2,738	3,285	4,197	4,745	5,657	6,204	7,099	7,646
Demand	4,685	2,324	2,964	3,603	4,242	4,881	5,521	6,350
Difference (Surplus of Supply)	1,053	961	1,233	1,142	1,415	1,323	1,578	1,296

Table 4.12-5
Projected Supply and Demand Comparison for Multiple Dry Year Period (MG)

	2005	2010	2015	2020	2025	2030	2035	2040
Surface Water From CCWD	2,738	2,738	3,103	3,103	3,878	3,878	4,638	4,638
DWD Groundwater	0	547	547	1,095	1,095	1,642	1,642	2,189
Supply Total	2,738	3,285	3,650	4,198	4,973	5,520	6,280	6,827
Demand	1,685	2,324	2,964	3,603	4,242	4,881	5,521	6,350
Difference (Surplus of Supply)	1,053	961	686	595	731	639	759	447

Source: Diablo Water District SB 610 Draft WSA, March 2007.

To address long-term demand, both CCWD and DWD are undertaking a number of programs to supplement CCWD's current entitlements, including: water transfers, annual purchases of supplemental water, water recycling (CCWD only), conservation, and improvement of water quality and water storage capacity (Los Vaqueros). For example, to date CCWD's water conservation program has already demonstrated significant success. The measures are set forth in detail in the DWD and CCWD 2005 Urban Water Management Plans, as well as CCWD's 2002 Future Water Supply Study and DWD's 2005 Technical Memorandum.

Constraints on DWD Water Supplies

In addition to potential future drought conditions (both single-year and multi-year), as well as anticipated increases in demand for potable water, the Urban Water Management Plan update identifies several regulatory constraints on the project's future water supply. Those constraints

include: approvals from CCWD, and USBR; compliance with the federal Endangered Species Act (ESA); and implementation of the CVPIA.

As a federal approval, CCWD's water contracts with USBR must comply with Section 7 of the ESA. Under Section 7, USBR must consult with the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries on any federal action which "may affect" a federally listed species or adversely modify critical habitat. In conjunction with CCWD's Future Water Supply Implementation Program and renewal of the district's CVP long-term water service contract, USBR consulted with the USFWS under Section 7. On March 11, 2005, USFWS issued a biological opinion, which amended the service's April 27, 2000 biological opinion and evaluated the direct, indirect, and cumulative effects of CCWD's water supply program and long-term contract renewal. The amended biological opinion concluded that the proposed action (USBR's approval of CCWD's water supply program and long-term contract) was not likely to jeopardize the continued existence of any federally listed species or result in the destruction or adverse modification of critical habitat. To address the indirect effects of the proposed action on upland species within CCWD's service area, the USFWS conditioned the opinion on CCWD's agreement to limit water deliveries to not more than 148,000 ac-ft annually until an incidental take permit is issued for the East Contra Costa County Habitat Conservation Plan (HCP). To address this limitation on water deliveries, the USFWS and CCWD joined with several local jurisdictions (including the City of Oakley) to prepare an HCP for East Contra Costa County. A Draft of the East Contra Costa Count Habitat Conservation Plan and Natural Community Conservation Plan (Draft HCP) was issued in June 2005 for public review and comment. Following the comment period, the Final HCP was prepared and released in October 2006 and was adopted by Oakley in January 2007. The Final HCP is currently in the approval process with the USFWS.

In addition to the ESA, delivery of CVP water may be subject to the CVPIA. Enacted in 1992, the CVPIA amended the Central Valley Project Act, which governs USBR's operation and maintenance of the CVP. Specifically, the CVPIA added the environment as one of several project purposes; along with water supply for agricultural, industrial, and municipal uses. The CVPIA included provisions for dedicating additional water to in-stream uses, an agricultural land retirement program, a restoration fund for acquiring aquatic habitats and other environmentally oriented projects, water conservation, and long-term contract renewals. The CVPIA also supports the transfer of CVP water supplies from agricultural to municipal water supplies. Moreover, consistent with CVP water contracting requirements under Section 3406 of the CVPIA, water conservation measures must be adopted and implemented by any recipients of federal CVP water supplies. Consistent with the CVPIA, USBR renewed CCWD's long-term contract in 2005. The terms of CCWD's long-term contract were considered in the Urban Water Management Plans adopted by CCWD and DWD in December 2005.

Project Site Characteristics

Precipitation

The proposed project area is located in a low-elevation region of Contra Costa County, in the rain shadow of the coastal mountain ranges, which remove much of the moisture from incoming

storm systems. The City of Oakley rests in one of the driest regions in the County, and one of the driest regions in the State of California outside of desert regions. Mean seasonal rainfall maps prepared by Contra Costa County indicate that the average seasonal rainfall on the project site is approximately 11.5 inches per year, markedly lower than the western portion of the County, which, on average, receives more than twice that figure annually.

The Antioch Pumping Plant, which is located roughly 3.1 miles west of the Emerson property, records a minimum annual precipitation of 5.6 inches (in Water Year 1976) and a maximum of 27.1 inches (in Water Year 1983).

Soils

In their analysis of drainage and soil absorption rates on the proposed project site, Balance Hydrologics used Soil Conservation Service (SCS) hydrologic groupings. The SCS groupings divide all soil types into one of four categories on the basis of potential to produce runoff. Grouping types range from Type A soils, which have the lowest runoff potential and typically have high infiltration rates, to Type D soils, which have the highest runoff potential and typically have low infiltration rates.

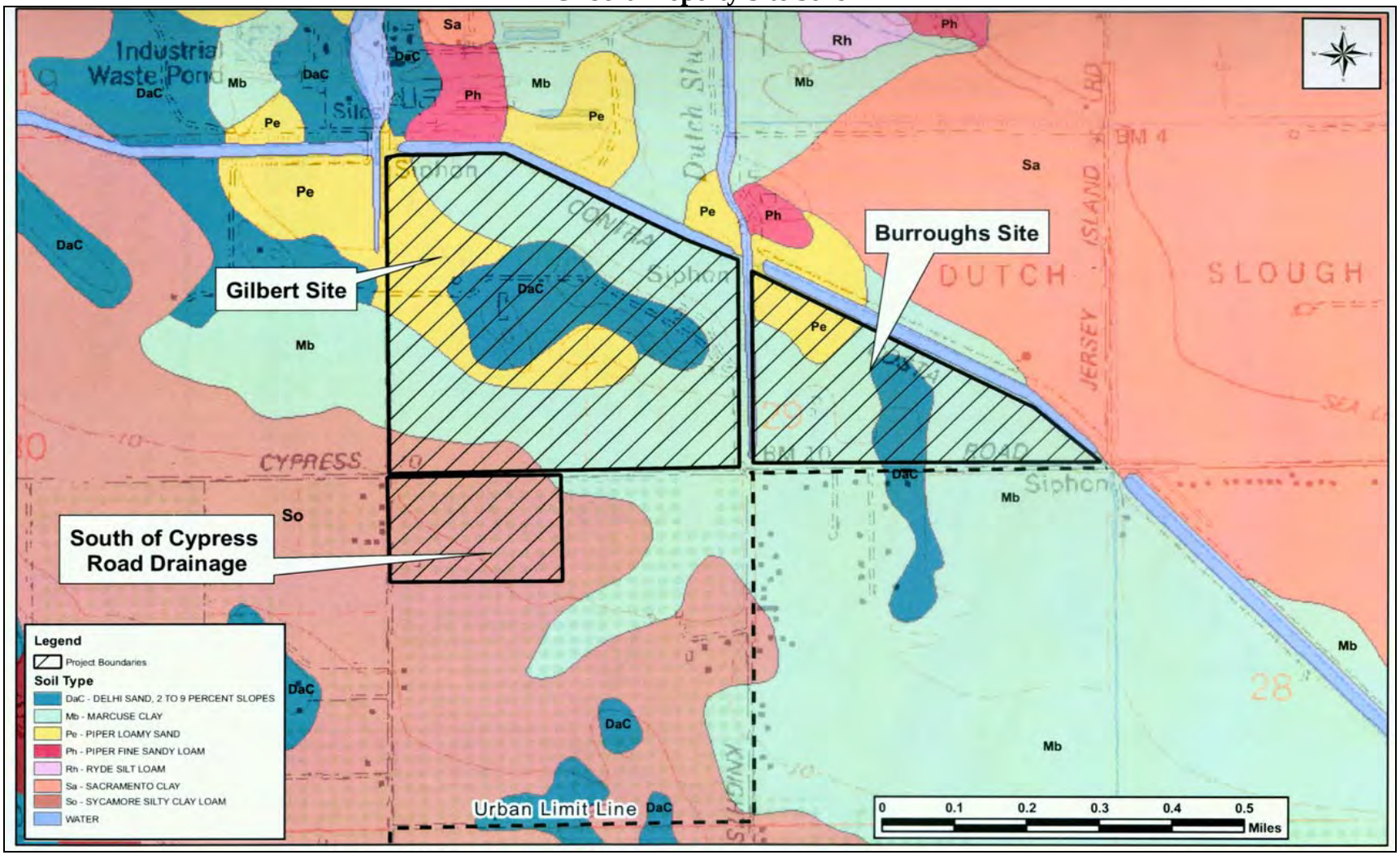
The Soil Survey for Contra Costa County identifies four different soil types on the Gilbert property site (see Figure 4.12-2). Approximately 40 percent of the site is underlain by Marcuse clay (Mb), which extends in a u-shaped plume from the eastern edge of the site. The soil is described as consisting of poorly drained soils that formed an alluvium from sedimentary rock and is categorized as belonging to hydrologic soil group D.

An estimated 25 percent of the Gilbert property is underlain with Piper loamy sand (Pe). The soil is described as consisting of poorly drained soils formed on low Aeolian mounds and ridges that have become more prominent as the surrounding organic soils subside. This soil is categorized in hydrologic soil group C.

A small portion of the site amounting to 10 percent is underlain by Sycamore silty clay loam (So). The soil is in hydrologic soil group C, and is described as poorly drained; and is formed in alluvium from sedimentary rock on floodplains.

The higher lying dunes in the area consist of Delhi sand (DaC), which covers 25 percent of the site; and is described as excessively drained soils that formed in wind-modified stream deposits. The Delhi sands are the only hydrologic soil group A soil found at the project site.

Figure 4.12-2
Gilbert Property Site Soils



Balance Hydrologics, Inc., 2005.

Groundwater

The project site is irregularly shaped with some slight manmade natural rises. Existing site elevations range from approximately four to fourteen feet above mean sea level. The groundwater flow direction in the area is toward the northeast at an estimated rate of approximately one gallon per day per square foot based on a hydraulic gradient of 0.1. The project site is located within the Central District of the California Department of Water Resources (DWR) and is located in the northernmost portion of the Tracy Sub-basin of the San Joaquin River Hydrologic region. Groundwater occurs at the site at depths of approximately four to six feet below ground surface (bgs) (ENGEO Inc., p.20). Within the study area groundwater levels are between 10 and –10 feet according to the National Geodetic Vertical Datum (NGVD.)

Flood Hazards

The proposed project site is not in a designated floodplain area as mapped by the Federal Emergency Management Agency (FEMA, 2002). With the exception of the dune areas, the entire site is currently protected from potential flooding by the levees that run along the Contra Costa Canal that border the project site to the north and the northeast. The base flood elevation from Delta flooding is shown by FEMA to be 7.0 feet. The properties to the north of the Canal are presently mapped in the Special Flood Hazard Area Zone A, which indicates that they are subject to flooding during a 100-year flood event in the Delta.

FEMA and CCFCD regulations state that areas lower than the base flood elevation must be protected by levees with a minimum of three feet of freeboard above the base flood elevation. Contra Costa Canal levees currently offer this level of protection. However, CCWD is currently pursuing plans to underground all or part of the Contra Costa Canal in the vicinity of the project. The District has indicated that the material in the levee may be needed as part of the project.

In either case, the project area would be provided further protection by a new levee system that would be built along the northeast, west and south perimeters of the project to FEMA urban standard levee specifications. The new levee would tie into the higher grades of Cypress Road to the south.

REGULATORY CONTEXT

Existing policies, laws and regulations that would apply to the proposed project are summarized below.

Federal

Emergency Management Agency (FEMA)

The Federal Emergency Management Agency (FEMA) operates the National Flood Insurance Program, which issues maps of Special Flood Hazard Areas (SFHA), based on water surface elevations of the one percent (100-year) flood event. For any project that would result in a

change to the designated 100-year floodplain, a Conditional Letter of Map Revision (CLOMR) is required to be issued by FEMA prior to the initiation of any construction activities. FEMA issues CLOMRs to modify the elevations and/or boundaries of the Special Flood Hazard Areas (based on the 100-year flood event). FEMA requires assurance by the participating community that minimum floodplain management requirements are complied with, including minimum floor elevations above the "base flood," existing lands and structures or proposed structures are "reasonably safe from flooding," and that all supporting analysis and documentation used to make that determination is on file and available upon request. The supporting hydraulic analysis and documentation must include new topographic data and certification by a registered professional engineer or licensed land surveyor.
The floodplain areas are identified on the Flood Insurance Rate Maps (FIRMs) published by FEMA.

National Pollutant Discharge Elimination System (NPDES)

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the federal Clean Water Act (CWA) to regulate municipal and industrial discharges to surface waters of the U.S. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that EPA must consider in setting effluent limits for priority pollutants.

Nonpoint sources are diffuse and originate over a wide area rather than from a definable point. Nonpoint pollution often enters receiving water in the form of surface runoff, but is not conveyed by way of pipelines or discrete conveyances. As defined in the federal regulations, such nonpoint sources are generally exempt from federal NPDES permit program requirements.

However, two types of nonpoint source discharges are controlled by the NPDES program: nonpoint source discharge caused by general construction activities, and the general quality of stormwater in municipal stormwater systems. The 1987 amendments to the CWA directed the federal EPA to implement the stormwater program in two phases. Phase I addressed discharges from large (population 250,000 or above) and medium (population 100,000 to 250,000) municipalities and certain industrial activities. Phase II addresses all other discharges defined by EPA that are not included in Phase I.

U. S. Army Corps of Engineers: Waters of the United States

Areas meeting the regulatory definition of "Waters of the United States" are subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE). The USACE, under provisions of Section 404 of the Clean Water Act (1972), has jurisdiction over "Waters of the United States" (jurisdictional waters). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sand flats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U. S.," tributaries of waters otherwise defined as "Waters of the U. S.," the territorial seas, and wetlands adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3).

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill material into such waters must be in compliance with permit requirements of the USACE. USACE permits are not effective in the absence of State water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board (SWRCB) is the State agency charged with implementing water quality certification in California.

State

Water Planning - Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610 – 10656). The Act requires that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually shall prepare and adopt an urban water management plan. The Act states that urban water suppliers should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act also states that the management of urban water demands and the efficient use of water shall be actively pursued to protect both the people of the State and their water resources.

Water Quality – State Water Resources Control Board

The State Water Resources Control Board (SWRCB) manages all water rights and water quality issues in California under the terms of the Porter-Cologne Water Quality Control Act (1969). The California Department of Health Services (DHS) has been granted primary enforcement responsibility for the Save Drinking Water Act (SDWA.) Title 22 of the California Administrative Code establishes DHS authority and stipulates drinking water quality and monitoring standards. These standards are equal to, or more stringent than, the federal standards.

Water Supply – SB 610/SB 221

Senate Bills 610 and 221, which took effect January 1, 2002, require, specific information about water availability be presented and considered by land use agencies during the processing of certain land use entitlement applications. SB 610 and SB 221 apply to projects that include more than 500 residential units.

SB 610

SB 610 refers to numerous details that must be addressed in the water supply assessment, which are described in portions of the amended Water Code Section 10910:

> (d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the

public water system…under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system […] shall be demonstrated by providing information related to all of the following: (A) Written contracts or other proof of entitlement to an identified water supply. (B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system. (C) Federal, State, and local permits for construction of necessary infrastructure associated with delivering the water supply. (D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

(e) If no water has been received in prior years by the public water system […] under the existing water supply entitlements, water rights, or water service contracts, the public water system […] shall also include in its water supply assessment […] an identification of the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water…

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) A description of any groundwater basin or basins from which the proposed project would be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines…that the sufficiency of groundwater necessary to meet the initial and project demand associated with the project was addressed in [its urban water management plan].

SB 221

SB 221 requires supporting documentation of verification that sufficient water supplies are available for a project. SB 221 provides that in determining whether water supply is sufficient, the water agency shall consider a myriad of factors:

(A) The availability of water supplies over a historical record of at least 20 years.

(B) The applicability of an urban water shortage contingency analysis […] that includes actions to be undertaken by the public water system in response to water supply shortages.

(C) The reduction in water supply allocated to a specific water use sector pursuant to a resolution or ordinance adopted, or a contract entered into, by the public water system […]

(D) The amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under federal, State, and local water initiatives such as CALFED and Colorado River tentative agreements [...]

If the water agency relies upon water supplies not then available to it, then the written verification must be based on the following elements, to the extent each is applicable:

(1) Written contracts or other proof of valid rights to the identified water supply that identify the terms and conditions under which the water will be available to serve the proposed subdivision.

(2) Copies of a capital outlay program for financing the delivery of a sufficient water supply that has been adopted by the applicable governing body.

(3) Securing of applicable federal, State, or local permits for construction of necessary infrastructure associated with supplying a sufficient water supply.

(4) Any necessary regulatory approvals that are required in order to be able to convey or deliver sufficient water supply to the subdivision.

If water supply for the proposed subdivision includes groundwater, the public water system shall also evaluate, based on substantial evidence, the extent to which it or the landowner has the right to extract the additional groundwater needed to supply the proposed subdivision.

The water agency's written verification must also "include a description, to the extent that data is reasonably available based on published records maintained by federal and State agencies, and public records of local agencies, of the reasonably foreseeable impacts of the proposed subdivision on the availability of water resources for agricultural and industrial uses within the public water system's service area that are not currently receiving water from the public water system but are utilizing the same sources of water." The water agency may rely upon a prior CEQA document for this analysis.

If the water agency determines that water supplies are insufficient, the local agency may override that decision. "The local agency may make a finding [based on substantial evidence], after consideration of the written verification by the applicable public water system, that additional water supplies not accounted for by the public water system are, or would be, available prior to completion of the subdivision that will satisfy the requirements of this section."

Local

Diablo Water District

The Diablo Water District (DWD) serves customers in Oakley from a water treatment plant owned in cooperation with the Contra Costa Water District.

Water District Master Plan and Facilities Plan Update

The Diablo Water District (DWD) drafted the original Master Plan in 1991, and has since updated the plan to ensure adequate capacity for existing and future customers. Most recently revised in 1998, the Plan also addresses water-demands projections, identification of potential future facilities, and financial evaluations.

The DWD Facilities Plan Update focuses on water planning with respect to population projections within the Sphere of Influence.

Contra Costa Water District

The Contra Costa Water District (CCWD) serves approximately 450,000 people through north-central and east Contra Costa County, and supplies raw and treated water distribution facilities to Oakley by means of the Diablo Water District. In December 2000, the CCWD developed and implemented an Urban Water Management Plan.

Contra Costa County Flood Control and Water Conservation District

The design of the drainage system for the Gilbert Project area is based on the Contra Costa County Flood Control Standards manual developed by the Contra Costa Water District. The Contra Costa County Flood Control and Water Conservation District standards provide guidance to the development of flood control measures throughout the County, particularly for stormwater drainage and sedimentation issues regarding new development.

City of Oakley General Plan

The following lists the goals and policies related to hydrology and water quality for the project site, as identified in the Oakley 2020 General Plan Growth Management Element:

Water Services

Goal 4.8 Assure the provision of potable water availability in quantities sufficient to serve existing and future residents.

Policy 4.8.1 Coordinate future development with all water agencies to ensure facilities are available for proper water supply.

Policy 4.8.2 Encourage the development of locally controlled supplies to meet the growth needs of the City.

Policy 4.8.3 Encourage the conservation of water resources throughout the City.

Policy 4.8.4 Ensure that new development pays the costs related to the need for increased water system capacity.

Policy 4.8.5 Ensure that water service systems be required to meet regulatory standards for water delivery, water storage, and emergency water supplies.

Policy 4.8.12 Reduce the need for water system improvements by encouraging new development to incorporate water conservation measures to decrease peak water use.

Drainage Facilities

Goal 4.10 Protect persons and property from the damaging impacts of flooding.

Policy 4.10.1 Work cooperatively with Contra Costa County Flood Control and Water Conservation District (CFCWCD) to ensure and enhance flood protection in the City of Oakley.

Policy 4.10.2 Pursue and achieve compliance with all regional, State, and Federal regulations related to flood control, drainage, and water quality.

Policy 4.10.3 Recognize the unique flooding constraints of the areas north and east of the Contra Costa Canal.

Policy 4.10.4 Pursue responsible and adequate financing for implementation of the Drainage Plan.

Policy 4.10.5 Improve and expand the functionality of Marsh Creek as a major drainage corridor.

Policy 4.10.6 Develop new drainage facilities and/or improvements to existing facilities to provide additional recreational or environmental benefit, where possible.

Policy 4.10.7 Land use planning and zoning should be the primary means for flood management in preference to structural improvements, where possible.

Policy 4.10.8 Detention basins should be designed for multiple uses such as parks and playing fields when not used for holding water, where possible.

Policy 4.10.9 Develop open bypass channels, detention basins, and all drainage facility rights of way as an asset to the development or adjacent neighborhood, e.g. as a secondary recreation use.

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

Flood Hazards

Goal 8.2 Protect public safety and minimize the risk to life and property from flooding.

Policy 8.2.1 Applications for development at urban or suburban densities in 100-year floodplain areas where there is a serious risk to life and property shall demonstrate appropriate solutions or be denied.

Policy 8.2.2 In mainland areas along the creeks and bays affected by water backing up into the watercourse, it shall be demonstrated prior to development that adequate protection exists through levee protection or change of elevation.

Policy 8.2.3 Buildings in urban development near the shoreline of the Delta and in flood-prone areas shall be protected from flood dangers, including consideration of rising sea levels.

Policy 8.2.4 Habitable areas of structures near the shoreline of the Delta and in flood-prone areas shall be sited above the highest water level expected during the life of the project, or shall be protected for the expected life of the project by levees of an adequate design.

Policy 8.2.5 Rights-of-way for levees protecting inland areas from tidal flooding shall be sufficiently wide on the upland side to allow for future levee widening to support additional levee height.

Policy 8.2.8 Development proposals near the shoreline of the Delta and within flood-prone areas shall be reviewed by the Flood Control District, as an advisory agency, prior to approval by the city.

Subsidence

Policy 8.2.9 Development of lands subject to subsidence shall take into account and fully mitigate the potential impacts of flooding based on the best currently available techniques.

Levee, Dam Failure, or Tsunami

Policy 8.2.12 In order to protect lives and property, intensive urban and suburban development shall not be permitted in reclaimed areas subject to 100-year flooding, unless flood protection in such areas is constructed. Typically, levees shall meet the standards of the U.S.

Army Corps of Engineers, although 'Dry levees' that supplement existing levees may be allowed at the discretion of the city.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Pursuant to Appendix G of the CEQA Guidelines, a hydrology, water supply, or water quality impact would be significant if the proposed project were to do any of the following:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Increase demand on existing water supply and distribution facilities, such that the facilities cannot meet the demand;
- 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 floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year floodplain structures which would impede or redirect flood flows;
- 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; or
- Expose people or structures to a significant risk of loss, injury or death involving flooding from inundation by seiche, tsunami, or mudflow.

Method of Analysis

The information contained in this section of this EIR was derived from the hydrological evaluations of the project site prepared by Balance Hydrologics. Research methods used in the analysis of the proposed project include the following:

- Precipitation data and rainfall statistics data developed by Contra Costa County Public Works Department;

- Soils data developed by the Soil Conservation Service, now the Natural Resources Conservation Service;
- Site visits to the project site and hydrology study by engineering staff from Balance Hydrologics, Inc.; and
- Hydrologic and hydraulic modeling.

Hydrologic and Hydraulic Modeling

The modeling work focused on predicting the operation of the multi-purpose drainage basins when subject to Contra Costa County Flood Control District (CCCFCD) 100-year and 10-year design storms of various durations. Per standard practice in the County, the preliminary lake and pump station designs are based on the runoff hydrographs for the proposed project conditions using CCCFCD's Hydro-6 software. A full range of storm durations were modeled, because clarity could not be determined as to which would be the most conservative with regard to sizing the infrastructure needed to regulate water surface elevations in the drainage basins. Storm events with durations of 6, 12, 24 and 96-hours were evaluated. The depth-storage relationship for the drainage ponds was assumed from the drainage pond surface area and surrounding side slopes of 4:1. The depth-storage relation for the drainage ponds is important because the depth-storage relation sets how much runoff can be stored within the given water surface elevation targets. (The depth-storage relationship for preliminary lake configuration is shown on Figure 8 in Appendix M of this Draft EIR.)

The input data were used to construct a hydrologic model of the drainage basins using the U.S. Army Corps of Engineers' HEC-HMS software platform. This is a standard hydrologic routing program that includes the hydrographs produced by CCCFCD and allows for various pump station configurations to be tested.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.12-1 Exposure of future and adjacent residents to flood hazard.

The proposed project area is not within a designated floodplain as mapped by FEMA. The site is currently protected to the north and east by the Contra Costa Canal, which borders the proposed project area. FEMA and CCFCD regulations state that areas of lower elevation must be protected by levees with a minimum of three feet of freeboard above the base flood elevation. Contra Costa Canal levees currently offer this level of protection. However, CCWD is currently pursuing plans to underground all or part of the Contra Costa Canal in the vicinity of the project. The District has indicated that the material in the levee may be needed as part of the project.

In addition, the site is subject to inundation risk from the Sacramento/San Joaquin Delta, which has a 100-year flood elevation of seven feet above mean sea level (msl). To protect the homes within the Cypress Grove project and neighboring area, including the Gilbert Property, from flood risks, a levee system was built in 2005 south of the existing

CCWD/USBR levee along the northern boundary of the Cypress Grove project site which extends across the northern boundary of the Cypress Grove development and the northern edge of the Emerson property. An additional levee was constructed along Sellers Avenue on the eastern edge of the Emerson site. The levee that runs parallel to Sellers Avenue extends from the CCWD/USBR canal to Cypress Road. After comprehensive study and analysis for CEQA purposes by the Cypress Grove EIR, the levee was determined to cover the development project to the west of the project site. The levee was built to an elevation of 10 feet above msl to protect against a flood elevation of seven feet, with an additional three feet of freeboard. The remainder of the project perimeter, including Cypress Road, is higher than 10 feet msl and does not require further flood protection.

The levee system was designed to provide flood protection for the Cypress Grove and future projects to the east of the Cypress Grove site, including the Gilbert Property, in conformance with the requirements of FEMA. As required by FEMA, the levee integrity was evaluated with respect to potential detrimental settlement, stability and seepage. Potential levee settlement was evaluated under static and seismic loading conditions. Satisfactory factors of safety against levee slope failure were achieved for several potential loading conditions, which include end of construction, sudden draw down, critical flood stage, steady seepage at flood stage, and earthquake. The levees were designed in accordance with both under-seepage and through-seepage FEMA requirements.

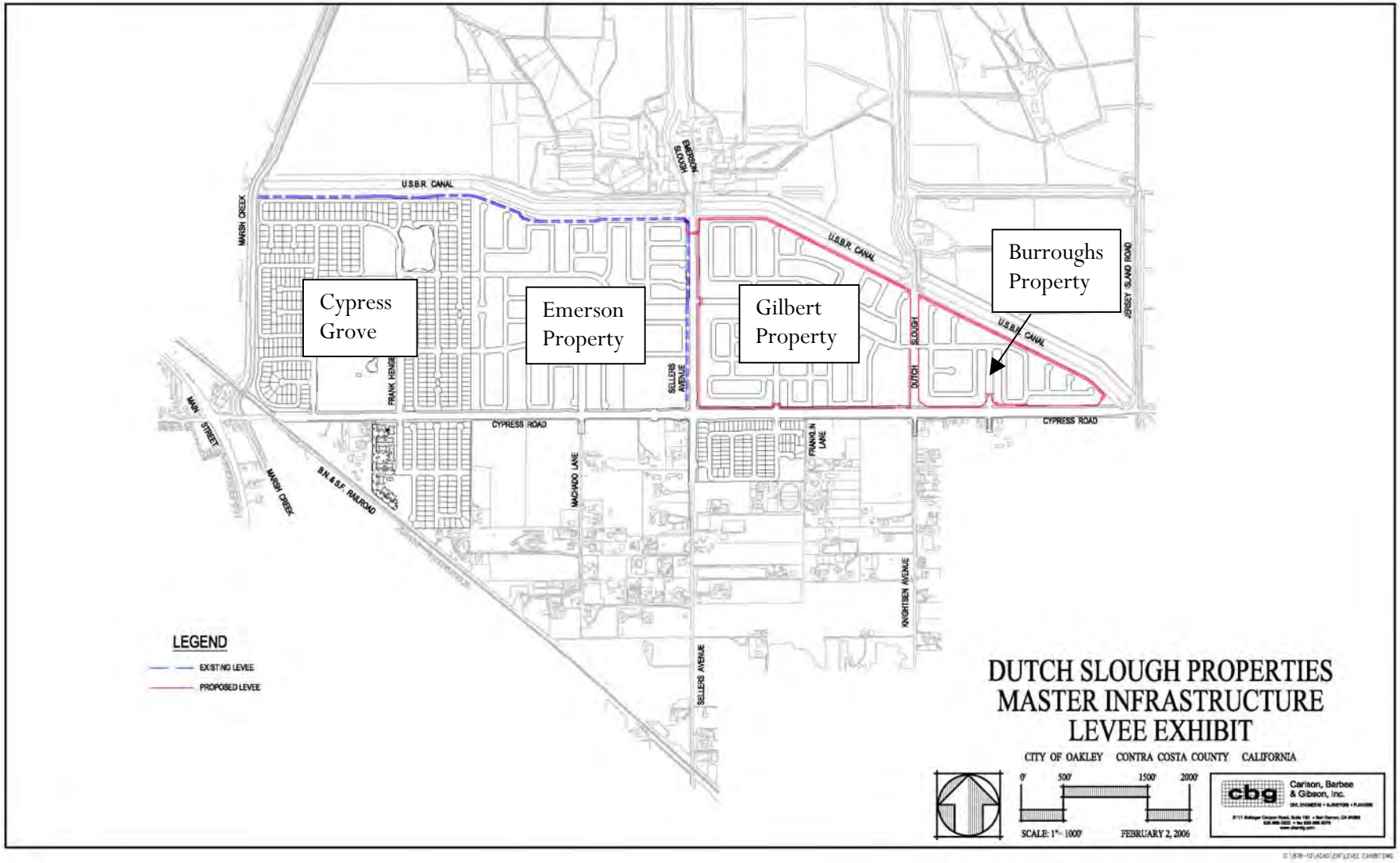
The Gilbert Property would construct levee systems similar to the levee constructed for the Cypress Grove project which runs along the northern edge of the Cypress Grove and Emerson properties, and along the eastern border of the Emerson property (See Figure 4.12-3, Existing and Proposed Levees). The existing levee along Sellers Avenue may be modified with this development to cross Sellers Avenue and connect into the proposed Gilbert levee system, eliminating the requirement for levees along Sellers Avenue.

The CCWD has raised a concern regarding potential levee failure of the adjacent Contra Costa Canal. The canal contains drinking water supplied to the district. The portion of the canal adjacent to the site is earth-lined and has been in existence since the 1950s. Significant breaches of this levee have not occurred in the past. In addition, the CCWD has the ability to shut off the water supply at the nearby pump station #1. Therefore, a CCWD canal levee failure would not be anticipated to result in a substantial adverse impact.

The protection offered by the existing Contra Costa Canal, as well as the additional levees put in place by the Cypress Grove project and proposed levee expansions around the Gilbert property would provide protection from floodwaters for the proposed project site and the surrounding areas. Therefore, the development would result in a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

Figure 4.12-3
Existing and Proposed Levees



4.12-2 Maintenance of levees surrounding the project.

The site is subject to flood risks from the Sacramento-San Joaquin Delta, which has a 100-year flood elevation of 7 feet above msl. To protect the Gilbert Property and Cypress Grove project areas, a levee system was built in 2005 along the northern boundary, south of the existing CCWD/USBR levee and along Sellers Avenue. The levee also extends from CCWD/USBR canal to Cypress Road.

The levee was built to an elevation of 10 feet above msl to protect against a flood elevation of seven feet with an additional three feet of freeboard. The remainder of the project perimeter to the south is higher than 10 feet msl and does not require further flood protection.

The Gilbert Property would construct a levee systems similar to those built for the Cypress Grove project. The existing levee along Sellers Avenue may be modified with this development to cross Sellers Avenue and connect into the proposed Gilbert levee system, eliminating the requirement for levees along Sellers Avenue. If not maintained properly, the levee system surrounding the project could cause significant flooding risks to people and structures in the Gilbert Property development. Therefore, the impacts of the levee system would be ***potentially significant*** to future residents and structures if not maintained properly.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level:

4.12-2 *Prior to Improvement Plan approvals the project engineer shall develop a levee maintenance program. The maintenance program shall be submitted for the review and approval of the City Engineer and include the plan for financing and maintenance of the levee system. The plan shall include the following guidelines:*

- *All pertinent agencies that may have jurisdiction over the repair area shall be consulted. These agencies may include (but are not limited to) the California Department of Fish and Game, the U.S. Fish and Wildlife Service, the Army Corps of Engineers, the Regional Water Quality Control Board, the Contra Costa County Public Works Department, and the Contra Costa County Flood Control District.*
- *Both an engineering geologist and a civil engineer shall be consulted on significant embankment repairs.*
- *Soil removal and placement shall be limited to the minimum amount needed to achieve bank stabilization.*
- *Access roads shall be kept clear of obstructions and maintained in a manner that allows access for maintenance equipment at all times. Access road dimensions and specifications shall conform to guidelines prepared by the City of Oakley.*

- *The establishment of woody vegetation (e.g. trees or shrubs) can impair the integrity of the levees. Therefore, regular inspection for, and removal of, woody vegetation shall be required.*
- *Tunnels created by ground squirrels and other animals can also compromise the integrity of the levees. Annual inspection of the levees by a competent professional shall be required to assess the need for remedial repairs and animal control measures.*
- *Material shall not be placed in a manner that could be eroded by normal or expected high flows.*
- *Bank stabilization in excess of 500 feet in length or an average of one cubic yard per running foot must be authorized by the City of Oakley or Contra Costa County Flood Control.*
- *The condition of levee embankments and access roads shall be monitored in detail as part of routine monitoring, as well as during post-flood event inspections. During periodic monitoring visits, personnel shall inspect the entire perimeter of the levees around the project and note evidence of erosion or slope failures on both sides of the levee. Embankments shall generally be free of erosion, rills, slumps, and landslides.*

4.12-3 Change in peak stormwater flows.

The project area is part of a larger drainage area that is part of the City of Oakley's master drainage planning efforts. The drainage area includes the approximately 31 acres area which includes Cypress Road and areas to the south of the Gilbert property in the area referred to as the Baldocchi property (See Figure 4.12-4).

The project site is bounded on the immediate north by levees that protect against flooding associated with the large storms in the Central Valley and Sierra Nevada Mountains that occasionally result in high flood elevations in the delta. The Flood Insurance Study for the City of Oakley (FEMA, 2002) identifies the base flood elevation to be seven feet in the adjacent delta waters. The base flood elevation is such that local drainage systems for the proposed project site would not be able to reliably drain storm water to the sloughs through gravity-flows in all circumstances. Therefore, the capability to pump stormwater runoff from the site over the levee system into Emerson Slough for drainage is necessary.

Additionally, the groundwater table at the project site fluxes seasonally. This results in potential seepage of stormwater to or from the Contra Costa Canal. Because of this, any stormwater storage would need to be physically separated from local shallow groundwater by liners, clay soil or other appropriate means.

The project site has four distinct segments that would move stormwater runoff to the ultimate discharge point at the south end of Emerson Slough. The four segments are:

- *Gravity-Flow Storm Drains*. A series of gravity flow storm drains would be the primary component of the storm drain system for the proposed properties. The drainage system would consist of a conventional storm line network that would be designed to collect stormwater runoff and convey the stormwater runoff in underground pipes to the lake located centrally in the Gilbert Property. Because of the potentially high water surface elevations that can occur in the lake during significant storm events, the trunk line installed would be built to at least 48 inches in diameter.

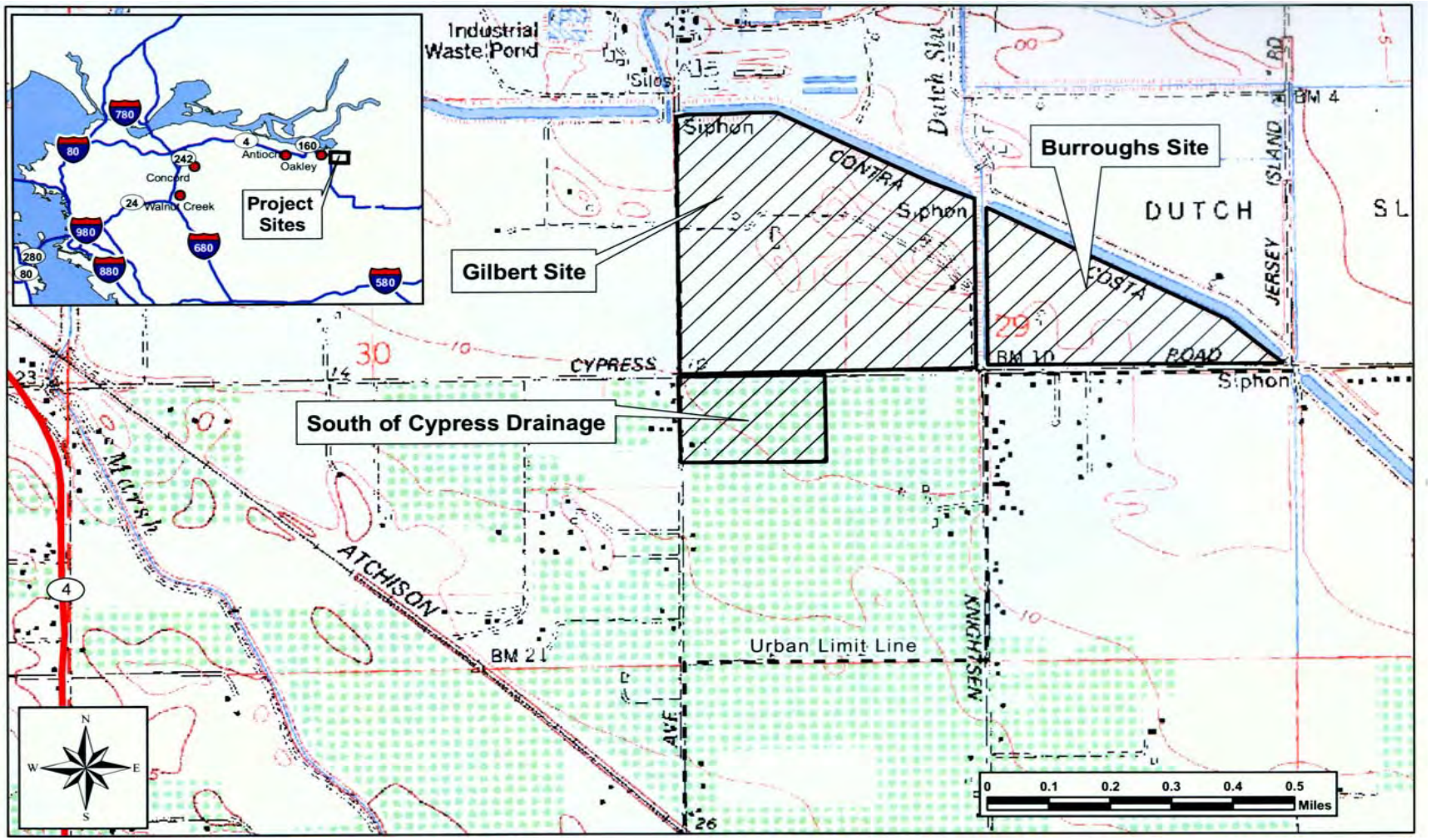
- *Multi-Purpose Lake*. The proposed multi-purpose lake would be located on the Gilbert property. The lake would provide water quality and peak runoff control benefits, serve as an important component of the common area irrigation system, and provide aesthetic benefits for the project.

  The lake would include lining to separate lake/stormwater from the water table, be graded to a minimum of 10 feet below normal water surface elevation to discourage the growth of aquatic plants, and would have exterior slopes graded to no greater than 4:1. The lake would also have a storage volume of 19.7 acre-feet. The lowermost part of the volume would be used to slowly release the runoff from a small to moderate storm event. The storage volume associated with the drainage basin would accommodate the runoff from large events up to, and including, the CCFCD 100-year design storms. The drainage basins would also comply with Contra Costa County guidelines regarding the recovery of storage volume via pumping.

  The recovery pumps would allow for the entire detention volume to be recovered in 48 hours and 70 percent in the first 24 hours, per County guidelines. Finally, the lake would also serve as irrigation water storage for the common areas of the project.

- *Stormwater Pump System and Force Main*. The lake would be drained by a stormwater pumping station equipped with reserve pumps and emergency power generation equipment so that the pump would be able to operate during extreme events. The pumps would send the flow from the lakes to an outfall at the end of Emerson Slough to the north through a storm drain force main.

Figure 4.12-4
Gilbert Site Stormwater Drainage



Balance Hydrologics, Inc., 2005.

- *Storm Drain Outfall at Emerson Slough.* The outfall location for the water pumped from the lakes on the Gilbert property would be located at the southern end of Emerson Slough, just north of the Contra Costa Canal at the end of Sellers Avenue. The outfall structure was discussed in detail in the Stormwater Management Plan for the Cypress Grove project, which is currently under construction to the west of the proposed project site. The outfall structure was designed, analyzed for impacts, and permitted as part of the Cypress Grove project. The outfall was designed with four pipe outlets, one from Cypress Grove, one from the Emerson lake and drainage system, one for drainage south of Cypress Road, and one for the Gilbert lake and drainage system. The outfall is permitted for a total peak discharge of 140 cfs.

In the event of a 100-year storm, the multi-purpose lake on the Gilbert property would be able to provide active storage volume of 19.7 acre-feet. The volume above the water-quality elevation is reserved to accommodate the runoff from large storm events up to and including the CCFCD 100-year design storms. Therefore, the multi-purpose lake on the Gilbert site is designed to contain the rainfall associated with the 100-year storm.

The storm drain system, stormwater pond, and stormwater pump station and outfall designed for the proposed project would ensure that the change in peak stormwater flows resulting from the proposed project would have a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

4.12-4 Adequate water supply and delivery for new residents.

The proposed project would result in an increased demand for domestic water. The Diablo Water District (DWD) provides water service to all residential and commercial users within the city limits. The water supply available to DWD is the Central Valley Project water purchased by Contra Costa Water District (CCWD) under CCWD' contract number 175r-3401 with the U.S. Bureau of Reclamation, and resold by CCWD to DWD under CCWD's Code of Regulations.

The water supply is sufficient to meet the projected water demand associated with the Gilbert Property. The approval of the Bureau of Reclamation must be obtained for the inclusion of the land of Gilbert Property for municipal and industrial water service under CCWD's contract. CCWD's application for inclusion is underway, and approval is anticipated.

According to the City of Oakley's 2020 General Plan, maximum water needs figures are calculated based on the assumption that single-family units consume an average of 525 gallons per day (as determined by DWD standards included in the Oakley 2020 General Plan, p. 4-21.) The projected water demand for the Gilbert Property area, bounded by the Cypress Grove project to the west, Cypress Road to the south and the Contra Costa Canal to the north and east would be an average of 267,750 GPD (gallons per day) or 299.1

AFY (acre-feet per year) for the residential portions of the site and 4,495 GPD or 5.0 AFY for the 3.1 acres of park uses. Total estimated project water demand for the proposed project would be 304.1 AFY.

The maximum projected water demand associated with Gilbert Property is estimated to be approximately 304.1 AFY. The availability of the above stated quantity is included and accounted for in DWD's Draft Water Supply Assessment for the Gilbert Property Project (March 2007), DWD's Urban Water Management Plan, DWD's 1998 Facilities Plan Update, CCWD's 2000 Urban Water Management Plan, and CCWD's 1996 Future Water Supply Study. The maximum quantity of water purchased by DWD in any prior year is approximately 1.8 billion gallons. Delivery of water to the Gilbert Property can be accomplished by extension of DWD's existing water mains. Funding for the delivery of the supply is documented in DWD's 1998 Facilities Plan Update. State and local permits for construction of the extensions can be obtained routinely in the normal course of business.

The Gilbert Property project site is located within the boundaries of CCWD service area. However, the entire project is located north of East Cypress Road, outside of the CCWD's CVP contractual service area boundary. Therefore, the project must be approved for inclusion in the CVP service area boundary by the USBR. An application for inclusion of the project into the CVP service area boundary is currently under consideration by CCWD and USBR; however, the final CEQA documentation and other environmental information, including evidence of compliance with ESA and other federal regulations would need to be completed for the Gilbert Property Project and coordinated through CCWD for submission to the Bureau of Reclamation as an inclusion application.

In addition, on June 1, 2006, the project applicants entered into that certain *East Cypress HCP/NCCP Memorandum of Agreement* (HCP MOA) with USFWS and the California Department of Fish and Game to assure, among other things, the expedited issuance of all required inclusions in the CCWD's CVP contractual service area, the prompt completion of any other required Section 7 consultations, and the timely and effective mitigation for potential impacts to special status species. Pursuant to the terms of the HCP MOA, the project applicants agreed to participate in the HCP and USFWS agreed to initiate discussion with USBR and CCWD leading to the initiation of formal consultation with USFWS, under section 7 of the ESA, relative to inclusion of the project site into the CCWD's CVP contractual service area.

The Gilbert Property project site is in the eastern portion of DWD's Sphere of Influence. The area is currently operating as a new pressure zone. A pressure reducing station is planned to be located near the intersection of Sellers Avenue and Cypress Road to maintain acceptable pressures under low demand conditions. The Randall-Bold Water Treatment Plant would provide all water supplies in low demand conditions. Under higher demand conditions, Reservoir R-3 would be able to provide additional supplies.

The DWD Facilities Update recommended a Capital Improvement Program (CIP) for service within the DWD's Sphere of Influence to help support and plan the necessary

facility expansion in the area. The schedule for improvements to serve new developments is dependent on the actual growth that occurs. Included in the CIP are:

- Installation of new pipelines.
- Construction of a secondary emergency well.
- Addition of Reservoir No. 3.
- Purchase of additional capacity at the Randall-Bold WTP.
- Increasing capacity at existing reservoirs.

The total capital investment for all of the improvements was estimated at $27.4 million (in 1998 dollars).

The DWD has funding mechanisms to finance capital improvement in new developments. These mechanisms include a Facility Reserve Charge (FRC) and Main Extension Reimbursement Assessment (MERA). Currently FRC's are charged to new water connections based upon the water meter size. MERA funds are used to reimburse developers who install oversized water lines.

Providing near-term service to the proposed development at the Gilbert Property would require the construction of a 20-inch waterline north of Cypress Road that would loop back to the Cypress Road Main. In addition, to avoid cycling too much water through Reservoir R-1, off-site system improvements would be required. The proposed project would require the completion of the 24-inch waterline loop in Carpenter Road between Empire and O'Hara Avenue. The 24-inch main in Carpenter Road is presently under construction by the Magnolia Park Subdivision and should be in service by the time the additional services would be needed for servicing the project area.

The development of the proposed project would necessitate the buildout of infrastructure in accordance with DWD's capital improvement plan and other off-site improvements. Therefore, the impact on water supply and delivery would be considered ***potentially significant.***

Mitigation Measure(s)
Implementation of the following mitigation measures would mitigate potential impacts to a *less-than-significant* level.

4.12-4(a) *Prior to approval of the final map the applicant shall be required to pay a fair share fee as determined by the DWD toward the CIP for water service infrastructure improvements.*

4.12-4(b) *Each final subdivision map approval shall be conditioned on DWD's issuance of a "Written Verification" that its water supplies are sufficient to serve the subdivision, if required by and consistent with SB 221.*

4.12-4(c) Each final subdivision map approval shall be conditioned on the inclusion of the property covered by such map within the CCWD's CVP contractual service area.

4.12-5 Degradation of water quality in the Contra Costa Canal and Dutch Slough.

Degradation of the water quality of the water bodies surrounding the proposed project could occur during two phases, construction and operation.

Construction Phase

During grading of the proposed project site, the top layer of the site soil would be exposed. Runoff from the site during storm events would pick up the exposed soil particles and transport the suspended sediment offsite, potentially to waterways of the State. In addition, any fuel or oil leaks from the equipment working on-site would be entrained in the runoff. Similarly, once the project utilities and internal roadways have been installed, the exposed soils on the building pads would be transported as sediment to the storm drains during storm events.

To control the above types of construction discharge, the Regional Water Quality Control Board (RWQCB) requires any development planned to disturb one-acre or more to obtain a National Pollutant Discharge Elimination System (NPDES) general construction permit (General Permit). The General Permit requires the developer to file a Notice of Intent (NOI) to develop the proposed project and to produce and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP is a dynamic document prescribing site-specific Best Management Practices (BMPs), changing the BMP type and location based on the construction timeline and BMP monitoring. Compliance with the NPDES General Permit would help prevent sediment from leaving the site during construction.

Operational Phase

The Contra Costa Canal is the natural northern border for the project site, running east to west between the site and farmlands to the north. The proximity of the waterway to proposed residential properties north of Cypress Road could potentially affect water quality (due to anticipated roofs, roadways, and other impervious surfaces), resulting in the loading of urban pollutants into increased stormwater runoff. The CCWD has expressed concern that drainage and seepage originating from the housing developments could impact the Canal's water quality. In addition, the drainage from the site could impact water quality in Emerson Slough because stormwater would be ultimately discharged to the Slough via the pump located at the stormwater pond.

The proposed multi-purpose lake on the Gilbert Property project site was designed by Balance Hydrologics, Inc. to be an effective overall best management practices (BMP) for the site, providing volume-based treatment control and additional treatment for runoff prior to leaving the site. The lake would be sized to serve as an extended detention BMP

for the entire contributing watershed (including the current watershed south of Cypress Road and the Baldocchi property).

The lake would be multi-purpose in nature and therefore require different operating levels depending on the circumstances of individual storms and the season of the year. The pond would be designed as an amenity to the project and should therefore be attractive and safe, as well as functional. The flow-based treatment controls include bioretention areas, bioswales and similar BMPs where the rate of runoff is the primary design criterion, and not the total runoff volume.

The sizing calculations for deriving the appropriate water quality treatment volume were taken directly from the Stormwater C.3 Guidebook. The volume estimates are based on the directly connected impervious area in the contributing watershed. The required treatment volume is 5.6 acre-feet. This volume corresponds with the lake being filled to the elevation of 3.1 feet. The only time that the lakes would fill to this elevation would be during moderately large storms, or when a sustained series of storms results in more than 5.6 acre-feet of runoff in 48 hours.

Conclusion

The proposed project would be required to obtain and comply with the NPDES General Permit and the stormwater management system is designed to adequately treat urban runoff generated by the project. Thus, during both the construction and operation of the proposed project, sediment and urban pollutants would not reach the surrounding water bodies in significant quantities. Therefore the proposed project would result in a ***less-than-significant*** impact on water quality in the Contra Costa Canal and Emerson Slough.

Mitigation Measure(s)
None required.

4.12-6 Maintenance of stormwater lake.

The proposed lake would be operated and managed like other similar lake features throughout central California. Best practices associated with stormwater drainage and lake management have become well established and are built upon years of accumulated experience. Details regarding the care and maintenance of the multi-purpose lake on the Gilbert Property would be detailed in a separate Operations Maintenance Manual (OMM).

Several key issues for upkeep and maintenance of the multi-purpose lake include maintenance of water levels in dry periods. From the months of May to October, the lakes would likely require make-up water to maintain their normal surface elevation as a result of evaporation. Calculations show that in the period of highest demand in June and July, the lake would require approximately 3 acre-feet per month (Balance Hydrologics' *Preliminary Stormwater Management Plan for Burroughs Property*, Table 9). The most likely source for this replacement water would be groundwater pumped via well(s),

though the possibility exists that the proposed project would utilize water from the Emerson Slough. The use of well water would be consistent with the lake as a central element of the common area irrigation systems. Other maintenance issues that would be detailed in the OMM include maintaining an attractive shoreline, removal of debris and control of nutrient loads and aquatic algae and plants.

If not maintained properly, the stormwater lake could have an adverse effect on future residents in the proposed project. Insect, wildlife, and/or water quality issues could adversely affect future residents. Therefore, the impacts of the water quality detention basin would be ***potentially significant*** to future residents.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level:

4.12-6 *Prior to Improvement Plan approvals, the project engineer shall develop a storm drain system maintenance program. The maintenance program shall be submitted for the review and approval of the City Engineer and include the plan for financing and maintenance of the water quality detention basin. The plan shall address aquatic vegetation and vector control, pond bank and inlet structure conditions, and pond sediment removal.*

4.12-7 Maintenance of storm drain system.

Storm drains throughout the project would function best if the amount of sediment entering the system is kept to a minimum. The level terrain at the project site would help to reduce the overall amount of sediment generated within the drainage area of the stormwater pond because the erosion potential would be low, particularly after landscaping has been established. Many of the routine BMPs implemented as part of the City of Oakley's responsibilities under the NPDES permit for Contra Costa County would work to reduce sediment production and mobilization within the project. Among the most important would be the following:

- Regular street sweeping. Regular street sweeping can have a significant impact on the control of such constituents of concern as trash and debris, particulates, and heavy metals. All streets should be swept on a regular basis to control the build-up of sediment and trash with particular attention to the early fall period prior to the onset of the winter rainy season. Street sweeping schedules would follow City of Oakley standards, but should not be less than monthly.
- Inlet and catch basin cleaning. Stormwater inlets and catch basins can function as effective sediment traps for heavier materials. Therefore, these structures would need to be maintained and cleaned on at least an annual basis. Typical maintenance schedules for these activities include a thorough inspection and

cleaning in late summer or early fall and a mid-winter inspection to identify any new problems that may have arisen.

If not maintained properly, the storm drain system could have an adverse effect on the drainage patterns of the project site and the treatment efficiency of the water quality detention pond due to it being heavily loaded with sediment. Therefore, the impacts of the storm drain system would be ***potentially significant*** to future residents.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level:

4.12-7 Implement Mitigation Measure 4.12-6.

4.12-8 Groundwater Interaction with Stormwater Pond well and Irrigation

The project includes construction of a lake that would be supplied by stormwater runoff and groundwater resources for the purpose of establishing storage capacity. Groundwater resources would be utilized to maintain the water level of the lake and also supply turf irrigation water for landscaping and common green spaces. To evaluate the affects on groundwater supply and demand contributed from the project, in addition to other nearby planned development for which additional lakes and community park and turf space are planned, ENGEO Inc. prepared the October 2005 Groundwater Study for the project site. The Groundwater Study evaluated groundwater conditions over a much broader area than the site (approximately 12 square miles) (the "groundwater study area") to provide an adequate and cumulative assessment of the potential impacts of the project's use of groundwater for lake water level maintenance and turf irrigation.

To evaluate the hydrology specific to the groundwater study area, available Water Well Drillers Reports (WWDRs) were obtained from the Department of Water Resources for the entire groundwater study area. In addition, a reconnaissance of the area was conducted to identify groundwater wells for which WWDRs were not on file. The ENGEO report also evaluated other available studies of the groundwater basin, including but no limited to, Luhdorff and Scalmanini Consulting Engineer's (LSCE) 1999 investigation of the groundwater conditions in the east Contra Costa County area for the East County Water Management Association and LSCE's 2005 investigation of two new wells within the study area. Most of the wells in the groundwater study area were screened between 100 and 250 feet below the ground surface (bgs), while some of the boreholes extended as deep as 610 feet bgs.

The ENGEO report determined that groundwater recharge in the groundwater study area currently exceeds the groundwater pumpage by approximately 1,455 acre feet per year and that groundwater levels in the area have remained shallow and constant for a long period. Groundwater occurs beneath the project site at depths of approximately 4 to 6 feet bgs (elevations of 10 to -2 feet NGVD). Within the groundwater study area, groundwater levels are between approximately 10 and -10 NGVD. Throughout the

region, groundwater is encountered at depths of less than 20 feet. Accordingly, the ENGEO report determined that the groundwater study area does not appear to be in a state of overdraft as demonstrated by the shallow groundwater levels and that the overall groundwater levels have been very stable and are expected to remain that way irrespective of whether recharge from irrigation or rainfall increase or decreases over the area due to urbanization.

According to the ENGEO report, groundwater levels have the potential to be lowered only a relatively small amount as a result of urbanization for the following reasons:

- The surface water levels in the adjoining sloughs and river will remain constant, thereby providing a significant recharge source for the area.

- While urbanization has the potential of reducing available groundwater recharge from irrigation and rainfall by up to 90 percent (from 3,400 to 340 acre feet per year), an increase in available recharge from slough and river course stream beds would occur. The potential end result could be a lowering of the groundwater table by only 10 feet in the northeastern portion of the groundwater study area and 20 feet in the southwestern portions of the study area.

- A removal of groundwater pumpage in the groundwater study area due to land use changes (e.g., removal of industrial groundwater use like that which formerly existed at the Lesher property, east of the project site, and other agricultural irrigation pumping in surrounding areas) would counteract the affects of lost recharge from urbanization. The amount of gain in the groundwater budget by stopping industrial and commercial groundwater pumpage is conservatively estimated at 1,000 acre-feet per year.

The probable net affect of lost recharge due to urbanization and future groundwater pumpage for lake makeup water and turf irrigation requirements is a shift of groundwater flow from northeastward to southwestward in the northeastern portion of the groundwater study area as the loss recharge is replaced by stream bed infiltration along Emerson, Sandmound, Little Dutch and Dutch Sloughs. The potential available rate of infiltration from the sloughs to groundwater is estimated to be between 1,700 and 3,400 ac-ft/year, depending on the degree of hydraulic gradient reversal that may occur. The net negative difference of 1,440 acre feet per year due to urbanization is less than the minimum 1,700 acre feet per year available from the infiltration of slough water. Much of the land in the groundwater study area is currently irrigated through lift pumps or sluice gates that take water from the sloughs and disperse it on the land. The amount of irrigation water sourced from the sloughs is conservatively estimated to be approximately 9,650 acre per year. Under an urbanization scenario, 75 percent of the 9,650 acre feet per year of water pumped from the sloughs would cease and that water would become available for indirect recharge of the groundwater basin. Given that 1,440 acre per year is relatively small compared to approximately 7,240 acre per year (75 percent of the estimated 9,650 acre feet per year historically derived from the sloughs for irrigation purposes), the there

would be a net beneficial affect of increased amounts of water in the sloughs once the area is urbanized.

According to the Groundwater Study, the study area has a generally low occurrence of chemical release sites because of its rural setting. Previous phase one environmental site assessments by ENGEO for the project site did not reveal significant contaminated sites that would indicate potential impacts to groundwater. Groundwater in some areas within the study area, to the south of the project site, contain elevated nitrate levels at less than 100 feet deep due to agricultural practices. A 1999 study prepared by LSCE also noted differences in groundwater quality with respect to high nitrate levels being limited to the upper sequence of aquifer materials and that nitrate levels decreased appreciably in wells screened below 200 feet. Review of a map of the aerial distribution of nitrate concentrations at selected wells shows pronounced differences between the Brentwood, Discovery Bay, Oakley and Delta areas. In general, nitrate concentrations were below detection limits for wells within the study area.

Generally, detectable nitrate levels trend lower across the study area from the southwest to the northwest. In the northeastern and eastern portions of the groundwater study area, closer to Emerson, Little Dutch, Dutch and Rock Sloughs, nitrate is generally not detectable in groundwater. This pattern of lower nitrate levels in the northeast may be attributable to the local groundwater recharge conditions that are comprised of significant amounts of irrigation with higher quality river water and without much use of agrichemicals (fertilizers and pesticides). Nitrate was not detected in groundwater that services the communities on Sandmound Road, Bethel Island, and Holland Tract.

An example of the localized and sporadic occurrence of elevated nitrate levels occurs in the vicinity of Delta Road and State Route 4. A groundwater well at the Bethel Mission Baptist Church located just west of SR 4, had a nitrate as (NO_3) level of 46 mg/l while the groundwater well at Delta Kids Center located less than 1,000 feet to the east of the church on Delta Road does not have detectible levels of nitrate. One well, located at the intersection of Sellers Avenue and Cypress Road is only 90 feet deep and had a nitrate as NO_3 level of 93 mg/l. A large area of orchards is shown on aerial photographs of the study area (USGS, 1998) in the immediate vicinity and upgradient of this well that may have a localized affect on the groundwater quality less than 100 feet deep. In contrast, in the vicinity of the City of Oakley where less farming occurs, nitrate as NO_3 levels are low, ranging from less than 4 mg/l at Diablo Water District's Contra Costa Canal Pumping Station (well likely greater than 100 feet deep) to 12 mg/l at State Well Number 002N002E036M001M (a well that is 130 feet deep) located approximately 1/2 mile further west of the Bethel Mission Baptist Church.

In July 2003, ENGEO conducted a focused investigation on shallow groundwater in the immediate vicinity of the Emerson Dairy north of the project site, which indicated nitrate as NO_3 levels were below analytical detection levels in six of the seven samples collected. One sample had a nitrate as NO_3 concentration of 320 mg/l that was in close proximity to the wash water disposal pond for the dairy operation and was considered a

localized affect because nitrate levels were below detection levels at locations less than 500 feet away.

The Groundwater Study indicates a slightly different trend in the distribution of total dissolved solids (TDS) concentrations in the study area with respect to surrounding areas like Brentwood and Discovery Bay. Higher concentrations (generally above 1,000 mg/l) are evident in the Brentwood area compared to the study area and Discovery Bay (generally between 500 and 1,000 mg/l). TDS concentrations cannot be concluded to show the same trend with depth as nitrate concentrations. Groundwater beneath Brentwood appears to have a higher component of groundwater recharge from the Coast Ranges geomorphic province than the Great Valley or Sierra Nevada providences to the east that may have a stronger influence on groundwater beneath the study area than in Brentwood. Another plausible explanation for the lower TDS concentrations beneath the study area and the Discovery Bay area is their closer proximity to the San Joaquin River and Delta resulting in a greater component of stream bed recharge of higher quality surface water, generally having low TDS concentrations, to their underlying aquifers than recharge from the Coast Ranges. The lithologic profile in the groundwater study area indicates generally thicker and shallower sequences of sand that would increase the chances for surface water infiltration to reach the underlying aquifer.

The Groundwater Study indicates lower chloride concentrations in the study area compared to areas to the south and west (e.g., Brentwood and central Oakley areas). However, in general, chloride concentrations are below 200 mg/l, well below concentrations considered brackish (e.g., 500 mg/l). The data collected in and surrounding the groundwater study area suggests that, in general, groundwater in the study area is less impacted with nitrates than in the Brentwood area where farming of row crops that use agrichemicals in greater volumes than in the study area appears to have contributed significantly to nitrate in groundwater. The groundwater study area has primarily been used to raise cattle feed and, in general, application of fertilizers, pesticides and herbicides is not done. Therefore, irrigation infiltration in the study area has a lower propensity to cause nitrate contamination in the groundwater.

Finally, water quality in the sloughs appears to be of higher quality (i.e., lower TDS and no nitrates) than agricultural runoff water that also infiltrates to the groundwater table (i.e., high TDS and nitrates). With the onset of urbanization and a reversal of groundwater flow direction, water quality is expected to improve in the study area as a result of slough water recharge.

Conclusions

The project is part of an overall urbanization of the entire groundwater study area. The combined affects of this urbanization will result in a change in the sources of recharge and pumpage within the overall groundwater budget. While these changes are appreciable in quantity, they have a tendency to counteract each other and would not result in significant overall loss of groundwater supply or a significant drop in the groundwater table elevation. In addition, the changes in sources of recharge and

pumpage in the groundwater beneath the study area has the potential to improve the general quality of the groundwater by changing the groundwater flow direction. The result is that future slough water that is capable of recharging the groundwater is of higher quality than a substantial portion of the irrigation water currently recharging groundwater. Therefore, the impacts to groundwater resources caused by well pumping to maintain the water level of the project's lake and also to supply turf irrigation water for landscaping and common green spaces would be ***less-than-significant***.

Mitigation Measure(s)
None required.

Cumulative Impacts

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.12-9 Contribution to cumulatively increased stormwater drainage into the existing drainage system.

The proposed project plus other developments in the project area would create impervious surfaces where none currently exist. The addition of impervious surfaces to the area would increase the stormwater drainage downstream of the project area. The proposed project plus other development in the project area may increase the stormwater flowing into the drainages, which could overcome the existing drainage system and cause flooding downstream.

The majority of the surface runoff flows to the northeast of the site and discharges into the Contra Costa Canal and Emerson Slough. The proposed drainage system for the overall drainage area (of which the proposed project is a component) would consist of a gravity-flow pipe system leading to the multi-purpose lake on the Gilbert property, which would be regulated by a pump system. Increases in flows generated from the development of the proposed project would be contained in the proposed drainage system.

The proposed project includes the use of two to four 36-inch drainage pipes at the Emerson Slough outfall that were installed by the nearby Cypress Grove development in order to accommodate the anticipated need resulting from the buildout of the Cypress Corridor area. Each outfall pipe would serve a distinct area within the drainage shed. The maximum discharge volume from each area would not exceed 35 cubic feet per second (cfs) at Emerson Slough, equating to a discharge velocity of approximately 5 feet per second (fps). Consequently, during a large storm event, the maximum impact at the Slough would occur when each of the four pipes discharges 35 cfs. Although a total of 140 cfs of flow would be entering Emerson Slough, the velocity would still be limited to 5 fps.

Therefore, although the proposed project and buildout of the General Plan would increase the amount of impervious surfaces to the drainage area of which the project site is a part, the stormwater management system designed by Balance Hydrologics would contain increased flows resulting from the project and other development in the Cypress Corridor and would also redirect runoff from existing drainage systems. Therefore, the proposed project would have a ***less-than-significant*** impact on existing drainage systems.

Mitigation Measure(s)
None required.

4.12-10 Project contribution to cumulative water quality impacts downstream of the project site.

Development of the proposed Gilbert Property project and buildout of the General Plan would increase the sediment load of area waterways. In addition, the stormwater runoff occurring in urbanized areas would contribute a higher amount of pollutants to adjoining channels. As such, water quality in the region could be affected on a short-term and long-term basis.

However, the project applicant has proposed a design for the Cypress Corridor drainage area, which would prevent pollutants from entering the downstream channel. The proposed drainage plan would construct one multi-purpose lake to serve as detention basin, which would filter out pollutants before the drainage enters Emerson Slough. Therefore, the impact to water quality would be considered ***less-than-significant***.

Mitigation Measure(s)
None required.

4.12-11 Project contribution to cumulative water supply impacts.

The proposed project would result in an increased demand for domestic water. The Diablo Water District (DWD) provides water service to all residential and commercial users within the city limits. The water supply available to DWD is the Central Valley Project water purchased by Contra Costa Water District (CCWD) under CCWD' contract number 175r-3401 with the U.S. Bureau of Reclamation, and resold by CCWD to DWD under CCWD's Code of Regulations.

According to the Diablo Water District's UWMP, the DWD has adequate supply sources to meet future needs under all conditions for its entire future planning area, including the Project area. DWD is entitled to and intends to purchase additional surface water treatment capacity, when needed to meet future demands. Ultimately, DWD expects to have surface water supply capacity of 15 mgd on an average annual basis.

DWD's groundwater supply is primarily an alternate source to surface water for reliability, to help provide peaking capacity in the summer during very hot (maximum demand) days, and to enhance flexibility for cost-effectively operating the system.

Groundwater will also provide some of the total required annual supply to meet future demands after 2020. It should be noted that the Project would not rely on groundwater as a source of water supply because DWD has sufficient surface supplies to serve buildout of the Project, which is expected to occur between 2010 and 2015.

At City buildout in 2040, the amount of groundwater supply capacity needed to meet average annual demands under normal and single dry year conditions is about 2.5 mgd; and under multiple dry year conditions is about 4.5 mgd to supplement reduced surface water supply. It is anticipated that this 4.5 mgd capacity would be provided by the existing Glen Park well and 2 future wells. Ultimately DWD may construct more wells to have up to 6 to 7 mgd of groundwater supply to provide additional flexibility for cost-effective system operations and additional reliability during short-term emergencies, such as temporary outages of the surface water treatment plant.

If future groundwater investigation/monitoring indicates that it will not be possible to provide the anticipated amount of groundwater supply at the anticipated timeframes, then DWD may procure additional surface water supply from CCWD sooner than estimated in the UWMP or investigate other local supply sources. The timing for future purchases of additional surface water can be adjusted as needed to meet future conditions. With the UWMP estimated timing for future additional surface water supply, groundwater supply is not required to meet annual demands until 2020 even under multiple dry year conditions. If the full amount of surface water supply were purchased sooner than estimated in the UWMP, then groundwater would not be required to meet annual demands until 2035 even under multiple dry year conditions.

Therefore, as determined by the *SB 610 Water Supply Assessment for the Gilbert Property Project* prepared by Diablo Water District, adequate water supplies exist to support the buildout of the City of Oakley General Plan. Because the proposed project is consistent with land uses specified in the General Plan, the proposed project's impact to water supplies in the cumulative condition would be expected to be ***less-than-significant***.

Mitigation Measure(s)
None required.

Endnotes

[1] City of Oakley. *Oakley 2020 General Plan.* August 30, 2002.
[2] City of Oakley. *Oakley 2020 General Plan Draft Environmental Impact Report*, September 2002.
[3] City of Oakley. *City of Oakley 2020 General Plan Background Report.* September 2001.
[4] Balance Hydrologics, Inc. *Stormwater Management Plan for the Gilbert Property, City of Oakley, California*, July 2005.
[5] ENGEO, Inc. *Groundwater Study*, October 2005.
[6] Diablo Water District. *SB 610 Water Supply Assessment for the Gilbert Property Project*, July 2006.

4.13 PUBLIC SERVICES AND UTILITIES

4.13 PUBLIC SERVICES AND UTILITIES

INTRODUCTION

This section will summarize setting information and identify potential new demand resulting from the proposed Gilbert Property project on sewage systems, solid waste disposal, law enforcement, fire protection, schools, libraries, parks and recreation, electric power, natural gas, and telephone services. Water supply is discussed in Chapter 4.12, Hydrology, Water Supply and Water Quality.

Information for this section was drawn from the *Oakley 2020 General Plan Background Report*,[1] the *Contra Costa County (CCC) General Plan*,[2] the *CCC General Plan's Draft Environmental Impact Report*,[3] and the *Oakley 2020 General Plan*[4] and its associated EIR.[5] Further sources include the *Diablo Water District 1998 Facilities Plan Update* (DWD Plan) prepared by Camp, Dresser & McKee (CDM), the *Contra Costa Water District Urban Water Management Plan*, the *Contra Costa Water District Future Water Supply Study*, and the *Bay Area Census 2000 Report*[6] provided by the Association of Bay Area Governments (ABAG), and information submitted by the applicant regarding proposed services and utilities.

ENVIRONMENTAL SETTING

The environmental setting section describes the existing proposed project site, including the water system, wastewater collection and treatment, solid waste collection and disposal, law enforcement, fire protection, schools, parks and recreation facilities, and other related public utilities.

Project Site

The proposed Gilbert Property project consists of approximately 120-acres within the Cypress Corridor Planning Area, which is situated in the northeastern area of the City of Oakley.

The project site is bordered by several pre-existing and proposed subdivisions, the Contra Costa Canal, as well as parks and recreation areas. The General Plan designates the land to the north of the Gilbert Project site to be Delta Recreation and Parks and Recreation. The area to the east of the development is within the East Cypress Corridor Specific Plan Area. The site is boarded on the immediate west by the vacant Emerson property, and the Cypress Grove residential development is located on the other side of the Emerson property. A variety of land use designations are in use in the region to the south of the project site, including Commercial; Single Family Very Low, Low, Medium and High; Multi-Family Low; Parks and Recreation; Agriculture; and Agriculture Limited.

The project site is situated north of Cypress Road, east of the vacant Emerson property and west of the vacant Burroughs property. The project is bounded on the north by Contra Costa Water

District Canal (CCWD/USBR Canal), which acts as a boundary between the project site and open space acreage to the north, which is currently owned by the State of California. A 55-acre portion of land immediately north of the CCWD/USBR canal, and the project site at the end of Sellers Avenue is held in escrow, pursuant to a Memorandum of Understanding and Development Agreement, for the future conveyance to the City of Oakley as a community park.

The topography of the project site is generally flat; vegetation consists of grassland and a limited number of primarily non-native trees. A trailer and several outbuildings are situated on the Gilbert Property.

Development of the proposed project would include 510 residential units on lots ranging from 3,000 to 8,000 square feet.

Wastewater Collection and Treatment

The Ironhouse Sanitary District (ISD) provides wastewater service to the entire City of Oakley and the unincorporated areas of Bethel Island and Sandmound. Wastewater services include the transmission of primarily residential and some commercial and light industrial wastewater to a treatment facility, treatment, and land disposal of the wastewater and residual waste solids.

Current System Capacity

The wastewater system is composed of collection, treatment, and disposal. The collection and treatment facilities will be expanded to meet future requirements. The disposal system has been sized to meet the buildout capacity within the District. The current daily flow is 2.1 MGD and treatment capacity totals 3.0 MGD. The current disposal delivery system can handle 4.3 MGD.

Current Facilities

The trunk line system is divided into four general areas that are identified as follows:

- Empire Avenue System
- South of Ridge Line System
- Central System, O'Hara Avenue, Laurel Road
- Highway 4 System

Pumping stations and wet wells are to be designed for continuous operation at peak inflow. For reasons of safety, the pumping stations are duplex installations with standby power at major stations. Pump system failure alarms and pumping status is telemetered to signal the ISD office.

Wastewater Treatment

ISD owns and operates a wastewater treatment plant in the northeast portion of Oakley. The plant currently provides wastewater treatment services for Oakley, Bethel Island, and the Sandmound area. Fifty acres of on-site storage are currently available for treated wastewater. The plant uses an aerated pond treatment system that occupies about 7.5 acres of the site. The

aerated pond system consists of a nine-inch parshall flume, two grinders, two pumps, and two parallel-two-stage aerated treatment ponds followed by storage and then chlorination.

Effluent Disposal

Effluent is disposed of through land application of the treated effluent on irrigated pasture and agricultural crops. Currently the disposal is split between the mainland and Jersey Island properties, both are owned by the District. ISD is permitted to apply the reclaimed water on 350 acres of the Jersey Island property and on 260 acres of the mainland property. This provides enough capacity to accommodate the current plant capacity of 3.0 MGD. ISD has increased expected ultimate effluent disposal capacity from 3.0 MGD to 8.0 MGD by the acquisition of additional land.

Sludge Disposal Capacity

ISD has increased its sludge disposal capacity through the beneficial reuse of sludge by land application on ISD-owned lands. ISD rotates the application of dewatered sludge and treated effluent both on the existing disposal areas on ISD property and on Jersey Island.

Solid Waste Collection, Disposal, and Recycling

Oakley Disposal Service, since 1976, has provided residential and commercial solid waste collection and recycling service to the City of Oakley. Contra Costa Waste Service and Mt. Diablo Recycling are affiliates of Oakley Disposal Service and provide recycling services and waste diversion programs.

Oakley Disposal Service

Solid waste collected by Oakley Disposal in the City limits of Oakley is hauled to the recycling Center and Transfer Station in Pittsburg, which is operated by Contra Costa Waste Service. Residential, commercial, and industrial waste is processed at this transfer facility and the residual material is hauled to Potrero Hills Landfill (PHLF) outside Suisun City. PHLF is permitted to accept waste through 2015, with the potential expansion of 50 additional years.

Mt. Diablo Recycling

Oakley Disposal Service provides weekly curbside recycling service whereby each residential customer is provided two 12-gallon crates for discarding recyclables. Green waste service is provided on a bi-weekly basis. The curbside material is transported to the Concord Facility (Mt. Diablo Recycling) where the recyclables are sorted and moved to the appropriate markets for processing, composting, etc.

Law Enforcement

The City of Oakley contracts with the Contra Costa County Sheriff's Department for equipment and personnel. However, the Oakley Police Department controls the specifics of delivery of law

enforcement services in the City, and this control results in a city-based police operation free of County jurisdiction. The current number of officers in the City results in a ratio of 0.7 police officers per 1,000 residents.

The General Plan EIR indicates that as the population in the General Plan area increases, the need for additional law enforcement services would increase. The General Plan EIR indicates that to maintain the level of service for the General Plan area, the appropriate police officer to population ratio is 1.5 officers per 1,000 residents.

Fire Protection

The City of Oakley receives fire protection services through the East Contra Costa Fire Protection District (ECCFPD). The East Contra Costa Fire Protection District, which was formed in 2002 provides suppression, dispatches emergency services for a 250-mile area, including the City of Oakley, and is the second largest fire service in the County. The district includes eight stations and over 300 emergency staff. Station 93 serves the City of Oakley.

The ECCFPD strives to achieve a standard five-minute response time 90 percent of the time (Contra Costa County General Plan 7-25). In 2003, the district received a total of 1483 emergency calls and maintained an average response time of six minutes 34 seconds.

Schools

Three school districts serve the Oakley area: Oakley Union Elementary School District, Liberty Union High School District, and Antioch Unified School District. Following are brief descriptions of the schools operated by these three school districts.

Oakley Union Elementary School District (OUESD)

The OUESD encompasses the City of Oakley with Neroly Avenue and Delta Road as the southern border, Sellers Avenue and Sand Mound Slough as the eastern border, and Empire Avenue as the western border. The following schools are included in the OUESD:

- O'Hara Park Middle School (1100 O'Hara Ave.)
- Gehringer Elementary (4951 Main St.)
- Laurel Elementary (1141 Laurel Rd.)
- Oakley Elementary (501 Norcross Ln.)
- Vintage Park Elementary (1000 Vintage Parkway)
- Iron House Elementary (4801 Frank Hengel Way)
- Delta Vista Middle School (4901 Frank Hengel Way)

For elementary schools, the City of Oakley is primarily served by the Oakley Union Elementary School District. The Oakley Union Elementary School District currently maintains a capacity of approximately 4,000 students (2,400 elementary students and 1,600 middle school students.) As of the 2006 school year, the district currently has 4,542 students enrolled and is at 114 percent

capacity. Iron House Elementary, located to the west of the proposed project site in the Cypress Grove development, is now open and should partially alleviate the overpopulation of the school district.

Liberty Union High School District (LUHSD)

The LUHSD includes two full service high schools, Freedom High School (in Oakley) and Liberty High School (in Brentwood). The district also maintains a special-needs school, Heritage High School as well as a continuation high school, LaPaloma High School. Enrollment in the LUHSD is currently over capacity, with 5,329 students in the 2006 school year and a capacity of 2,500 students per high School (Dan Smith, Superintendent LUHSD).

Antioch Unified School District (AUSD)

The AUSD primarily covers the City of Antioch, and the western portion of Oakley from the border with Antioch to Empire Road and Big Break Road. Of the seventeen schools in the District, the following five schools enroll Oakley students:

- Bidwell Elementary (800 Gary Ave.);
- Kimball Elementary (1310 August Way);
- Antioch Middle School (1500 D St.);
- Antioch High School (700 W. 18th St.); and
- Deer Valley High School (4700 Lone Tree Way).

The Antioch Unified School District serves the western portion of the City of Oakley. The Gilbert Property project is on the eastern edge of the City of Oakley and would not result in an increase in enrollment at the Antioch Unified School District.

Libraries

The Contra Costa County Library District provides library services for the City of Oakley. The Contra Costa Library District includes 19 branches, one central library and three outlets located throughout Contra Costa County. The District maintains every public library in the County with the exception of Richmond City Library, which is owned and operated by the City.

According to Laura O'Donoghue, the Deputy County Librarian for Contra Costa Library District, the district maintains a branch in the City of Oakley, located at Freedom High School. The Oakley City Library was relocated from a smaller location to the Freedom High School site in the third quarter of 1999. The Library includes 6,000 square feet of dedicated space for the public library. During the 2004-2005 fiscal year, the Library served 54,357 visitors.

The Contra Costa County Library District is funded through a percentage of County property taxes and does not receive any funding through the County's general fund budget or any construction assessment fees.

Parks and Recreational Facilities

Two basic park types exist in Oakley, neighborhood and community parks (Oakley 2020 General Plan, p. 7-15). Neighborhood parks generally abut residential areas and have amenities such as play areas, picnic areas, gathering areas, and open turf. These parks have turf areas suitable for informal play, practices, and scrimmages, but not formal games. Community parks are designed to serve the needs of several neighborhoods up to the whole community. The parks are intended to host organized, formal recreation leagues and tournaments to meet adult recreation opportunities that would require larger fields and therefore larger sites.

The City of Oakley became responsible for the provision of local parks at the time of its incorporation in 1999. Parks in the City of Oakley that are located on school property or other joint-use sites, and maintained under school/park joint-use agreements with the Oakley Union School District or Contra Costa County are funded by the park's Landscape and Lighting Assessment District. The school use agreements detail how all aspects of the joint site-use are funded, developed, and maintained.

The existing agreements provide for joint school/community-use areas, a term used to describe areas used exclusively by the schools during the school day and that are available to the public after school hours and on weekends. Public park use, or day use, is also provided by the agreements, which refers to sites that are available to the general public during all daylight hours. Existing Oakley recreation facilities are listed in Table 4.13-1.

Electrical and Natural Gas Service

The Pacific Gas and Electric Company (PG&E) is obligated by California Public Utilities Commission (CPUC) Rule 15 to extend services to all new developments. However, PG&E is not required to distribute the services throughout the project site; it is only responsible for getting the electricity to the project site.

Oakley is positioned within PG&E's Delta Distribution Planning Area (DPA), which covers the eastern portion of the County from Bay Point to Discovery Bay. Electric transmission and distribution facilities are located throughout the DPA, with electric transmission lines (generally energized at 21,000 volts) crossing the western area of Oakley. However, individual sets of facilities are not dedicated to serving Oakley exclusively. Electric distribution facilities consist of overhead and underground lines and associated line equipment such as transformers, switches, etc. Existing gas facilities include gas transmission lines in the western portion of Oakley. Distribution gas mains are located in the roads serving residential and commercial facilities.

Telephone Service

The City of Oakley is currently served by AT&T for all telephone needs. AT&T's existing facilities are able to supply services to the City, and are comprised of one central office in Oakley and two main feeder routes consisting of both aerial and underground lines.

Table 4.13-1
Oakley Park Facilities Inventory[7]

Facility	*PARK ACREAGE*		
	IMPROVED	UNIMPROVED	TOTAL
Neighborhood Parks [1]			
Claremont Bay Park	.25 acres		.25 acres
Crockett Neighborhood Park	4.66 acres		4.66 acres
Heather Park	.16 acres		.16 acres
Holly Creek Neighborhood Park		6.7 acres	6.7 acres
Laurel/Nutmeg		2.56 acres	2.56 acres
Laurel Road at Marsh Creek Park Site		9 acres	9 acres
Main Street Park	.4 acres		.4 acres
Marsh Creek Glenn Park	2.4 acres		2.4 acres
Patriot Park	.2 acres		.2 acres
Stonewood Park		1.95 acres	1.95 acres
Teakwood Basin Park		5.2 acres	5.2 acres
SUBTOTAL	**8.07 acres**	**25.41 acres**	**33.48 acres**
Joint-Use School [2]			
Freedom High School	9 acres	3 acres	12 acres
Gehringer Elementary School	4.2 acres		4.2 acres
Laurel Elementary School	4 acres		4 acres
Oakley Elementary School	4 acres		4 acres
O'Hara Park Middle School	17.5 acres		17.5 acres
Vintage Parkway Elementary School Park	4.37 acres		4.37 acres
SUBTOTAL	**43.07 acres**	**3 acres**	**46.07 acres**
Civic, Sports, Recreation, Activities/Community Parks			
Civic Center and Plaza		1.0 acre	1.0 acre
Freedom Soccer Fields Park	8.48 acres		8.48 acres
Laurel Ballfields Park	13.63 acres		13.63 acres
Laurel Crest Park Site		10 acres	10 acres
Laurel Road at Marsh Creek Park Site		9 acres	9 acres
Moura Park Site	1.5 acres	4.5 acres	6 acres
SUBTOTAL	**23.61 acres**	**24.5 acres**	**48.11 acres**
Open Space			
Del Antico Basin Site		2.95 acres	2.95 acres
Las Dunas Basin Site		1.0 acre	1.0 acre
Live Oak Basin Site			
SUBTOTAL	**0.0 acres**	**3.95 acres**	**3.95 acres**
Regional Parks [3]			
Antioch Oakley Regional Shoreline	.81 acres		.81 acres
Big Break Regional Park		43.14 acres	43.14 acres
Legless Lizard Preserve		.62 acres	.62 acres
SUBTOTAL	**.81 acres**	**43.76 acres**	**44.57 acres**
Total Park Acres	**75.56 acres**	**100.62 acres**	**175.56 acres**
Acres required for city population (27,000) [4]	135 acres		135acres
Acres per 1,000 people [4]	**2.43 acres**	**4.23 acres**	**6.75 acres**
Park acres required at 2020 Build-out (68,371) (City pop.: 49,388; Expansion Areas pop.:18,983)	342.27 acres		**342.27 acres**

1. Includes parks and playfields made available through joint-use agreements between the City and the Flood Control District.
2. Includes parks and playfields available through joint-use agreements between the City, the Flood Control District and the School District.
3. Acreage noted for Regional Parks is 11% of total acreage of regional park sites within Oakley, based on Oakley's participation in East Contra Costa County regional parks funding programs.
4. Figures based on city park standard of 5 total park acres/1,000 people (2 acres/1,000 for community parks, and 1 acres/1,000 for special purpose facilities).

Source: Oakley 2020 General Plan, p. 7-15, and the City of Oakley Parks & Recreation Department.

REGULATORY CONTEXT

Existing policies, laws and regulations that would apply to the proposed project are summarized below.

Federal Regulations

Clean Water Act (CWA) / National Pollutant Discharge Elimination System Permits (NPDES)

The CWA is the cornerstone of water quality protection in the United States. The statute employs a variety of regulatory and nonregulatory tools to sharply reduce direct pollutants discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water." The CWA regulates discharges from "non-point source" and traditional "point source" facilities, such as municipal sewage plants and industrial facilities. The CWA makes it illegal to discharge pollutants from a point source to the waters of the United States. Section 402 of the Act creates the NPDES regulatory program. Point sources must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory). NPDES permits cover industrial and municipal discharges, discharges from storm sewer systems in larger cities, storm water associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than one acre, mining operations, and animal feedlots and aquaculture facilities above certain thresholds. All so-called "indirect" dischargers are not required to obtain NPDES permits. An indirect discharger is one that sends its wastewater into a city sewer system, so it eventually goes to a sewage treatment plant (POTW). Though not regulated under NPDES, "indirect" discharges are covered by another CWA program, called pretreatment. "Indirect" dischargers send their wastewater into a city sewer system, which carries it to the municipal sewage treatment plant, through which it passes before entering surface water. Permit requirements for treatment are expressed as end-of-pipe conditions. This set of numbers reflects levels of three key parameters: (1) biochemical oxygen demand (BOD), (2) total suspended solids (TSS), and (3) pH acid/base balance. These levels can be achieved by well-operated sewage plants employing "secondary" treatment. Primary treatment involves screening and settling, while secondary treatment uses biological treatment in the form of "activated sludge."

National Pretreatment Program

The National Pretreatment Program is a cooperative effort of federal, State, and local regulatory environmental agencies established to protect water quality. The program is designed to reduce the level of pollutants discharged by industry and other non-domestic wastewater sources into municipal sewer systems, and thereby, reduce the amount of pollutants released into the environment through wastewater. The objectives of the program are to protect the Publicly Owned Treatment Works (POTW) from pollutants that may interfere with plant operation, to prevent pollutants that may pass through untreated from being introduced into the POTW, and to

improve opportunities for the POTW to reuse wastewater and sludges that are generated. The term "pretreatment" refers to the requirement that non-domestic sources discharging wastewater to POTWs control their discharges, and meet limits established by EPA, the State or local authority on the amount of pollutants allowed to be discharged. The control of the pollutants may necessitate treatment prior to discharge to the POTW (therefore the term "pretreatment"). Limits may be met by the non-domestic source through pollution prevention techniques (product substitution recycle and reuse of materials) or treatment of the wastewater.

The Federal Safe Drinking Water Act (SDWA), which was enacted in 1974, gives the United States Environmental Protection Agency (EPA) the authority to set standards for contaminants in drinking water supplies. The SDWA was amended in 1986 and amended and reauthorized in 1996. For each of the 83 contaminants listed in the SDWA, the EPA sets a maximum contaminant level or treatment technique for contaminants in drinking water.

State Regulations

Energy

California Public Utility Commission

The California Public Utility Commission (PUC) regulates privately owned electric, telecommunications, natural gas, water and passenger transportation companies, in addition to household goods movers, and the safety of rail transit. Regarding underground gas and oil lines, the PUC passed GO 112-E, Rules Governing Design, Construction, Testing, Maintenance, and Operations of Utility Gas Gathering, Transmission, and Distribution Piping Systems.

Fire Services

Uniform Fire Code

The Uniform Fire Code contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The Code contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, include regulations for building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

Schools

California Code of Regulations

The California Code of Regulations, Title 5 Education Code, governs all aspects of education within the State.

Proposition 1A/Senate Bill 50

Proposition 1A/Senate Bill (SB) 50 (Chapter 407, Statutes of 1998) is a school construction measure authorizing the expenditure of State bonds totaling $9.2 billion through 2002, primarily for modernization and rehabilitation of older school facilities and construction of new school facilities. $2.5 billion is for higher education facilities and $6.7 billion is for K-12 facilities. Proposition 1A/SB 50 implemented significant fee reforms by amending the laws governing developer fees and school mitigation:

- Establishes the base (statutory) amount (indexed for inflation) of allowable developer fees at $1.93 per square foot for residential construction and $0.31 per square foot for commercial construction.
- Prohibits school districts, cities, and counties from imposing school impact mitigation fees or other requirements in excess of or in addition to those provided in the statute.
- Suspends for a period of at least eight years (2006) a series of court decisions allowing cities and counties to deny or condition development approvals on grounds of inadequate school facilities when acting on certain types of entitlements.

Proposition 1A/SB 50 prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "legislative or adjudicative act…involving …the planning, use, or development of real property" (Government Code 65996(b)). Additionally, a local agency cannot require participation in a Mello-Roos for school facilities; however, the statutory fee is reduced by the amount of any voluntary participation in a Mello-Roos. Satisfaction of the Proposition 1A/SB 50 statutory requirements by a developer is deemed to be "full and complete mitigation." The law identifies certain circumstances under which the statutory fee can be exceeded, including preparation and adoption of a "needs analysis," eligibility for State funding, and satisfaction of two of four requirements (post-January 1, 2000) identified in the law including year-round enrollment, general obligation bond measure on the ballot over the last four years that received 50 percent plus one of the votes cast, 20 percent of the classes in portable classrooms, or specified outstanding debt. Assuming a district qualifies for exceeding the statutory fee, the law establishes ultimate fee caps of 50 percent of costs where the State makes a 50 percent match, or 100 percent of costs where the State match is unavailable. District certification of payment of the applicable fee is required before the City or County can issue the building permit.

Proposition 55

Proposition 55 is a school construction measure passed in 2004 authorizing the sale of approximately $12.3 billion in bonds to fund qualified K-12 education facilities to relieve overcrowding and to repair older schools. Funds target areas of the greatest need and must be spent according to strict accountability measures. These bonds would be used only for eligible projects. Approximately ten billion dollars would be allocated to K-12 schools, with the remaining 2.3 billion allocated to higher education facilities.

Department of Education Standards

The California Department of Education published the Guide to School Site Analysis and Development to establish a valid technique for determining acreage for new school development. Rather than assigning a strict student/acreage ratio, this guide provides flexible formulas that permit each district to tailor its ratios as necessary to accommodate its individual conditions. The Department of Education also recommends that a site utilization study be prepared for the site, based on these formulas.

Local Regulations

City of Oakley General Plan

The following applicable goals and policies are from the Oakley 2020 General Plan *Growth Management Element:*

Wastewater Services

Goal 4.9 Assure the provision of sewer collection, treatment and disposal facilities that are adequate to meet the current and projected needs of existing and future residents.

Policy 4.9.1 Coordinate future development with the Ironhouse Sanitary District to ensure facilities are available for proper wastewater disposal.

Policy 4.9.2 Wastewater treatment should preserve, and to the extent feasible, enhance water quality and the natural environment.

Policy 4.9.4 Reduce the need for sewer system improvements by requiring new development to incorporate water conservation measures, which reduce flows into the sanitary sewer system.

Law Enforcement

Goal 4.5 Provide a high standard of police protection services for all citizens and properties throughout Oakley.

Policy 4.5.1 Police patrol beats shall be configured to assure minimum response times and efficient use of resources.

Policy 4.5.2 Incorporate police protection standards and requirements into the land use planning process.

Policy 4.5.3 Encourage public participation in crime prevention activities.

Policy 4.5.4 The city shall strive to provide sufficient personnel and capital facilities to ensure adequate police protection and appropriate response times.

Policy 4.5.5 Require that the Community Development Department refer, as appropriate, development proposals to the Police Department for review and comments.

Public Schools

Goal 4.6 Assure the provision of adequate primary and secondary schools in optimal locations to serve planned growth.

Policy 4.6.3 To the extent possible, new residential development, General Plan Amendments, or Rezoning shall, in the absence of the Planning Agency's satisfaction that there are overriding considerations (i.e., provision of low or moderate cost housing), be required to adequately mitigate impacts on primary and secondary school facilities.

Policy 4.6.5 Ensure that school facility impact fees are collected and shall work with developers and school districts to establish mitigation measures to ensure the availability of adequate school facilities.

Policy 4.6.6 Work with the school districts to consider alternative funding programs for school facility construction and provision of educational programs.

Policy 4.6.7 The hearing body reviewing residential projects shall consider the availability of educational facilities and impact on school capacities.

Policy 4.6.8 School site donation by developers may be encouraged through the use of density transfer or other appropriate land use alternatives.

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

General Parks and Recreation

Goal 7.1 Develop and maintain a system of parks, recreational facilities and open space areas to meet the needs of the City of Oakley.

Policy 7.1.1 Develop and maintain a park system that provides 5 acres of parkland per 1,000 residents.

Policy 7.1.2 Offer a wide variety of indoor and outdoor recreational opportunities in proximity to all residents of the city, enabling residents to participate in activities that will enhance the quality of life in the community.

Policy 7.1.3 Provide a full range of park and recreation facilities and programs for all community residents.

Policy 7.1.4 Provide recreation services that enhance the quality of life and meet the changing needs of residents.

Policy 7.1.5 Maintain and improve existing parks and develop new neighborhood and community parks in new residential neighborhoods as growth occurs.

Policy 7.1.7 Provide sufficient playfields within the City to accommodate both practice and competitive demands for organized and informal activity.

Policy 7.1.10 Consider multiple uses for open space land (i.e. land use buffer zones and green-ways for trails and linear parks, flood control basins for basin and park joint use, and school sites for neighborhood/community park joint use).

Policy 7.1.13 Consider multiple uses for open space land (i.e. land use buffer zones and green-ways for trails and linear parks, flood control basins for basin and park joint use, and school sites for neighborhood/community park joint use).

Policy 7.1.19 Require all development to dedicate parkland and pay in lieu and/or impact fees sufficient to meet the added demand for parkland facilities.

Neighborhood Parks, Playfields, and Recreation Centers

Goal 7.3 Provide a network of neighborhood parks to adequately service the various neighborhoods within the City of Oakley.

Policy 7.3.1 Provide area for neighborhood parks at a rate of 2 acres per 1,000 residents.

Policy 7.3.2 Where 2 acre parcels are not available, provide pocket parks and neighborhood parks at a rate of no less than 1 acre per 1,000 residents in older or in-fill neighborhoods.

Policy 7.3.3 Provide for 2 acres of developed neighborhood park per 1,000 residents from all new residential subdivisions through Land Dedication In-Lieu fees and/or Park Impact fees.

Policy 7.3.5 Focus on development of parks, not leftover residual space. Parks should not be used as buffers for surrounding developments nor used to separate buildings from the street. Views from surrounding streets should be considered in location of the park site and individual park features.

Policy 7.3.6 Front at least 50% of a park's frontage onto a public street. For perimeters not bound by a street, woodlands, creeks, agricultural uses or other significant open space features are desired over backyard fences. Where backyard fences are unavoidable, they should be screened through the use of trees and shrubs. Surrounding buildings should have windows and entries onto the park.

Policy 7.3.7 Design neighborhood parks to conserve natural features including creeks, heritage trees, and significant habitats. However, parkland dedicated for active recreation should not have biological and/or ecological restrictions on land usage.

Policy 7.3.8 Locate neighborhood parks no more than ¼ mile walking distance for most residents. Avoid major street crossing for most residents to access a neighborhood park.

Policy 7.3.9 Design and locate neighborhood parks based on a preferred size of 5 to 6 acres with a minimum size of 2 acres. The park size of 5 to 6 acres would allow for the incorporation of lawn play areas of sufficient size to accommodate informal field sports.

Policy 7.3.10 Suitability of potential neighborhood park sites to be determined by the following guidelines:

- Grade land to have appropriate slope to support active recreation activities.
- Eliminate or avoid biological or ecological restrictions on land usage.
- Design the ratio of park width and length to be no thinner than 1:3 to promote functional usages of park.

Policy 7.3.11 Design neighborhood parks to meet the specific needs of the neighborhood that it serves. Appropriate features include, but are not limited to:

- Multi-purpose lawn areas for informal play
- Picnic and gathering areas
- Small play structures, with separate structures for pre-school and school-aged children
- Small court game areas
- No parking facilities
- No permanent restroom facilities

Trails

Goal 7.5 Establish and maintain a comprehensive system of local and regional trails linking open space, neighborhood parks, community parks and recreation centers, libraries and schools, public transportation nodes, governmental buildings and commercial uses throughout Oakley to provide for pedestrian, equestrian and bicycle circulation.

Policy 7.5.1 Construct trails to provide transportation, exercise, and connection to nature and leisure opportunities for Oakley residents.

Policy 7.5.2 Construct short feeder trails to connect proposed developments to the regional trail system.

Policy 7.5.3 Provide easements to connect new neighborhoods to such amenities as parks, neighborhoods, and commercial centers of not less than 20 feet in width.

Policy 7.5.4 Provide public greenbelt corridors along major arterials of not less than 40 feet in width.

Policy 7.5.5 Provide easements along stream corridors of not less than 100 feet in length and 20 feet in width.

Policy 7.5.8 Construct trails, whenever possible, to be accessible to persons with disabilities.

Policy 7.5.9 Construct trails to provide for proper grading, drainage and erosion control.

Policy 7.5.13 Provide trail fences, directional signage, gates and bollards to protect the safety of trail users and adjacent properties. Provide equestrian trails to connect stables or ranchette development with regional trails.

Oakley Parks Master Plan

Parks planning for Oakley was initiated in 1988 when the Contra Costa County Board of Supervisors adopted the first Oakley Parks Master Plan. The 1988 plan attempted to establish goals and priorities for parks in the Oakley community. The 1988 plan was not utilized effectively and therefore development did not accomplish the outlined goals.

Following revision of the County General Plan in 1991, the Oakley Parks Master Plan was updated to maintain conformance with the County General Plan. The updated Oakley Parks Master Plan adopted in 1993, took a realistic look at parkland opportunities and strategies needed to achieve the goals of the community. The 1993 plan contained updated technical data, new maps, inventories of existing facilities, population projections and neighborhood analysis, as well as park standards and prototypes. The 1993 plan provided a guide to the planning and development of future parks and recreational facilities in the Oakley community, with implementation to occur as funds became available.

In 1999, the newly incorporated City of Oakley became responsible for the provision of local parks. At that time, the City initiated an update of the Oakley Parks and Recreation Master Plan. Information and policy direction compiled for the new Master Plan has provided the foundation for the Parks and Recreation Element of the Oakley 2020 General Plan.

The updated Oakley Parks and Recreation Master Plan was adopted in 2003. The new Parks and Recreation Master Plan dovetails with the City's General Plan and provides the detailed implementation programs needed to expand local public recreational opportunities, in conformance with the findings of the study.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with Appendix G of the CEQA Guidelines, an impact to the public services and utilities of the proposed project area would be considered significant if the proposed project would:

- Adversely impact the wastewater delivery system and increase the wastewater capacity beyond the ability of the wastewater treatment plant;
- Increase the demand for additional law enforcement or fire protection services beyond the ability of the existing departments to provide adequate service;
- Increase the total number of students beyond the capacity of the local school districts;
- Increase the demand for recreational uses beyond the existing or proposed parks and recreational facilities;
- Exceed the available provisions of local solid waste disposal/recycling agencies; and
- Increase the demand for electrical, gas, and phone services beyond their ability to provide service.

Method of Analysis

The following section evaluates the impacts of the proposed project on the existing public services that would occur if the project as currently proposed went into effect. Impact significance is determined by comparing project conditions to the existing conditions. The responsible agencies for each service have been contacted regarding the potential impacts on their facilities.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project.

4.13-1 Impacts related to adequate wastewater treatment and infrastructure capacity.

Wastewater treatment for the project is provided by Ironhouse Sanitary District (ISD). The ISD's new Wastewater Treatment Facility has a capacity of three million gallons per day (MGD). The current average dry weather flow into the plan is approximately 2.15 MGD. The base wastewater generation from the project's 510 residential units is illustrated in Table 4.13-2.

Table 4.13-2
Estimated Wastewater Generation for Proposed Project

Residential:	510 units x 225 gallons per dwelling unit	114,750 Gallons Per Day (GPD)
Ground Water Infiltration (High Groundwater):	120 acres x 300 gallons per day per acre	36,000 GPD
	Total:	**150,750 GPD (0.15 MGD)**

Figures are based upon 225 gallons-per-residential dwelling unit and 300 gallons per acre infiltration estimates.

The ISD Wastewater Treatment Facility has adequate capacity to handle the added 0.15 MGD. In addition, the project developer would pay applicable trunkline capacity and plant capacity fees, which would help fund current expansion.

Currently, properties connected to the system on Cypress Road pump their wastewater to the treatment plant through an existing 14-inch force main in Cypress Road. The force main connects to an existing 18-inch gravity main in SR 4 that flows to the treatment plant (See Figure 4.13-1).

Ironhouse Sanitation District is requiring a second force main, estimated at 14 inches, to serve the ultimate buildout of the City and ISD service boundary. This line may be constructed in Cypress Road or along the northern trail corridor adjacent to the CCWD/USBR right of way. The Gilbert Property project would construct trunk mains in the local streets to collect wastewater produced by the project. The wastewater would

flow by gravity to pump stations. This system would connect to the new 14-inch force main.

Because the ISD has adequate capacity to serve the proposed project and because the project would be required to pay fees should additional service be needed (i.e., connections, plant expansion and maintenance), the proposed project would have a ***less-than-significant*** impact on the wastewater system.

Mitigation Measure(s)
None required.

4.13-2 Adequate ratio of law enforcement personnel to residents.

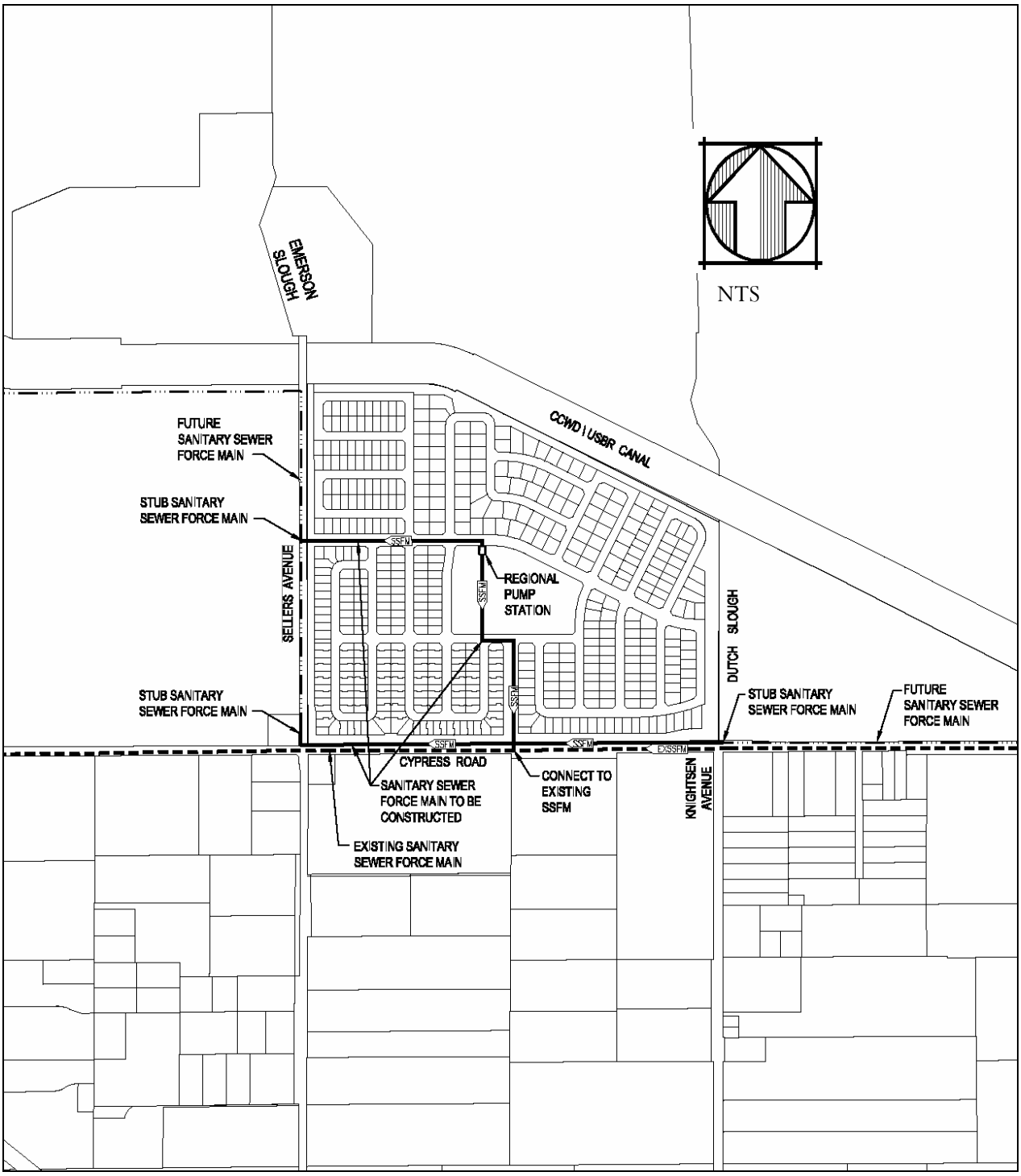
Table 5.3 of the 2001 *Oakley 2020 General Plan Background Report* indicates that Oakley had a ratio of officers to population of 0.74 officers per 1,000 residents (19 sworn staff divided by 25,625 persons). As a comparison, Antioch has a ratio of 1.24 officers per 1,000 residents (105 sworn staff divided by 84,500 persons) and Pittsburg has a ratio of 1.36 officers per 1,000 residents (74 sworn staff divided by 54,400 persons). The Oakley Police Department has limited ability to fund expanded services due to a limited budget.[8] Oakley is taking steps to secure dedicated future funding for police services. However, it is anticipated that the necessary revenue building may take several years. The City Manager and Police Chief continue to seek grants and other types of funding. The City is concerned that future growth in the Planning Area would make adequate coverage of the citizen's police protection needs more difficult.

Development of the proposed project would increase the population by an estimated 1,663 people (estimate based upon an estimated 510 single family residential units, utilizing the maximum persons-per-dwelling unit as estimated by the City of Oakley Community Development Department as set out on pages 10 through 17 of the Oakley 2020 General Plan) and result in a need for more law enforcement personnel. Therefore, the impact would be considered ***potentially significant***.

Mitigation Measure(s)
Implementation of the following mitigation measures would mitigate potential impacts to a *less-than-significant* level:

4.13-2 *Prior to the issuance of building permits, the applicant shall participate in the provision of funding to maintain police services through a special police services tax, similar to conditions placed on recent City subdivision approval, for the approval of the Community Development Department.*

Figure 4.13-1
Gilbert Property Master Infrastructure Sanitary Sewer



Source: Carlson Barbee & Gibson, Inc.

4.13-3 Adequate ratio of fire department personnel to residents.

The City of Oakley receives fire protection from the East Contra Costa Fire Prevention Department (ECCFPD). The ECCFPD was formed in 2002 as a consolidation of three fire districts, including the Oakley / Knightsen Fire Protection District which used to provide services to the City of Oakley. The district's eight stations currently serve a 250 square-mile area and maintain over 300 emergency staff. The district currently maintains a ratio of .61 sworn personnel per 1,000 citizens within the fire district.

The ECCFPD strives to achieve a standard five-minute response time 90 percent of the time (Contra Costa County General Plan 7-25). In 2003, the district received a total of 1483 emergency calls and maintained an average response time of six minutes 34 seconds.

Oakley is served by Fire Station 93, which is located at 215 Second Street within the City of Oakley. According to the Oakley General Plan, Station 93 maintains 37 firefighters. Additionally, a fire station site is planned for construction on East Cypress Road immediately east of Bethel Island Road.

Although the Oakley General Plan states that Station 93 was well situated to meet the service needs of the City of Oakley until the year 2004, the City has continued to grow and requires further protection to provide adequate coverage. The proposed project would contribute to the growth of the City of Oakley, thereby making adequate fire protection difficult. The proposed project would therefore have a ***potentially significant*** impact on fire protection personnel and/or equipment.

Mitigation Measure(s)
Implementation of Mitigation Measure 4.7-7(a) through (d) in Chapter 4.7, Hazards, of this Draft EIR would reduce the magnitude of impacts related to wildland fires. Implementation of the following mitigation measures would mitigate potential impacts to a *less-than-significant* level:

4.13-3(a) *Prior to the issuance of building permits, the project proponent shall pay a fair share of costs for new fire protection facilities and services, consistent with fire impact fees adopted by the City of Oakley.*

4.13-3(b) *Prior to approval of the building plans, the project applicant shall provide proof to the Community Development Department that fire flow requirements shall be met.*

4.13-4 Number of enrolled students exceeding capacity.

The four elementary schools in the Oakley Union Elementary School District are over capacity and the two middle schools are currently serving over 90 percent of their capacity.[9] In addition, future growth will further impact these schools. Delta Vista Middle

School was recently opened in August of 2001, dramatically increasing the middle school capacity to an acceptable level.

In late October of 2005, the District broke ground on construction of Iron House Elementary School to the west of the project area. Iron House Elementary, which is now open, will decrease the burden on existing schools, as well as provide classrooms for new developments.

The Liberty Union High School District is not as capacity-constrained as the Oakley Union Elementary District. However, both districts are currently operating above capacity.

The project applicant would be required per SB 50 and AB 16 to pay school impact fees. Levels of developer fee contribution are determined by the State Allocation Board and increase annually. Current State statutes dictate that school districts have the authority to levy fees (known as statutory or Level I fees) on new development at rates of $2.14 per square foot of new residential and $0.34 per square foot for commercial and industrial development. However, should the property owner not pay a fair-share of school costs, a ***potentially significant*** impact would result.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* impact.

4.13-4 *Prior to recordation of final map, the proposed project property owner shall pay appropriate SB50 and AB16 school impact fees.*

4.13-5 Adequate provision of parks and recreation space for new residents.

The anticipated growth of the City population as a result of the proposed development is the determining factor in the amount of park space that is required to be included in the proposed development. The Oakley 2020 General Plan requires six acres of parkland per every 1,000 residents (Oakley 2020 General Plan, p. 7-3).

Of the six required acres of parkland, three acres must be community parks, two acres must be neighborhood parks, and one acre must be open space and greenbelt (Oakley 2020 General Plan, p. 7-4). The Oakley 2020 General Plan (p. 10-17) uses a ratio of 3.26 residents per single-family dwelling unit and 2.13 residents per multifamily dwelling to estimate the population of the City of Oakley should all residential land in Oakley be built out to the maximum capacity. Using these numbers, the proposed project's maximum of 510 residential units would add a maximum of 1,501 residents to the City of Oakley. As a result, 9 acres of recreation space would be required (4.5 acres of community parks, 3 acres of neighborhood parks, and 1.5 acres of open space).

The project includes a 3.1-acre park for multi-use playfields located in the center of the community, plus a park surrounding the storm water pond located in the development.

In addition, the proposed project would contribute to the construction of trails along the north and south sides of Cypress Road, the east side of Sellers Avenue, the north edge of the property adjacent to the CCWD/USBR canal, and on certain local streets in the project site. This trail system would provide pedestrian access to and from the Delta Vista Middle School, the Iron House Elementary School, the neighborhood parks, ponds, and the proposed 55-acre City Park north of the CCWD/USBR canal. A trail would be located along the northern boundary of the development adjacent to the CCWD/USBR canal. This trail would connect to the trail being constructed by the adjacent Cypress Grove development to the west, which provides access to the existing Marsh Creek Trail and links to an existing regional trail system. The trail would include a pedestrian bridge spanning Dutch Slough between the Gilbert and Burroughs properties, and would be constructed to connect to Cypress Road at the eastern boundary of the project site.

It should be noted that the Gilbert Property, the Emerson Property and the Burroughs Property, the Wetlands Restoration Project site north of the Contra Costa Canal, and the 55-acre site immediately north of the Gilbert Property currently held in escrow for transfer to the City of Oakley for community park uses together originally formed an approximately 1,500-acre area (the M-8 Area,) the entirety of which was designated for mixed-use development in 1990 under the Contra Costa County General plan. In 1997, the County approved development agreements providing vested rights to develop 4,500 to 5,000 dwelling units throughout the entire M-8 Area.

In 2001, the original owner of the Gilbert Property, together with the owners of the Emerson and Burroughs Properties, the California Costal Conservancy, the National Heritage Institute, and the Conservation Fund, applied to Cal-Fed for a proposal to sell a 1,200 acre portion of the M-8 Area north of the Contra Costa Canal to the California Department of Water Resources (DWR) for the creation of the Dutch Slough Tidal marsh Restoration Project, despite the existing vested rights allowing development of that acreage. The property owners indicated that their intention to develop the remaining 300 acres of the M-8 Area south of the Canal, including the Gilbert Property.

In Fall 2002, the City, the property owners, the California Coastal Conservancy, the Natural Heritage Institute, and the Conservation Fund entered into several memoranda of understanding (MOUs) regarding the disposition of the M-8 Area and the future planning for the southern portion, including the Gilbert Property. The City and the property owners also entered into new development agreements that allowed for development of approximately 1,200 residential units on only 271 acres. This drastically reduced the number of units compared to the 4,500 to 5,000 allowed under the original County development Agreements, and resulted in clustering of development within a smaller area at a greater density. The MOU between the City and the property owners also provided that approximately 90 acres of the M-8 Area would be transferred to the City for development of a community park and public recreational facilities.

The preservation of these park and open space lands immediately north of the Project site reduced the ratio of parkland available to be provided on-site due to the clustered

approach to development within the M-8 Area described above. However, the MOUs provided that the property owners of the Gilbert, Emerson and Burroughs Properties would grant the City trail easements over approximately 10 acres of the Dutch Slough Tidal Marsh Restoration Project site conveyed to DWR. The amended development agreements entered into pursuant to the MOUs also require the developers of these properties to provide paved access to the Community Center site north of the Contra Costa canal transferred to the City. In addition, the MOUs require the California Coastal Conservancy, the natural Heritage Institute, and the Conservation Fund to collaborate with the City, DWR, and the public in a master planning process for the Restoration Project Site to balance wetland restoration objectives with public access and community recreational uses.

The land provided for parks in the proposed development is five acres. When including the acreage of the trails and parkland surrounding the storm water pond on the Gilbert property, the total parks and recreational space provided by the proposed project equates to approximately one third of the 9.98 acres required by the standards set forth in the Oakley 2020 General Plan documents.

The Public Facilities Impact Fee includes community parks, neighborhood parks and open space components. To complete the obligation of the project to dedicate and improve parkland, the project applicant would be required to pay the remaining park in-lieu fee to facilitate the provision of the community park facilities to be located north of the CCWD/USBR canal. However, should the fee not be paid, a ***potentially significant*** impact would result.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

4.13-5 *Prior to recordation of final map, the proposed project property owner shall pay the remaining park in-lieu fee to facilitate the provision of the community park facilities to be located north of the CCWD/USBR canal.*

4.13-6 Need for additional waste disposal/recycling services.

Currently, the residents of the City of Oakley privately contract with Oakley Disposal Service for solid waste disposal and recycling services. New residents would also contract with Oakley Disposal Service and pay the appropriate fees. Oakley Disposal provides both solid waste disposal service and recycling services. Solid waste collected within City limits is taken to the Pittsburg Recycling Center and Transfer Station for separation and all non-recyclable waste is hauled to the Potrero Hills Landfill.

The Potrero Hills Landfill is two miles southeast of Suisun City. The facility is permitted to accept waste until 2015 with a potential expansion for an additional fifty years (until 2065).

The curbside recyclable material collected is transported to the Concord Facility for recycling, which is managed by Mount Diablo Recycling, an affiliate of Oakley Disposal Services. The recyclable materials are separated and transported to the appropriate market.

The addition of new residents resulting from development of the proposed housing units would necessitate increased waste disposal and recycling personnel and equipment. However, because the Oakley Disposal Service, the Recycling Center, and the Petrero Hills Landfill have adequate capacity to serve the project, a private company serves the City, and the new residents would pay fees for the waste service, the addition of new residents would be accommodated by the new fees. Therefore, the proposed project would have a ***less-than-significant*** impact on solid waste disposal and recycling.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region.

4.13-7 Cumulative impacts to public services and facilities.

The proposed project would increase the demand for public services and facilities, but would not create cumulative impacts on most of the public services because typically, each project pays for required services, thereby fully mitigating the impacts on public services.

However, the Ironhouse Sanitary District has indicated that flow from the Gilbert Property in concert with the additional services that would be required by the neighboring Burroughs and Emerson properties when developed, combine with flows from East Cypress Corridor and Bethel Island would cumulatively necessitate upsizing the current 18-inch trunk sewer in SR 4, which conveys flows to the wastewater treatment plant, to a 36-inch trunk sewer. The project would thus result in ***potentially significant*** cumulative impacts to wastewater facilities.

Mitigation Measure(s)
Implementation of the following measure would reduce cumulative impacts to wastewater facilities to a *less-than-significant* level.

4.13-7 *Prior to the issuance of building permits, the project proponent shall pay a fair share of costs for new wastewater collection facilities, as determined by the Community Development Department and Ironhouse Sanitary District.*

Endnotes

[1] City of Oakley. *Oakley 2020 General Plan Background Report*. September, 2001
[2] Contra Costa County. *Contra Costa County General Plan.* 1996
[3] Contra Costa County. *Contra Costa County General Plan Draft EIR.* September 1990.
[4] City of Oakley. *City of Oakley 2020 General Plan*. August 30, 2002.
[5] City of Oakley.*City of Oakley 2020 General Plan Draft EIR*. September 2002.
[6] Association of Bay Area Governments. *City of Oakley Census 2000*. http://census.abag.ca.gov/cities/ Oakley.htm.
[7] City of Oakley. *City of Oakley 2020 General Plan.* August 30, 2002. p. 7-15.
[8] City of Oakley. *City of Oakley General Plan EIR*. September 2002. p. 3-91,92.
[9] City of Oakley. *City of Oakley 2020 General Plan EIR*. September 2002. p. 3-93.

5. ALTERNATIVES ANALYSIS

5. ALTERNATIVES ANALYSIS

INTRODUCTION

The primary intent of the alternatives evaluation in an EIR, as stated in Section 15126.6(a) of the CEQA Guidelines, is to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives."

The following are the objectives for the project:

- Implement the City's General Plan goals by providing for residential development for which adequate services can be provided in a timely manner.

- Create an inviting village setting comprised of distinct, yet integrated neighborhoods, with a central park, all of which would provide a desirable small town atmosphere and attractive lifestyle choice for residents. Facilitate the interaction of neighborhood residents through the provision of attractive parks and a network of trails.

- Provide the infrastructure necessary for the delivery of safe and reliable public services including water, sewer, drainage, and roadway infrastructure improvements that enhance the entire Oakley community.

- Provide safe, convenient transportation access for pedestrians, bicyclists, transit riders, and motorists between parks and near-by schools, as well as to existing and future transit corridors, using street designs that balance the needs of pedestrians and motorists. Target pedestrian orientation as a key element within the development and facilitate access to potential nearby future transit corridors.

- Create an economically viable project that provides a fair share contribution of infrastructure to the community through the payment of fees and/or construction of required capital improvements, while creating revenue through the sale of housing of the types and styles that current and future citizens of Oakley desire.

- Provide a variety of desirable housing types and densities consistent with City policies that meet the housing needs of existing and future Oakley residents. Provide a mix of housing choices and affordability levels interspersed among the neighborhoods so as to create ongoing housing opportunities for local school districts, and/or City health and safety personnel.

- Draw upon the agricultural character of Oakley and the adjacent Delta area in establishing the future character of the development projects within the Oakley area.

- Develop the project areas consistent with land uses and policies defined in the City of Oakley 2020 General Plan and the development agreements.

- Advance the City's vision for Cypress Corridor by incorporating design principles and including a variety of architectural styles and home sizes that create a neighborhood with attractive land plans and that serve a variety of households.

- Provide access to the Wetlands restoration Project areas to the north of the proposed project site.

- Provide for increased CCWD canal safety.

The CEQA Guidelines further state that "the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." The feasibility of an alternative may be determined based on a variety of factors including, but not limited to, site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and site accessibility and control.

CEQA provides the following guidelines for discussing alternatives to a proposed project:

- An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (CEQA Guidelines Section15126.6(a)).

- Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly (CEQA Guidelines Section15126.6(b)).

- The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination [. . .] Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts (CEQA Guidelines Section15126.6(c)).

- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison (CEQA Guidelines Section15126.6(d)).

- The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decisionmakers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (CEQA Guidelines Section15126.6(e)(1)).

- If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section15126.6(e)(2)).

In addition, Section 15126.6 (d) of the CEQA Guidelines states that "If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."

Selection of Alternatives

The requirement that an EIR evaluate alternatives to the proposed project or alternatives to the location of the proposed project is a broad one; the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained while reducing the magnitude of, or avoiding, the environmental impacts of the proposed project. Alternatives that are included and evaluated in the EIR must be feasible alternatives. However, the Public Resources Code and the CEQA Guidelines require the EIR to "set forth only those alternatives necessary to permit a reasoned choice." The CEQA Guidelines provide a definition for "a range of reasonable alternatives" and thus limit the number and type of alternatives that may need to be evaluated in a given EIR. According to the CEQA Guidelines Section 15126.6[f]:

> The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determined could feasibly attain most of the basic objectives of the project.

First and foremost, alternatives in an EIR must be feasible. In the context of CEQA Public Resources Code Section 21061.1, "feasible" is defined as:

> ...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.

Finally, an EIR is not required to analyze alternatives when the effects of the alternative "cannot be reasonably ascertained and whose implementation is remote and speculative."

Alternatives Considered But Dismissed

Off-Site Alternative

One of the requirements of CEQA is the assessment of the comparable environmental impacts of alternative locations for the "project." Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR. Although off-site locations may exist that would be suitable for the proposed project, these off-site locations are not owned or controlled by the applicants. In addition, impacts related to traffic and associated air and noise would remain on any site, although their extent cannot be determined. The Off-Site Alternative is thus dismissed from further analysis.

Alternatives Considered in this EIR

For this EIR, the alternatives considered include the following:

- No Project/No Development Alternative;
- Minimum Density Clustered Development Alternative; and
- Reduced Intensity Development Alternative.

It should be noted the project applicant is vested with the right to develop the proposed project consistent with the densities included in the existing General Plan, Memoranda of Understanding, and Development Agreement.

A matrix of the impacts of these alternatives relative to the alternatives of the proposed project is presented at the end of the chapter in Table 5-1.

No Project/No Development Alternative

Section 15126.6(e)(1) of the State CEQA Guidelines requires that a "no project alternative" be evaluated in comparison to the proposed project. Because the proposed project is not a revision of an existing land use or regulatory plan or policy, the No Project Alternative in this case is an alternative under which the project would not be developed. This non-development alternative is characterized primarily by the benefits of continued open space in the project area. While this alternative would not meet project objectives, and would be legally infeasible due to the vested rights to develop the project area that the project applicant has under the development agreement, CEQA requires that the No project/No Development Alternative be addressed.

Aesthetics

The No Project/No Development Alternative would not alter the existing aesthetic characteristics of the project site. Therefore, the No Project/No Development Alternative would have no impact on aesthetics.

Land Use and Agriculture

Under the No Project/No Development Alternative, the project site would remain an undeveloped area of the City of Oakley; therefore, impacts related to consumption of use of raw land would be eliminated. However, the Land Uses of the project site would remain Single Family Low, Single Family Medium, Multi-Family High, and Commercial. These land use designations, which are included in the City of Oakley General Plan 2020 Land Use Diagram (Figure 2-2 of the General Plan) are inconsistent with current land uses, which include open space and light agriculture. Therefore, the No Project/No Development Alternative would have more impacts to the current General Plan than the proposed project.

The project area is currently open land being utilized for agricultural proposes, including cattle grazing. In the No Project/No Development Alternative, the project site would remain an undeveloped area of the City of Oakley, and the impacts related to the loss of existing agricultural resources would be eliminated, though it should be noted that project-related impacts associated with agricultural resources were found to be less than significant. Therefore, overall impacts to land use and agricultural would be roughly equal.

Traffic and Circulation

The No Project/No Development Alternative would not cause a traffic increase in the surrounding areas because homes would not be constructed under the alternative. Therefore, unlike the proposed project, the No Project/No Development Alternative would have no impacts to traffic.

Air Quality

The proposed project would create air quality impacts from both the construction of homes and the additional vehicles from residents of the project. Under the No Project/No Development Alternative, homes associated with the buildout of the Gilbert Property project would not be constructed; therefore, construction-related air quality impacts would not occur. The number of vehicles would also not increase and operational air quality impacts.

Noise

The proposed project would cause an increase in noise levels due to construction of homes and intersection traffic. The noise impacts would not exist under the No Project/No Development Alternative. Therefore, this alternative would maintain ambient noise levels at their present level and result in fewer impacts when compared to the proposed project.

Hazards

Under the No Project/No Development Alternative, the use of the project site would not change. The project area has been used for grazing and light agricultural use for decades, and the presence of pesticides would remain. However, the project site is currently vacant land and few sensitive receptors exist in the project area. Therefore, compared to the proposed project, the No Project/No Development Alternative would have a lesser impact.

Biological Resources

The No Project/No Development Alternative would not result in development of the project site and would thus not disturb the existing biological resources. The No Project/No Development Alternative would, therefore, have fewer impacts than the proposed project.

Geology and Soils

The existing geological and soil conditions under the No Project/No Development Alternative would not change. Because this alternative would not result in any construction on the site, impacts related to geology would not occur.

Mineral Resources

Existing on-site conditions relating to mineral resource would not change under the No Project/No Development Alternative. The No Project/No Development Alternative would not result in any construction on the site or impacts related to existing mineral resources; therefore, this alternative would have fewer potential impacts to mineral resources than the proposed project.

Historical and Cultural Resources

The No Project/No Development Alternative would cause fewer impacts to cultural resources than the proposed project because the cultural resources would not be disturbed by construction activities. Therefore, although cultural resources could be disturbed by the grazing activities, the impacts would be reduced compared to the proposed project.

Hydrology, Water Supply and Water Quality

The No Project/No Development Alternative would not result in construction that could change the existing drainage pattern for the project area. In addition, the No Project/No Development Alternative would not generate urban runoff from impervious surfaces such as roadways and rooftops that would affect water quality in the area, as would the proposed project. Additionally, this alternative would not include the addition of any new construction and would have no impacts in regard to increased demand on existing water supplies. Therefore, compared to the proposed project, the No Project/No Development alternative would not result in impacts on hydrology and water quality.

Public Services and Utilities

The No Project/No Development Alternative would not result in the construction of new homes that would require additional public services and utilities in the project area. Therefore, this alternative would not impact public services and utilities, as would the proposed project.

Minimum Density Clustered Development Alternative

The Minimum Density Clustered Development Alternative would reduce the total number of units on the proposed project site to 271 total units, the lowest density allowable by the General Plan designation for the proposed project site. The park uses would remain the same under this alternative. However, the residences would be clustered into denser groupings, creating opportunities to avoid certain resources as well as creating additional open space and greenbelt areas.

Aesthetics

The Minimum Density Clustered Development Alternative would include the development of the majority of the project area; however, the Minimum Density Clustered Development Alternative would result in more total open space. The increase in open space associated with this alternative would thus result in a reduced impact to the existing visual character of the project site in relation to the proposed project.

Land Use and Agriculture

The Minimum Density Clustered Development Alternative would include the development of approximately 271 units and on land that is currently zoned for Commercial, Single Family Low Density, Single Family Medium Density, and Multi-Family High Density. The Minimum Density Clustered Development Alternative would create more open space on the proposed project site by clustering the development into higher density areas. In addition to land use compatibility issues raised within Land Use and Agriculture chapter of the EIR, the Minimum Density Clustered Development Alternative may require more intense development than is currently allowed by the existing development densities as set forth in the City of Oakley 2020 General Plan Update and therefore would have a greater impact to land use policies than the proposed project.

The Minimum Density Clustered Development Alternative would not reduce the loss of agricultural land. The total loss of agricultural land would remain. Additionally, the compatibility issues raised by the proposed project would be identical under this alternative. Therefore, the Minimum Density Clustered Development Alternative would be considered to have the same impacts as the proposed project.

Transportation

The Minimum Density Clustered Development Alternative would include the development of the fewer residences than the proposed project. Therefore, the Minimum Density Clustered

Development Alternative would result in the generation of a fewer total number of vehicle trips and would have the fewer impacts to the project site and surrounding area as the proposed project.

Air Quality

The buildout of the Minimum Density Clustered Development Alternative would result in fewer total residences and vehicle trips than the proposed project. Therefore, impacts related to both regional and local air quality during both the construction and operational stages would be the fewer than those associated with the proposed project.

Noise

The buildout of the Minimum Density Clustered Development Alternative would result in the fewer total residences and vehicle trips as the proposed project. Although the Minimum Density Clustered Development Alternative could result in an increase in the housing density associated with the project at some locations, noise associated with traffic and land uses would be expected to decrease due to the decrease in total residences on the project site. Therefore, the Minimum Density Clustered Development Alternative would be expected to have fewer impacts as the proposed project with regard to noise impacts.

Hazards

The Minimum Density Clustered Development Alternative would result in the addition of the fewer total residents and residences to the Gilbert Property as the proposed project. The Minimum Density Clustered Development Alternative would introduce fewer sensitive receptors to close proximity with existing or potential hazardous materials, such as asbestos from existing structures, existing natural gas mines and potential soil contamination. Therefore, the alternative would have fewer impacts to that of the proposed project in regards to hazards and hazardous materials.

Biological Resources

The Minimum Density Clustered Development Alternative would result in an increase in open space. When compared to the proposed project, the addition of open space associated with this alternative would result in fewer detrimental impacts to the Gilbert Property in regard to biological resources because sensitive resources, such as special-status species habitats, could be avoided through clustered site design. Therefore, the implementation of the Minimum Density Clustered Development Alternative would result in fewer total impacts to biological resources.

Geology and Soils

The geological impacts generated from the development of the project site under the Minimum Density Clustered Development Alternative would be similar to those generated by the proposed project. Although the alternative would result in a decrease in total developed land that would be affected by geological impacts, the residences would still be subject to liquefaction and soil

erosion; therefore, development of the alternative would have similar impacts as compared to the proposed project.

Mineral Resources

The Minimum Density Clustered Development Alternative would allow for more open space on the proposed project area and therefore a decrease in effects to known or potential mineral resources on the proposed project site. Additionally, this alternative could potentially avoid development around the existing natural gas wells, which would further decrease impacts.

Historical and Cultural Resources

Though the total acreage developed would be reduced under the Minimum Density Clustered Development Alternative, development would still occur on the project site. Because less land would be graded under this alternative, the potential for uncovering currently unknown and undiscovered cultural resources on the project site would be reduced. Therefore, the Minimum Density Clustered Development Alternative would have fewer total impacts regarding cultural resources than the proposed project.

Hydrology, Water Supply and Water Quality

The Minimum Density Clustered Development Alternative would develop fewer residential units on the project site compared to the proposed project and would also result in more open land and fewer impervious surfaces such as roadways and hardscaping. The decrease in impervious surfaces on the site would reduce the potential impacts to the stormwater drainage system and ultimately water quality. Additionally, this alternative would include the development of fewer residences than the proposed project and would have a fewer impacts with regard to water supply. Therefore, while water quality impacts may be reduced, impacts would only be fewer than the proposed project.

Public Services and Utilities

The implementation of the Minimum Density Clustered Development Alternative would result in the same total number of residents as the proposed project. Therefore, a change in the need for public services and utilities would not be expected. However, the Minimum Density Clustered Development Alternative would result in an increase of open space requiring increased maintenance compared to the proposed project. Therefore, impacts associated with public services and utilities would increase.

<u>Reduced Intensity Development Alternative</u>

The Reduced Intensity Development Alternative would reduce the number of units to the maximum allowed by the General Plan designation for the proposed project site. Therefore, the overall number of houses on the project site would be reduced from 510 to 454. Under this alternative, the land used would be the same as under the proposed project, with the residential

uses on larger lots. The park would be located in the same areas identified on the proposed Land Use Plan.

Aesthetics

The development of the 120-acre project site would impact the visual character of the project site, despite the reduction of residences from 510 to 454. The Reduced Intensity Development Alternative may reduce the level of impact on the project site, but the visual character of the site would still be permanently altered. Additionally, the amount of light and glare produced would be less than that of the proposed project due to the fewer number of residential units that would emit light and glare. Therefore, the Reduced Intensity Development Alternative would result in a lessened impact than the proposed project, but an impact nonetheless.

Land Use and Agriculture

The Reduced Intensity Development Alternative would not avoid the development of residential and commercial properties on land designated in the City of Oakley 2020 General plan for Commercial, Single Family Low Density, Single Family Medium Density and Multi-Family High Density. The total loss of existing open space and agricultural land would remain. Additionally, the compatibility issues raised under the proposed project would be identical under this alternative, and the density would not meet the requirements of the General Plan. Therefore, the Reduced Intensity Development Alternative would be considered to have the same impacts as the proposed project.

The Reduced Intensity Development Alternative would not reduce the loss of agricultural land. The total loss of agricultural land would remain. Additionally, the compatibility issues raised under the proposed project would be identical under this alternative. Therefore, the Reduced Intensity Development Alternative would be considered to have the same impacts as the proposed project.

Transportation

Traffic levels generated from the Reduced Intensity Development Alternative would be reduced overall to and from the project site as compared to the proposed project. The lower level of residential units within the project site would reduce the level of traffic in the area. However, the development of 454 residential units would still increase the traffic level above existing conditions. Therefore, this alternative would still result in an impact on traffic; however, the impact would be reduced in comparison to the proposed project.

Air Quality

The Reduced Intensity Development Alternative would reduce the impacts compared to the proposed project regarding air quality. The Reduced Intensity Development Alternative would reduce the overall number of residential units proposed by the project to 454, but would still result in development of the undeveloped project site. The reduction of traffic circulation within the project would result in a decrease in vehicle emissions. Additionally, this alternative would

include less construction and a decrease in total temporary increases in emissions associated with construction equipment. The impacts related to air quality would not be considered as substantial as the proposed project, but would still be considered significant.

Noise

The noise impacts from the Reduced Intensity Development Alternative would be reduced in relation to the proposed project. The Reduced Intensity Development Alternative would develop 454 residential units on the project site where none currently exist, thereby increasing the potential sensitive receptors in the project area. However, the total number of sensitive receptors would be reduced under the Reduced Intensity Development Alternative as compared to the proposed project. Additionally, because the total number of units and total time and equipment needed for construction would be decreased when compared to the proposed project, this alternative would result in a fewer total construction-related noise impacts. Therefore, the noise impacts under the Reduced Intensity Development Alternative would be less than that of the proposed project.

Hazards

Under the Reduced Intensity Development Alternative, sensitive receptors would still be introduced into the area where few currently exist. However, the overall number of residential units within the project site would be reduced, as would impacts related to exposure to potential hazards regarding existing gas wells and potential existing hazards such as past oil spills and asbestos. Therefore, the Reduced Intensity Development Alternative would reduce impacts compared to the proposed project.

Biological Resources

The Reduced Intensity Development Alternative would reduce the amount of housing units proposed for the project site. However, development on the site could still potentially disturb any sensitive species on the project site. Therefore, the Reduced Intensity Development Alternative would create impacts comparable to the proposed project.

Geology and Soils

The geological impacts generated from the development of the project site under the Reduced Intensity Development Alternative would be similar to those generated by the proposed project, despite the reduced amount of residential units constructed. Although the Reduced Intensity Development Alternative would result in fewer residences that would be affected by geological impacts, the residences would still be subject to liquefaction and soil erosion; therefore, development of the Reduced Intensity Development Alternative would have similar impacts as compared to the proposed project.

Mineral Resources

Impacts related to on-site mineral resources as a result of the development of the proposed

project would be decreased under the Reduced Intensity Development Alternative. The Reduced Intensity Development Alternative would decrease the total area developed by the proposed project and result in fewer sensitive receptors added to the project site. However, the land would still be under private ownership, thereby limiting access to mineral resources. Therefore, this alternative would have a similar impact on existing mineral resources, including the natural gas wells that exist on the proposed project site.

Historical and Cultural Resources

Though the number of housing units would be reduced under the Reduced Intensity Development Alternative, development would still occur on the project site, impacting the known cultural resource, Iron House School and potentially uncovering additional resources as development occurs. However, this alternative would likely include less grading with the fewer site pads required for residential units. Less grading of the site would be expected to disturb fewer cultural resources. Therefore, the Reduced Intensity Development Alternative would have fewer impacts than the proposed project.

Hydrology, Water Supply and Water Quality

The Reduced Intensity Development Alternative would develop fewer residential units on the project site compared to the proposed project. Fewer impervious surfaces on the site would reduce the potential impacts to the stormwater drainage system and ultimately water quality. Additionally, this alternative would result in less demand for water supply compared to the proposed project. Therefore, the Reduced Intensity Development Alternative would be expected to reduce impacts compared to the proposed project.

Public Services and Utilities

Due to the reduced number of housing units, the Reduced Intensity Development Alternative would require a reduced amount of services compared to the proposed project. However, the Reduced Intensity Development Alternative would still require services where none are currently needed. Therefore, the development of the Reduced Intensity Development Alternative would reduce the public services and utilities impacts as compared to the impacts that would be generated from the development of the proposed project.

Environmentally Superior Alternative

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. Section 15126(e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated and states that "if the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

Designating a superior alternative depends in large part on what environmental effects one considers most important. This EIR does not presume to make this determination; rather, the determinations of which impacts are more important, are left to the reader and the decision

makers. Finally, it should be noted that the environmental considerations are one portion of the factors that must be considered by the public and the decision makers in deliberations on the proposed project and the alternatives. Other factors of importance include urban design, economics, social factors, and fiscal considerations.

For this project, the environmentally superior alternative would result in development of the site under the Minimum Density Clustered Development Alternative. The No Project Alternative was not selected as the environmentally superior alternative because it would be legally infeasible due to the project applicant's vested rights under the development agreement. Under the Minimum Density Clustered Development Alternative, impacts to aesthetics would be reduced because fewer housing units would be developed, resulting in less introduction of light and glare to the area. Because fewer residents would occupy the area, fewer vehicle trips would be made, thereby reducing traffic, air quality, and noise impacts. In addition, hydrology, water supply, and water quality impacts would be reduced under the Minimum Density Clustered Development Alternative because fewer impervious surfaces would be created compared to the proposed project due to the fewer number of rooftops. Hazards would also be reduced because fewer people would be exposed to potential hazards such as pesticides and asbestos. Public services and utilities impacts would be reduced compared to the proposed project because not as much infrastructure and public service demand would be generated due to the fewer number of housing units under the Minimum Density Clustered Development Alternative. Finally, impacts to cultural resources would be reduced due to the fewer number of site pads graded and the decreased risk of cultural resource disturbance. Thus, although impacts would still occur related to land use and agriculture, biological resources, and geology, the Minimum Density Clustered Development Alternative is considered the environmentally superior alternative.

Table 5-1
Environmental Impacts

Resource Area	Proposed Project (PP)	No Project/ No Development Alternative	Clustered Development Alternative	Reduced Intensity Alternative
Aesthetics	Less-Than-Significant With Mitigation	None	Fewer	Fewer
Land Use and Agriculture	Less-Than-Significant	Equal	Equal	Equal
Transportation and Circulation	Less-Than-Significant With Mitigation	None	Fewer	Fewer
Air Quality	Significant and Unavoidable	None	Fewer	Fewer
Noise	Less-Than-Significant With Mitigation	None	Fewer	Fewer
Hazards	Less-Than-Significant With Mitigation	Fewer	Fewer	Fewer
Biological Resources	Less-Than-Significant With Mitigation	Fewer	Fewer	Equal
Geology	Less-Than-Significant With Mitigation	None	Equal	Equal
Mineral Resources	Less-Than-Significant With Mitigation	None	Fewer	Equal
Historical and Cultural Resources	Less-Than-Significant With Mitigation	None	Fewer	Fewer
Hydrology, Water Supply and Water Quality	Less-Than-Significant With Mitigation	None	Fewer	Fewer
Public Services and Utilities	Less-Than-Significant With Mitigation	None	Greater	Fewer

No Impact = "None" Less Than PP = "Less" Equal to PP = "Equal" Greater Than PP = "Greater"

6. STATUTORILY REQUIRED SECTIONS

6. STATUTORILY REQUIRED SECTIONS

6.0 INTRODUCTION

The Statutorily Required Sections chapter includes brief discussions regarding those topics that are required to be included in an EIR, pursuant to CEQA Guidelines Section 15126.2. The chapter includes a discussion of the proposed project's potential to induce economic or population growth; in addition, the chapter includes lists of significant irreversible environmental changes, cumulative impacts, and significant and unavoidable impacts which would be caused by the proposed project.

6.1 GROWTH-INDUCING IMPACTS

An EIR must discuss the ways in which a proposed project could foster economic or population growth in the vicinity of the project and how that growth would, in turn, affect the surrounding environment (See CEQA Guidelines Section15126.2[d]). Growth can be induced in a number of ways, including through the elimination of obstacles to growth, or through the stimulation of economic activity within the region. The discussion of the removal of obstacles to growth relates directly to the removal of infrastructure limitations or regulatory constraints that could result in growth unforeseen at the time of project approval.

Several issues must be considered when assessing the growth-inducing effects of development plans, such as the proposed projects. These include the following:

> **Elimination of Obstacles to Growth:** The extent to which infrastructure capacity provided to accommodate the proposed projects would allow additional development in surrounding areas; and
>
> **Economic Effects:** The extent to which development of the proposed projects could cause increased activity in the local or regional economy.

The elimination of either physical or regulatory obstacles to growth is considered to be a growth-inducing effect. A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines, into areas that would not be currently provided with these services, would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth.

As of the 2000 U.S. Census, the population of the City of Oakley was 25,619. Development of the proposed project would include 510 single-family residential units on the Gilbert Property. Utilizing the maximum persons-per-dwelling unit as estimated by the City of Oakley Community Development Department as set out in the Oakley 2020 General Plan (p. 10-17), the buildout of the entire proposed project would result in an estimated increase of 1,633 residents to the City of

Oakley. The project would therefore result in a substantial increase in the population of the City of Oakley.

Additionally, a regional pump would be located on the neighboring Emerson property with a lift station on the Gilbert property. The sewer lines for the proposed project connect to the Cypress Grove project to the west and would be intended to serve future adjacent developments to the south of the project site along Machado Lane, Sellers Avenue, Franklin Lane and Knightsen Avenue. Thus, because the proposed project would include the development of wastewater infrastructure that would be designed to serve future adjacent developments, the project could be considered growth inducing.

However, the planning decision to convert the proposed project site for development purposes was made in 1990 when Contra Costa County certified a countywide General Plan EIR and adopted the 1990-2005 General Plan Update redesignating the project site for development as part of an approximate 1,500-acre area from Agriculture to Mixed Use (M-8) development within the County's Urban Limit Line. In 1997, the County for CEQA purposes relied upon the General Plan EIR and approved development agreements providing vested rights to develop the M-8 area. Following annexation of the M-8 area, which included the project site, to the City of Oakley in 1999, the City prepared and certified the initial Oakley General Plan EIR. Thus the potential growth-inducing impacts of the proposed project have been assumed in the County and City's land use planning for nearly two decades, and the potential additional growth that the proposed project would facilitate has been analyzed as part of the General Plan EIR.

6.2 CUMULATIVE IMPACTS

An EIR must discuss the "cumulative impacts" of a project when its incremental effect will be cumulatively considerable. This means that the incremental effects of the individual project would be considerable when viewed in connection with the effects of other current projects, and the effects of probable future projects (Section 15065[c]).

CEQA Guidelines Section 15355 defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." This Section further states "Individual effects may be changes resulting from a single project or a number of separate projects." Additionally, "The cumulative impact from several projects is [defined as] the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."

Section 15130(a)(3) states also that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

Finally, Section 15130(b) indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses, that it should reflect the severity of the impacts and

their likelihood of occurrence, and that it should be focused, practical, and reasonable. To be adequate, a discussion of cumulative effects must include the following elements:

(1) Either (a) a list of past, present and probable future projects, including, if necessary, those outside the agency's control, or (b) a summary of projections contained in an adopted general plan or related planning document, or in a prior certified EIR, which described or evaluated regional or area-wide conditions contributing to the cumulative impact, provide that such documents are reference and made available for public inspection at a specified location;

(2) A summary of the individual projects' environmental effects, with specific reference to additional information and stating where such information is available; and

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(3) A reasonable analysis of all of the relevant projects' cumulative impacts, with an examination of reasonable, feasible options for mitigating or avoiding the project's contribution to such effects (Section 15130(b)).

For some projects, the only feasible mitigation measures will involve the adoption of ordinances or regulations, rather than the imposition of conditions on a project-by-project basis (Section 15130[c]).

The cumulative analysis for this EIR is based on and tiered from the City of Oakley 2020 General Plan EIR and the list of past, present and probable future projects found in Table 6-1. The proposed Gilbert Property project, in conjunction with development in the vicinity of the project site and within the region, would contribute to cumulative environmental impacts.

Table 6-1
Gilbert Property Cumulative Project List

Project	Land Use	Sq. Ft./Units	Status
City of Oakley			
Emerson Project	Residential/Commercial	618 units	N/A
Burroughs Project	Residential	174 units	N/A
5900 Main Street	Commercial/Automotive	N/A	N/A
Delta Family Bible	Church	N/A	N/A

(*Continued on next page)*

Table 6.1
Gilbert Property Cumulative Project List (Continued)

Project	Land Use	Sq. Ft./Units	Status
Little Party Animals	N/A	N/A	N/A
A-Secure Storage	Commercial	N/A	N/A
Wendy's	Commercial/Restaurant	N/A	N/A
Pompei Nursery	Commercial	N/A	N/A
Arco AM/PM Minimart	Commercial	N/A	N/A
Safeway Grocery Store	Commercial	85,000 sq. ft.	Approved – April 2004
Romano's Vintners Square	Commercial	N/A	N/A
Retail and Drive Thru Restaurant (Popeye's)	Commercial	6,000 sq. ft.	Approved – November 2004
RV Sales and Parts	Commercial/Retail	N/A	N/A
Pump It Up Party Store	Commercial/Retail	N/A	N/A
Smog and Repair Shop	Commercial/Automotive	N/A	Approved – July 2004
Les Schwab Tires	Commercial/Tire Store	N/A	N/A
Rasooly Industrial Complex	N/A	N/A	N/A
New Lifeline World Ministries	Church	N/A	N/A
Immanuel Baptist Church	Church	19,218 sq. ft.	N/A
YMCA adjacent to O'Hara Park Middle School	N/A	8,012 sq. ft.	Completed
Big Break Regional Park	N/A	N/A	Under Construction
Main Street Retail (Equus Group)	Retail	10,740 sq. ft.	Under Construction
Caffino	N/A	112 sq. ft.	Approved

(*Continued on next page)*

Table 6-1
Gilbert Property Cumulative Project List (Continued)

Project	Land Use	Sq. Ft./Units	Status
Cellular Tower Expansion	N/A	N/A	Approved
Paul's Automotive	Commercial/Automotive	10,125 sq. ft. + existing bldgs	Approved
Hardcastle RV & Storage Center	Commercial	5,321 sq. ft. on 5.27 ac	Approved
Oakley Village Commercial Center	Commercial/Retail	6,700 s. f. of Retail	Approved
Delta Community Church	Church	4 modular bldgs (3,840 sq. ft.)	Application Received
Acme Street Remodel	N/A	150 E. Acme Street	Application Received
S+S Retail Center	Retail	14,700 sq. ft. on 1.6 ac.	Application Received
Cal Trak Trailers	Commercial	N/A	Application Received
Oakley Village Light Industrial Park	Retail	Retail/Ofc 72,964 sq. ft. Mini Storage 158,801 sq. ft.	Application Received
Main Street at Laurel Road (Designer's Collaborative)	N/A	30,177 sq. ft.	Application Received
Blue Champagne Pools	Commercial	1,482 sq. ft.	Application Received
Oakley Commercial	Commercial	approx. 10,000 sq. ft	Application Received
Metro PCS antenna	N/A	N/A	Application Received
Metro PCS Antenna	N/A	N/A	Application Received
T-Mobile Cell Tower	N/A	N/A	Application Received
Laurel Shopping Center	Commercial	N/A	Pre-Application
TT 8876	Residential	19 units	Application Submitted
TT 8843	Residential	10 units	Application Submitted
TT 8823	Residential	6 units	Application Submitted

(*Continued on next page)*

Table 6-1
Gilbert Property Cumulative Project List (Continued)

Project	Land Use	Sq. Ft./Units	Status
TT 8836	Residential	16 units	Application Submitted
TT 8807	Residential	50 units	Application Submitted
TT 8803	Residential	50 units	Application Submitted
TT 8787	Residential	60 units	Application Submitted
TT 8736	Residential	53 units	Application Submitted
TT 8731	Residential	547 units	Application Submitted
TT 8790	Residential	49 units	Approved - November 2004
TT 8765	Residential	25 units	Application Submitted
TT 8752	Residential	10 units	Approved – May 2004
TT 8656	Residential	6 units	Approved – February 2004
TT 8530	Residential	86 units	Approved – September 2004
TT 8168/7657	Residential	220 units	Approved
TT 7681	Residential	40	Approved – May 2004
TT 7426/7590/ 7655/7760	Residential	182 units	Approved – February 1992
TT 7359	Residential	36 units	Approved – August 2002
TT 8569	Residential	6 units	Approved – April 2004
TT 8728	Residential	33 units	Application Submitted
TT 7599	Residential	11 units	Approved – March 2001
TT 8725	Residential	48 units	Approved
TT 6963	Residential	197 units	Approved – January 2000

(*Continued on next page)*

Table 6-1
Gilbert Property Cumulative Project List (Continued)

Project	Land Use	Sq. Ft./Units	Status
TT 7662	Residential	215 units	Approved – August 1999
TT 7797	Residential	98 units	Approved – October 1999
TT 8504	Residential	12 units	Approved – September 2002
TT 8541	Residential	356 units	Approved – November 2003
TT 8678,8679, 8680	Residential	660 units	Approved – October 2003
TT 8727	Residential	27 units	Approved – July 2003
TT 8737	Residential	172 units	Approved – April 2004
Tuscany Estates	Residential	81 units	Application Pending
7467/7235/7358	Residential	57 units	Built Out
7630	Residential	128 units	Built Out
7658	Residential	38 units	Built Out
7689	Residential	225 units	Built Out
8403	Residential	72 units	Built Out
MS 01-978	Residential	4 units	Built Out
6968	Residential	42 units	Built Out
8655	Residential	32 units	Built Out
8734	Residential	28 units	Approved
MS 04-978	Residential	3 units	Approved
MS 04-980	Residential	3 units	Approved
8916	Residential	41 units	Approved

(*Continued on next page)*

Table 6-1
Gilbert Property Cumulative Project List (Continued)

Project	Land Use	Sq. Ft./Units	Status
MS 03-978	Residential	4 units	Approved
8981	Residential	16 units	Approved
8973	Residential	176 units	Approved
MS 05-978	Residential	4 units	Approved
MS 04-977	Residential	3 units	Approved
9027	Residential	116 units	Approved
8904	Residential	97 units	Approved
8985	Residential	11 units	Approved
9016	Residential	78 units	Approved
8983	Residential	125 units	Application Received
8980	Residential	96 units	Application Received
9015	Residential	98 units	Application Received
9043	Residential	16 units	Application Received
9044	Residential	20 units	Application Received
9013	Residential	22 units	Application Received
9080	Residential	27 units	Application Received
9032	Residential	624 units	Application Received
9034	Residential	176+/- units	Application Received
8975	Residential	75 units	Application Received
9085	Residential	55 units	Application Received

(*Continued on next page)*

Table 6-1
Gilbert Property Cumulative Project List (Continued)

Project	Land Use	Sq. Ft./Units	Status
Gilbert - Castle/Ryder	Residential	506 units	Pre-Application
Subdivision	Residential	4 units	Pre-Application
City of Brentwood			
CUP 94-7A	Commercial	98,366 sq. ft.	Planning
DR O4-02	Industrial	24,000 sq. ft. on 2.5 acres	Approved
DR 04-13	Non-residential	17,600 sq. ft.	Approved
DR 04-19	Non-residential	20,500 sq. ft.	Approved
DR 04-23	Non-residential	14,300 sq. ft	Approved
DR 04-14	Non-residential	18,000 sq. ft.	Approved
DR 04-15	Non-residential	18,600 sq. ft.	Approved
CUP 01-25	Non-residential	60,000 sq. ft. on 4 acres	Approved
DR 04-16	Non-residential	18,600 sq. ft.	Approved
DR 04-18	Non-residential	20,700 sq. ft.	Approved
TSM 8416	Residential	133 units on 25.74 acres	Under Construction
DR 04-06	Non-residential	56,490 sq. ft. on 3 acres	Under Construction
Contra Costa County			
DP773009	Residential	4.02 acres	N/A
LP012109C (Public golf course w/ 100 space campground)	Recreation	299 acres	N/A
LP042304	Commercial	240-space boat storage facility	N/A
SD6013	Residential	560 units on 300 acres	N/A

(*Continued on next page)*

Table 6-1
Gilbert Property Cumulative Project List (Continued)

Project	Land Use	Sq. Ft./Units	Status
MS 06-979	Residential	3 units	Application Received
SD8220	Mixed-use	90 acres	N/A

Cumulative Impacts

Cumulative impacts are analyzed in each of the technical chapters of this Draft EIR (Chapters 4.2 through 4.13) and are summarized below.

Aesthetics

Cumulative impacts regarding aesthetics are discussed in Impact 4.2-5. The Draft EIR determined that the proposed project would contribute to cumulative change in the visual character of the region, replacing vacant land with residential development. However, the Oakley 2020 General Plan designates the planning area for residential uses and the Oakley 2020 General Plan EIR Impact 3.2-B concludes that the residential development anticipated by the General Plan would have a less-than-significant impact to the existing visual character or quality of the planning area if General Plan policies are implemented. The cumulative aesthetic impacts would therefore be less-than-significant.

Land Use and Agriculture

The land use impact analysis includes a discussion of the existing and planned land uses in the project area. The Draft EIR found that increases in the intensity of land uses in the region as a result of the proposed project would be a cumulative impact. However, the 2020 General Plan designates the proposed project area for urban development and anticipates residential growth in the area. Additionally, all development proposed and constructed within the City is reviewed for consistency with Citywide land use controls and development standards. Because the City's General Plan anticipates the construction of a residential development on the proposed project site, and the General Plan EIR analyzed cumulative land use impacts of the General Plan buildout, including development of the Gilbert Property, and concluded that the impacts would be less-than-significant, the cumulative effects in regards to land use are less-than-significant.

The agricultural impact analysis includes a discussion of the cumulative effects due to the loss of agricultural land in the area. The Contra Costa General Plan incorporates an Urban Limit Line (ULL) and has established minimum lot sizes for prime agricultural lands that are outside of the ULL. The entire Oakley Planning Area is within the ULL, and therefore, the land use for the proposed project would be within the scope of the project area's intended land use for both the County and the City. In addition, the land uses associated with the proposed project are consistent with the original County mixed-use designation as well as consistent with the uses set forth in the Development Agreement for the Gilbert site and the Oakley 2020 General Plan. The General Plan EIR analyzed impacts of the General Plan buildout on conversion of agricultural

lands, including the development of the Gilbert Property, and concluded that implementation of the General Plan policies would reduce this impact to a less-than-significant level. Because the project area is within the ULL and urban growth is anticipated and because the proposed development is consistent with the land use designations associated with the proposed project, the cumulative effect of the proposed project with regard to agricultural land use would be less-than-significant.

Transportation and Circulation

The Traffic and Circulation chapter of this Draft EIR found that the proposed project would cumulatively impact the intersections of West Cypress Road and O'Hara Avenue Under cumulative conditions, the development of the proposed project is expected to decrease the level of service (LOS) at this intersection to unacceptable levels. As discussed in Impact 4.4-9, payment of necessary traffic improvement fees would reduce the cumulative increase in traffic at these intersections to a less-than-significant level.

Air Quality

The discussion of air quality impacts included in this Draft EIR found that increases in vehicle traffic as a result of the proposed project would contribute cumulatively to the degradation of regional air quality. The addition of the proposed project's 510 residential units would result in a significant cumulative impact to air quality. The implementation of the mitigation measure specified in the Air Quality chapter (Chapter 4.5) would decrease the overall effect, but would not reduce this cumulative impact to a less-than-significant level. Therefore, the proposed project's cumulative effects on air quality would be significant and unavoidable.

Noise

The noise impact analysis found that the proposed project is consistent with existing land use designations for the proposed project site and would be within the parameters of planned uses. Therefore, the proposed project, in conjunction with future developments in the City of Oakley, would result in a less-than-significant impact without any mitigation measures required.

Hazards

The discussion of on-site hazards included in this Draft EIR concludes that impacts related to hazardous materials are usually site-specific, and therefore are not affected by cumulative development. This is true for the proposed project. All of the impacts associated with hazardous materials on the proposed project site were found to be less-than-significant with the implementation of mitigation measures. Current and future surrounding developments are subject to the same federal, State and local hazardous material management requirements as the proposed project, and therefore, any potential hazards on the proposed project site or any future adjacent sites would be required to be mitigated to a less-than-significant level. Therefore, the cumulative impacts from hazards as a result of the development of the proposed project site would be less-than-significant.

Biological Resources

The analysis of the proposed project's biological impacts found that the development of the Gilbert Property project would contribute to the potentially significant cumulative loss of several special-status species and their habitat. This cumulative impact would be reduced to a less-than-significant level through the implementation of required mitigation measures.

Geology and Soils

The discussion of the proposed project's cumulative effects related to geology and soils found that the impacts that would be introduced due the proposed project, such as an increased number of structures that would be exposed to seismic risks, erosion, and other topographic alterations, would be site-specific and generally would not combine with other effects to create negative cumulative impacts to the area. Therefore, the Draft EIR found that the Gilbert Property project would result in less-than-significant cumulative impacts.

Mineral Resources

The discussion of mineral resources in this Draft EIR investigated the impacts related to the three abandoned gas wells that exist on-site. The development of the proposed site would render these abandoned wells and their respective natural gas supplies inaccessible. In addition, the buildout of the General Plan would require the abandonment of wells to the north/northwest of the proposed project site. Although access to these underground minerals would be restricted, the mineral resources would remain. However, the area to the north of the proposed project site is designated for recreational uses and will remain open space, allowing for the natural gas stocks to be accessible at a future date through the boring of new wells. Therefore, because the proposed project would not destroy or limit future access to the mineral resources, the cumulative effect of the proposed project would be less-than-significant.

Cultural Resources

The Cultural Resources chapter of this Draft EIR found that, though the proposed project area does not contain a large number of known prehistoric sites or artifacts, the archaeological sensitivity of the proposed project area is still a factor. The potential for archaeological resources exists at any location, and therefore the development of the proposed project was found to have a potentially significant cumulative impact with regard to the degradation of cultural resources in the area. However, this impact was found to be mitigable to less-than-significant with the implementation of Mitigation Measures 4.11-2(a) and (b) from the Cultural Resources chapter of this EIR.

Hydrology and Water Quality

The discussion of cumulative Hydrology and Water Quality impacts of the proposed project found that the development of the proposed project would increase the total impervious surfaces in the area and result in an increase in stormwater drainage into the existing drainage system.

However, the EIR found that the stormwater management system for the proposed project, which includes a stormwater lake, would reduce this effect to a less-than-significant level.

Additionally, the EIR also discussed the proposed project's potential for decreasing the water quality downstream of the proposed project site by increasing the sediment load in area waterways and introducing an increase in pollutants as a result of urban runoff. However, the proposed stormwater lake and infrastructure for the project would filter pollutants before they enter Emerson Slough, resulting in a less-than-significant cumulative impact.

The hydrology section also determined that, after the implementation of suggested mitigation measures that would entail the buildout of necessary infrastructure, that impacts related to adequate water supplies for the proposed project site would be less-than-significant for both the near and long term settings.

Public Services and Utilities

The Draft EIR's discussion of the cumulative effects of the proposed project on public services and utilities found that although most of the cumulative public services impacts would be mitigated to a less-than-significant level through the payment of applicable fees at the project level, cumulative impacts to wastewater collection facilities would be potentially significant. This impact is less-than-significant with implementation of mitigation identified in the Public Services and Utilities chapter.

6.3 Significant Unavoidable Impacts

According to CEQA Guidelines, a Draft EIR must include a description of those impacts identified as significant and unavoidable should the proposed action be implemented (CEQA Guidelines §15126.2[b].) Such impacts would be considered unavoidable when it has been determined that either no mitigation is feasible or only partial mitigation is feasible such that the impact is not reduced to a level that is less-than-significant. This section identifies significant impacts that could not be eliminated or reduced to a less-than-significant level by mitigations imposed by the City. The final determination of the significance of impacts and of the feasibility of mitigation measures would be made by the City as part of its certification action.

The significant and unavoidable impacts of the Gilbert Property project are listed below.

Air Quality

The discussion of Air Quality effects, Section 4.5 of this Draft EIR, identified the cumulative effects relating to increases in daily vehicle emissions resulting in a degradation of regional air quality as a significant and unavoidable impact.

Although implementation of mitigation measures would reduce the magnitude of this impact by 10 to 20 percent, total cumulative emissions would still be above BAAQMD thresholds and measures to fully mitigate this impact were not identified. Therefore, this impact would remain significant and unavoidable.

7. EIR AUTHORS/PERSONS CONSULTED

7. EIR AUTHORS / PERSONS CONSULTED

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Hydrological Analysis

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8. REFERENCES

8. REFERENCES

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APPENDICES

APPENDIX A

DATE: January 25, 2007

TO: Responsible Agencies, Trustee Agencies, and Interested Persons

FROM: Rochelle Henson, Senior Planner
City of Oakley

SUBJECT: REVISED NOTICE OF PREPRARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED GILBERT PROPERTY PROJECT

The City of Oakley Community Development Department is the lead agency for the preparation of an Environmental Impact Report (EIR) for the proposed Gilbert Property project. The scope of the EIR has been proposed based upon a determination by the City of Oakley. The City of Oakley has directed the preparation of this EIR in compliance with the California Environmental Quality Act (CEQA).

Once a decision is made to prepare an EIR, the lead agency must prepare an NOP to inform all responsible and trustee agencies that an EIR would be prepared (CEQA Guidelines Section 15082). The purpose of the NOP is to provide agencies with sufficient information describing both the proposed project and the potential environmental effects to enable the agencies to make a meaningful response as to the scope and content of the information to be included in the EIR. The City of Oakley is also soliciting comments on the scope of the EIR from interested persons.

BACKGROUND

The planning decision to convert the proposed project site for development purposes was made in 1990 when Contra Costa County certified a countywide General Plan EIR and adopted the 1990-2005 General Plan Update redesignating the project site for development as part of an approximate 1,500-acre area from Agriculture to Mixed Use (M-8) development within the County's Urban Limit Line. In 1997, the County for CEQA purposes relied upon the General Plan EIR and approved development agreements providing vested rights to develop the M-8 area. Following annexation of the M-8 area, which included the project site, to the City of Oakley in 1999, the City prepared and certified the initial Oakley General Plan EIR.

In the fall of 2001, the original owner of the Gilbert property, along with the original adjacent landowners Emerson and Burroughs, submitted an application to Cal-Fed seeking funding for a proposal to sell portions of their properties north of the Contra Costa Canal for the purpose of creating the Dutch Slough Tidal Marsh Restoration Project. The owners further indicated their intention to develop the remaining land to the south of the Canal.

On September 23, 2002, the Oakley City Council approved a Memorandum of Understanding (MOU) between the City and the property owners summarizing the terms of basic understanding between the City and the owners regarding the disposition of the northern and southern portions of the Dutch Slough Properties and future planning for the southern properties. As part of the Southern Property Disposition Agreement, the property owners agreed to transfer ownership of portions of the southern properties and northern properties to the City. Portions of the northern properties were to be transferred to the City for developing a 55-acre community park and related public recreational facilities.

On December 16, 2002, the City Council adopted the Oakley 2020 General Plan, approving urban land use designations for the southern properties, consistent with the terms of the MOU. This approval encompassed the owners' proposal for a combination of residential and commercial development on the southern properties. In August of 2003, the MOU was supplemented by Development Agreements between the City of Oakley and the Dutch Slough property owners to formalize and secure the rights and obligations created in the MOU, General Plan, and Cal-Fed transaction.

In 2003, Cal-Fed purchased the northern portion of the Emerson, Gilbert and Burroughs properties (north of the Contra Costa Canal). Representatives of the Department of Water Resources have indicated that the site will be reclaimed as wetlands, as part of a three-phase project.

On July 31, 2006 a Draft Environment Impact Report (DEIR) was circulated for the Dutch Slough Properties project, which included the Gilbert property. However, on November 28, 2006 the City of Oakley withdrew the Dutch Slough Properties DEIR. The MOU and Development Agreement remain applicable to the Gilbert property and adjacent properties (Emerson and Burroughs).

An application has now been submitted for the development of the Gilbert property portion of the withdrawn Dutch Slough Properties project. Thus, an EIR is being prepared for the Gilbert property only and is known as the Gilbert Property project.

PROJECT DESCRIPTION

Project Location and Setting

The proposed 120-acre Gilbert Property project would be developed in the City of Oakley, Contra Costa County, California (see Figure 1) and would include approximately 510 residential units, the majority of these units are planned to be single-family dwellings.

The Gilbert Property project site is on the north side of Cypress Road, east of Sellers Avenue and west of Little Dutch Slough (see Figure 2). The project site is bounded on the north by the Contra Costa Water District Canal (CCWD/USBR Canal), which segregates the project site from the open space acreage to the north currently owned by the State of California and is bordered on the immediate east and west by vacant, undeveloped land. A 55-acre portion of land immediately to the north of the CCWD/USBR canal and the project site at the end of Sellers Avenue is held in escrow, pursuant to a Memorandum of Understanding and Development Agreement, for future conveyance to the City of Oakley as a community park.

The Gilbert property is identified as Assessor's Parcel Number (APN) 032-081-016.

Project Entitlements

The entitlements requested with this application include:

- Certification of an Environmental Impact Report;
- Rezone to Planned Development (P-1) (including Preliminary Development Plan);
- Approval of Parcel Maps;
- Approval of Vesting Tentative Map;
- Approval of Design Review; and
- Acquisition of right of way and easements.

Project Components

The proposed land plan for the Gilbert Property project site includes residential development, trails, parks, levees, storm water detention pond, as well as the infrastructure improvements necessary to accommodate the new development. For purposes of the CEQA analysis in the project-level EIR, the project applications reflect the following:

Residential Development

The proposed land plan for the Gilbert Property project would primarily include single-family dwelling units (a total of approximately 510.) The neighborhoods would be woven together into a comprehensive community through the use of traffic and pedestrian circulation, parks and open spaces, coordinated landscape treatments and complimentary architectural styles.

Two developers, Castle Companies and Ryder Homes, plan to develop the Gilbert property site (Subdivision 9033). The development would include approximately 510 single-family residential units. The Gilbert Property would consist of four neighborhoods. The lot sizes range from approximately 3,000 square feet to 8,000 square feet.

Infrastructure

The primary infrastructure systems would be sized to meet demands created by build out of the proposed project and surrounding area. Consistent with the City's General Plan and the project Development Agreement, infrastructure has been upgraded to accommodate future growth anticipated in the City's General Plan and General Plan EIR (e.g., roadway design, drainage, etc.). The infrastructure systems that would be constructed as a part of the project include storm drainage, wastewater, water supply, roadways, and a system of parks and trails.

The General Plan 2020 EIR analyzed the larger area-wide infrastructure systems, and project-level EIRs for the development to the west recently addressed the coordinated infrastructure needs for the Cypress Corridor. The Cypress Lakes community by Shea Homes has been separately analyzed under a certified project-level EIR. The Gilbert Property project-level EIR would appropriately address the integrated and coordinated infrastructure relationships raised by the project, including updates to the pending projects in the vicinity of the project site.

Storm Drain

The design of the storm water management facilities for the Gilbert Property project would be developed to control peak storm water flows, improve the quality of the storm water runoff before being discharged from the site, and to protect the homes from flooding during large storm events. A storm water pond would be located in the central portion of the Gilbert property. The pond's surface area would be approximately five acres and pumped into the existing outfalls to Emerson Slough, which is consistent with the area's drainage shed. The pond would be sized to accommodate developed flows for the proposed project as well as the existing flows from properties to the south and east. As the properties to the south develop, additional ponds or below grade detention would need to be constructed within those properties to detain storm flows. The outfalls have already been comprehensively studied and analyzed for CEQA purposes and permitted by the City of Oakley under the entitlements for the Cypress Grove subdivisions to the west (8678, 8679 and 8680), which has been constructed. As a result, these outfalls are not considered part of the proposed project.

Levees

The site is subject to inundation risks from the Sacramento/San Joaquin Delta, which has a 100-year flood elevation of 7 feet above mean sea level (MSL). The Gilbert Property would construct a levee system surrounding the property. The existing levee constructed by Cypress Grove project along Sellers Avenue may be modified with this development to cross Sellers Avenue and connect into the proposed Gilbert levee system, eliminating the requirement for levees along both sides of Sellers Avenue. The levee will be built to an elevation of 10 feet above msl to protect against a flood elevation of 7 feet, with an additional 3 feet of freeboard. The remainder of the project perimeter, including Cypress Road, is higher than 10 feet msl and does not require further flood protection.

Wastewater

The Ironhouse Sanitary District (ISD) is responsible for provision of services to the entire Cypress Corridor area and would provide wastewater service to the project site. ISD is the successor to the former Contra Costa County Sanitation District No. 15 and the Oakley-Bethel Island Wastewater Management Authority, which merged and reorganized as ISD in 1992. ISD owns and operates the wastewater collection, treatment, storage, and disposal facilities for the City of Oakley, unincorporated eastern Contra Costa County communities including Bethel Island, and the area in between. ISD staff is currently updating their wastewater master plan and conducting CEQA review covering the master plan, for which all components of the wastewater treatment facilities are being evaluated. This plan is intended to develop sufficient wastewater system facilities to accommodate the entire jurisdiction—of which Cypress Corridor is only one part—at build out of the General Plan. The wastewater system is composed of collection, treatment, and disposal sub-systems.

Currently, properties connected to the system on Cypress Road pump their sewage to the treatment plant through an existing 14-inch force main in Cypress Road. The force main connects to an existing 18-inch gravity main in State Route 4 (SR 4) that flows to the treatment plant. Ironhouse Sanitary District has anticipated that a second force main, estimated at 14 inches, may be needed to serve ultimate City buildout and the ISD service boundary. This line may be constructed in Cypress Road or along the northern trail corridor adjacent to the CCWD/USBR right of way. The Gilbert Property project may accommodate a portion of this improvement if within the project boundary.

The Gilbert property would construct a sanitary sewer pump station onsite to collect onsite sewer flows to accommodate regional needs such as serving the Burroughs and Baldocchi properties, and pump them directly into the existing 14-inch force main located in Cypress Road.

Water Supply

The Diablo Water District maintains the existing water supply and infrastructure in the City of Oakley and has provided a Water Supply Assessment indicating that adequate supply exists to serve the proposed development. The Diablo Water District is a water retailer and is provided water by CCWD/USBR, acting as a water wholesaler. Water mains for the Gilbert properties project would be constructed in accordance with Diablo Water District's master plan and dedicated to the District upon completion. To serve the project area, a 20-inch water main has been constructed in Cypress Road from SR 4 to Sellers Avenue, and a 24-inch water main has been constructed in Cypress Road from Sellers Avenue to the Cypress Lakes community by Shea Homes, as has been separately analyzed under the certified project EIR for the Shea Cypress Lakes project.

The western portion of the Gilbert property is located within the boundaries of CCWD Service Area A. Service Area A is the Los Vaqueros Project (LVP) Planning Area for receiving LVP water quality benefits. The eastern portion of the Gilbert property is located within the boundaries of CCWD Service Area B. The project needs to be annexed to the Central Valley Project (CVP) Contractual Service Area. However, the final CEQA documentation and other environmental information, including evidence of compliance with ESA and other federal regulations would need to be completed for the Gilbert Property project and coordinated through CCWD for submission to the Bureau of Reclamation as an inclusion application.

The proposed project would also need a source of water for the recharge of the storm water pond during the dry season and for irrigation of common area landscaping, including the park. The project would get this water from one of two potential sources. One potential source is groundwater, which would require the construction of a well in the park/storm water pond area. The other possible source is through the use of water from the Emerson Slough. The Gilbert homebuilders are considering the possibility of entering into an agreement with the City of Oakley to continue to use this riparian water right for lake recharge and irrigation purposes.

Project Site Access

Primary access to the Gilbert Property project would be by Cypress Road and Sellers Avenue. Knightsen Avenue also conveys traffic to the rural parts of East Contra Costa County. The Gilbert residential development would have a signalized primary entrance at the intersection of Franklin Lane and Cypress Road with a secondary entrance at the intersection of Sellers Avenue and the proposed spine road.

Roadway Improvements

Consistent with the Oakley 2020 General Plan, roadway infrastructure would be constructed to meet the needs of new residential neighborhoods and provide access to this portion of Oakley. Street widths would be designed in accordance with traffic studies completed for the project as well as the Oakley 2020 General Plan. The proposed project includes both on-site and off-site roadway improvements.

Cypress Road will be designed to provide an ultimate six-lane divided arterial from Sellers Avenue to Knightsen Avenue with a landscaped median, as well as landscaping corridors and trails on both sides of the road. The Gilbert Property project is proposing to provide the first increment of this improvement by constructing three westbound lanes with a landscaped median and one new eastbound lane along the entire property frontage.

Sellers Avenue will be designed as an ultimate four-lane divided road fromCypress Road to the project boundary with the CCWD/USBR Right of Way. The Gilbert Propoerty project is proposing to construct two of these Northbound lanes and one southbound lanes plus half of the median improvements as a portion of the project.

Local streets would be designed and constructed per City of Oakley standards.

Roadway improvements would include the following:

- Right of way and easement acquisition on the south side of Cypress Road and along Sellers Avenue south of Cypress Road;
- Removal of structures;
- Transition of Cypress Road to the existing two-lane road to the west and to the east of the Gilbert property;
- Transition of Sellers Avenue south to the existing two-lane road;
- Property dedication and improvement of Sellers Avenue north to the CCWD/USBR Right of Way;
- Modification of existing traffic signals at Sellers Avenue and Knightsen Avenue and installation of new traffic signals at entries;
- Intersection improvements at Franklin Lane including transitions to the south;
- Extend culverts under Cypress Road near Knightsen Avenue as needed for Cypress Road widening;
- Modification of existing driveways to adjacent properties;
- Overhead and underground utility relocation as needed; and
- Modifications of utility services including drainage, irrigation, power, telephone, cable, etc. to adjacent properties.

Community Components

The Public Facilities Impact Fee includes community parks, neighborhood parks and open space components. The developers shall construct the neighborhood parks and open space trails to meet the City requirements. To complete the obligation of the project to dedicate and improve parkland, the project would pay the remaining park in-lieu fee to facilitate the provision of the community park facilities to be located north of the CCWD/USBR canal.

Parks

The park system within the Gilbert property would consist of an approximately 3-acre park in the center of the community adjacent to the stormwater pond.

Trails

The proposed project would contribute to the construction of trails along the north side of Cypress Road, east side of Sellers Avenue, along the north edge of the property adjacent to the CCWD/USBR canal and on certain local streets in the project site. The Gilbert Property would provide its portion of the trail system in substantial conformance with the planning framework. The trail would ultimately provide pedestrian circulation to and from the Delta Vista Middle School, the Iron House Elementary School, the neighborhood parks and the proposed 55-acre City Park north of the CCWD/USBR canal.

A trail would be located along the northern boundary of the development just south of the CCWD/USBR canal. This trail ultimately would connect to the trail constructed by the Cypress Grove development to the west, which in turn provides access to the existing Marsh Creek Trail, and links to an existing regional trail system. It should be noted that a gap would exist in the trail across the Emerson property until that area is developed.

The trails would include installation of a fence along the CCWD/USBR right of way and a safety "liner" fence adjacent to the canal in the CCWD/USBR right of way or as directed by CCWD/USBR. In addition, a trail would be constructed along the west side of Dutch Slough within the Gilbert property from Cypress Road to the CCWD/USBR right of way.

ENVIRONMENTAL EFFECTS

The City has reviewed the proposed Gilbert Property project and has determined that the EIR should address the following issues. The initial study will address all of the issues not addressed in the EIR.

Each of the following issue chapters will include a discussion of the existing setting, thresholds of significance, specific impacts, mitigation measures, and monitoring strategies. Because the proposed project is consistent with the Oakley General Plan, the environmental impact discussions within the Gilbert Property project EIR will tier from the General Plan EIR analysis and conclusions.

Aesthetics

The Aesthetics chapter will summarize the existing regional and project area aesthetics and visual setting. Project-specific aesthetic issues such as the effect on scenic vistas, trees, historic buildings, scenic highways, existing visual character or quality of the site and surrounding areas, and light and glare will all be addressed. This chapter will include an analysis of the existing setting, identify the thresholds of significance, identify impacts, and identify mitigation measures and monitoring strategies.

Land Use and Agricultural Resources (including Williamson Act contracts)

The Land Use chapter will evaluate the consistency of the proposed project with the City of Oakley's adopted plans and policies. RP&M will review the City's adopted General Plan and Zoning Ordinance, as well as any other appropriate documents, to address consistency issues. The chapter will further assess the compatibility of the proposed project with the surrounding land uses, both existing and proposed. The land use chapter will identify land use impacts regarding any inconsistencies or incompatibilities with adopted plans and policies created by the approval of the proposed project. This chapter of the EIR will also summarize the status of the existing agricultural resources of the site and the site vicinity, using the current state model and data, including identification of any prime/unique farmland or farmland of Statewide Importance on the project site. Any conflicts with existing zoning for agricultural use, Williamson Act, or right-to-farm ordinances applicable to the project site will also be identified. The analysis will further include a discussion regarding conversion of farmland to non-agricultural uses. This chapter of the EIR will include an analysis of the existing setting,

identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies.

Traffic and Circulation

The Transportation and Circulation chapter will be based on a traffic study being prepared by Abrams Associates. Traffic impacts of the proposed projects will be analyzed under as many as three different development alternatives and a No Project alternative. The traffic report will be prepared according to the Contra Costa Transportation Authority (CCTA) Technical Procedures dated September 17, 1997. The report will address all of the growth management issues that are required by Measure "C" of the CCTA. The study will also include evaluation of the operations at each of the study intersections for five different scenarios. The scenarios include an evaluation of the existing conditions, existing plus planned and approved projects (Background) conditions, Background plus project conditions, cumulative without project conditions, and cumulative with project conditions. In addition, a detailed site circulation and access review will be conducted to determine the adequacy of the proposed site plan in accordance with generally accepted traffic engineering standards. Emergency access, transit, pedestrian, and bicycle facilities will also be discussed and analyzed to ensure adequacy of the proposed facilities based upon existing City of Oakley plans. This chapter of the EIR will also include an analysis of the existing setting, identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies.

Air Quality

The Air Quality chapter will be based on an air quality analysis conducted by Don Ballanti. The chapter will summarize the regional air quality setting, with a description of the climate and meteorology of the project area, historical air quality data, and current efforts to attain and maintain the State and federal air quality standards. The chapter will summarize air quality data from the closest monitoring site to the project site. The chapter will also quantify agricultural emissions from current use of the project site, and identify all sensitive receptors for air pollutants in the vicinity of the project or along roads providing access to the site. The air quality consultant will use the URBEMIS2002 computer program to prepare an analysis of regional changes in vehicle emissions and operational emissions from the project. The CALINE-4 computer model will be used to perform micro-scale modeling of carbon monoxide levels near intersections selected as having the greatest potential of carbon monoxide problems. In addition, emissions from construction equipment exhaust and windblown dust will be identified. The potential for windblown dust or other construction impacts will be evaluated based upon prevailing wind patterns, surrounding land uses, and the soils of the area. The level of significance of impacts identified in the analyses will be determined using the thresholds of significance recommended by the Bay Area Air Quality Management District, and mitigation measures and monitoring strategies will be recommended for all impacts identified to be significant.

Noise

The Noise chapter will be based on an environmental noise assessment performed by Illingworth and Rodkin, Inc. The chapter will include an analysis of the existing setting, identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies. All significant noise impacts due to and upon the proposed project will be identified and analyzed. Particular attention will be paid to traffic noise impacts associated with increased traffic on the local roadway network, and the potential for future noise impacts at any noise sensitive land uses located in the project vicinity. The noise report will also evaluate potential noise impacts associated with construction activities. Appropriate and practical recommendations for noise control, which are aimed at reducing any identified potential noise impacts to a level of insignificance, will be included in the noise report and subsequently incorporated into the Noise chapter of the EIR. The chapter will summarize regional and local noise setting information, identify relevant regulatory setting information, and identify changes in ambient noise characteristics and the effects on sensitive receptors due to the proposed project.

Hazards

The Hazards section of the EIR will assess existing features of the project site, and will determine if the proposed project would exacerbate or create hazardous conditions in the area, or if the project would bring people into contact with hazardous materials or substances. The section will identify any such hazardous materials or substances that may be present at the project site or adjacent sites and designate mitigation measures designed to reduce their impacts to a less-than-significant level. The hazards discussion will be based primarily on the Phase I Environmental Site Assessment prepared for the Gilbert Property.

Biological Resources

The Biological Resources chapter will be based on a biological resources assessment by Sycamore Associates. The Biological Resources chapter of the EIR will include a description of the potential effects on plant communities, wildlife, and wetlands, including adverse effects on rare, endangered, candidate, sensitive, and special-status species that are identified during site reconnaissance. The section will describe the impact the project would have on biological resources identified by the biologist and assign mitigation measures, if feasible, to limit the impacts to a less-than-significant level. In addition, this chapter will identify the required permits relating to biological resources.

Geology

The Geology section will describe the setting and summarize the potential effects from earthquakes, landslides, and liquefaction as well as identify any unique geological features within the project site. The chapter will address the need for grading on the project site and the associated impacts. Further, this section will include an analysis of the existing setting, identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies. The section will be based on the geotechnical report prepared for the Gilbert property.

Mineral Resources (including gas and oil resources)

The Mineral Resources section will describe the mineral characteristics of the project site and evaluate the extent to which implementation of the proposed project could effect the availability of locally and regionally valuable mineral resources; specifically, the impacts to known gas and oil wells on the project site. Further, this section will include an analysis of the existing setting, identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies. The section will be based on the City of Oakley General Plan as well as any relevant information from the Environmental Site Assessment prepared for the Gilbert Property.

Historical and Cultural Resources

The Historical and Cultural Resources chapter will summarize the setting, and briefly describe the potential construction-related effects on historical, archaeological, and paleontological resources. The chapter of the EIR will include an analysis of the existing setting, identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies. This chapter will be based on the technical study completed by Basin Research.

Hydrology, Water Supply (SB 610), and Water Quality

The Hydrology and Water Quality section of the EIR will describe the existing setting and the project's potential effects on water quality, storm drainage, and groundwater supply. Potential impacts will be analyzed and identified. The section will address any issues that arise with regard to water quality, drainage patterns, erosion, siltation and other effects on existing watercourses, and the potential of placing people or structures in danger from flooding. Mitigation measures designed to reduce impacts to a less-than-significant level, if feasible, will be assigned to counteract any potential impacts that are identified in the analysis.

Water Supply Assessment

The Gilbert Properties project is subject to Senate Bill 610 and Senate Bill 221, which require an assessment of the availability of potable water supply through the preparation of a Water Supply Assessment by the project's water purveyor. A Water Supply Assessment is required for new developments with over 500 units or a 10 percent increase in the number of service connections. A Water Supply Assessment report will be used in this section to assess the City's total projected available water supplies during normal, single dry, and multiple dry water years in five-year increments for a 20-year projection to meet the water demands of the proposed project in addition to the City's existing and planned future uses.

Public Services and Utilities (including parks and open space)

The Public Services and Utilities chapter will summarize setting information and identify potential new demand for services, including water supply, wastewater systems, solid waste disposal, law enforcement, fire protection, schools, libraries, parks and recreation, and electric power. This chapter will include an analysis of the existing setting, identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies. The analysis will be based on infrastructure reports being prepared by Carlson, Barbee & Gibson, Inc. RP&M will also consult with the appropriate City and other agencies in order to address public services and utilities. In addition, the section will include an analysis of the existing setting, identification of the thresholds of significance, identification of impacts, and the development of mitigation measures and monitoring strategies.

DISCUSSION OF CUMULATIVE IMPACTS

In accordance with Section 15130 of the CEQA Guidelines, an analysis of the cumulative impacts will be undertaken and discussed in the EIR. In addition, pursuant to CEQA Section 21100(B)(5), the EIR will also address the potential for growth inducing impacts of the proposed project focusing on whether there will be a removal of any impediments to growth associated with the proposed project.

SUBMITTING COMMENTS

To ensure that the full range of issues related to this proposed project are addressed and all significant issues are identified, written comments are invited from all interested parties. Written comments concerning the proposed EIR for the Gilbert Property project should be directed to the name and address below:

Ms. Rochelle Henson
City of Oakley
3231 Main Street
Oakley, CA 94561
(925) 625-7000
(925) 625-9194 (fax)

Written comments are due to the City of Oakley at the location addressed above by 5:00 p.m. on February 26, 2007.

SCOPING MEETING

A public scoping meeting will be held on February 7, 2007 regarding the proposed EIR for the Gilbert Properties project.

Figure 1 Regional Location Map

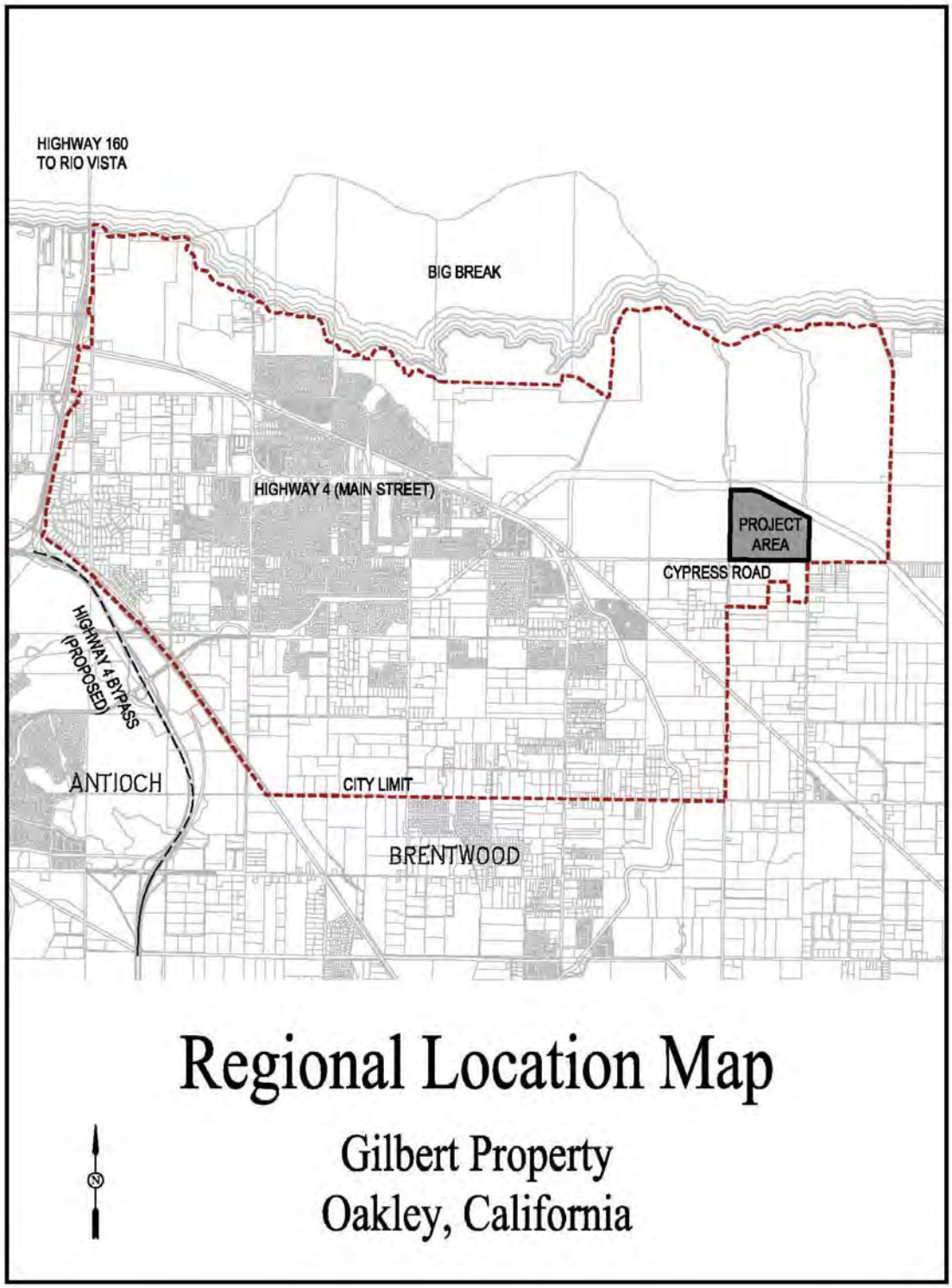
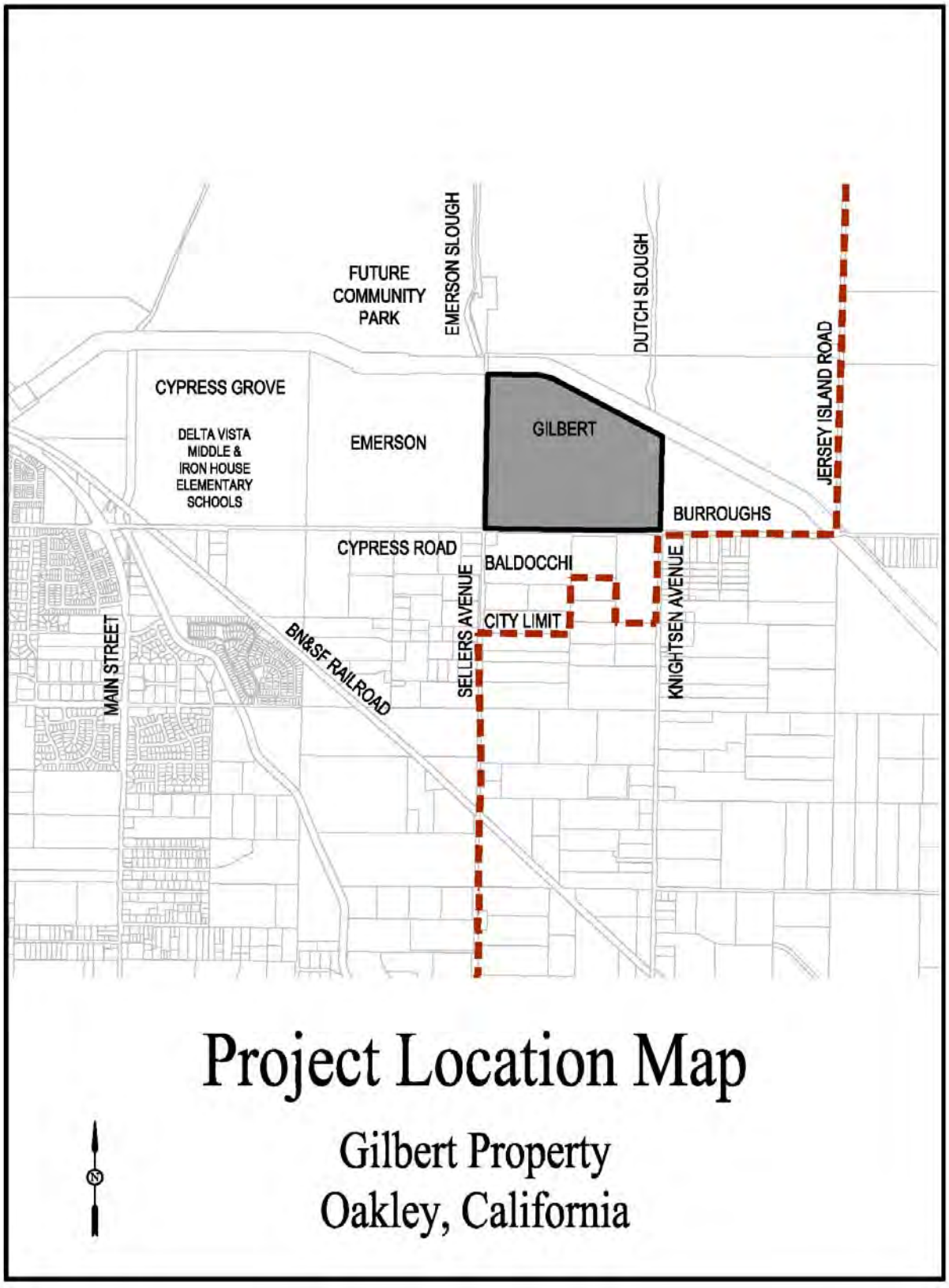


Figure 2 Project Location Map



APPENDIX B

United States Department of the Interior

BUREAU OF RECLAMATION
South-Central California Area Office
1243 N Street
Fresno, California 93721-1813

IN REPLY REFER TO:
SCC-424
ENV-6.00
Contra Costa

FEB 22 2007

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ▶ 1

To Ms. Rochelle Henson	From Shauna McDonald
Dept./Agency City of Oakley	Phone # 559-487-5202
Fax # 925-625-9194	Fax # 559-487-5397

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

Ms. Rochelle Henson
Senior Planner
City of Oakley
3231 Main Street
Oakley, CA 94561

Subject: Revised Notice of Preparation of an Environmental Impact Report for the Proposed Gilbert Property Project

Dear Ms. Henson:

The Bureau of Reclamation has reviewed the above-referenced Notice of Preparation (NOP). As noted in the NOP, the proposed Gilbert Property project will require an inclusion into Contra Costa Water District's water service area under their Water Service Contract for Central Valley Project water. The NOP notes that evidence of compliance with the Endangered Species Act and other federal regulations must be submitted to Reclamation with an inclusion application.

It should also be noted that Reclamation's approval of the Gilbert Property inclusion must comply with the National Historic Preservation Act because it is the type of activity that has the potential to affect historic properties. We will consult with the State Historic Preservation Officer on the inclusion and a cultural resources report will be submitted in compliance with the 36 CFR Part 800 regulations. This report must meet federal and Reclamation reporting requirements before it can be submitted. These requirements differ from what is required under the California Environmental Quality Act for historical and cultural resources. For any questions regarding this issue, you may contact Patrick Welch, Archaeologist, at 916-978-5040.

Reclamation thanks you for the opportunity to comment on the NOP. For other questions, please contact Shauna McDonald, Wildlife Biologist, at 559-487-5202, or at 559-487-5933 for the hearing impaired.

Sincerely,

M. Kathleen Wood

Kathy Wood
Chief, Resource Management Division

bc: MP-153 (P.Welch)
SCC-411, SCC-412, SCC-424, SCC-455, SCCAO Files; RMD Files

Greenbelt Alliance

PROTECTING OPEN SPACE AND PROMOTING LIVABLE COMMUNITIES

1601 N Main St. #105
Walnut Creek, CA 94596
Phone (925) 932-7776
Fax (925) 932-1970

Date: 2/22/07

To: Rochelle Henson

Fax: (925) 625-9194

From: Christina Wong

Remarks: Gilbert Property NOP

8 pages including cover

Please accept our comments.

Christina Wong

info@ greenbelt.org www.greenbelt.org

Greenbelt Alliance

PROTECTING OPEN SPACE AND PROMOTING LIVABLE COMMUNITIES

February 22, 2007

Ms. Rochelle Henson
Senior Planner
City of Oakley
3231 Main Street
Oakley, CA 94561
(925) 625-7000
(925) 625-9194 (fax)

RE: Gilbert Property NOP

Dear Ms. Henson:

Greenbelt Alliance is the Bay Area's land conservation and urban planning nonprofit. Over the years, we have been a part of helping the City of Oakley grow in a way that preserves quality of life and the environment. Greenbelt Alliance would like to take this opportunity to comment on the NOP for the Gilbert property.

Review Alternatives

Greenbelt Alliance has serious concerns about further development seven feet below sea level and the Delta. Given the recent events in New Orleans, the City of Oakley takes on a poignant responsibility to protect its residents that it is putting within arms reach of natural disaster. The catastrophe in New Orleans should prompt authorities to question the reliability of levees in protecting areas that are prone to flooding and to analyze the long-term effects of developing in a floodplain.

Greenbelt Alliance has filed a suit in state court on a similar project, called the East Cypress Corridor Project, arguing that the East Cypress Corridor project will result in numerous environmental impacts that will harm the public because of its location below sea level. Thus, Greenbelt Alliance asks the City to perform an extremely rigorous and thorough review of potential impacts and alternatives.

Review Cumulative impacts on Delta Development

The project raises numerous cumulative impact issues that should be addressed through a thorough Environmental Impact Study. The project is one of several currently proposed to urbanize low-lying lands around the Sacramento-San Joaquin Delta, but no entity has evaluated the combined water quality, ecosystem, water supply, and flood risk impacts of these projects. The project is one of three or four major project currently proposed in the immediate vicinity that will significantly impact wetlands including the Contra Costa Canal encasement project, the

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info@greenbelt.org • www.greenbelt.org

Dutch Slough Tidal Marsh Restoration Project, the Delta Coves development project on Bethel Island, and the East Cypress Corridor project. Thousand of acres of habitat and farmland combined with hundreds of acres of wetland will be converted by these project, but the respective impacts are only be analyzed piecemeal.

The City should also address the cumulative impacts of the urban development around the perimeter of the delta on the state's water supply system and the Delta ecosystem. The Delta provides drinking water for 23 million people and is the most important aquatic ecosystem in the state of California. Tens of thousands of new units are planned for construction around the Delta and the cumulative impacts that this development on the state's water supply system should be analyzed.

In addition, Greenbelt Alliance shares the concerns expressed by the East Bay California Native Plant Society and wishes to incorporate their comments into our own by attaching them to this letter.

We respectfully request that the City conduct an extremely rigorous and thorough review of the proposed project, due to the potential for extremely deleterious environmental impacts.

Sincerely,

Christina Wong

Christina Wong
East Bay Field Representative

California Native Plant Society
East Bay Chapter
Conservation Committee

February 21, 2007

Ms. Rochelle Henson
Senior Planner
City of Oakley
3231 Main Street
Oakley, CA 94561
(925) 625-7000
(925) 625-9194 (fax)

RE: Gilbert Property NOP

Dear Ms. Henson:

The California Native Plant Society is a non-profit organization of more than 10,000 laypersons, professional botanists, and academics organized into 32 chapters throughout California. The Society's mission is to increase the understanding and appreciation of California's native plants and to preserve them in their natural habitat through scientific activities, education, and conservation.

The East Bay Chapter of the California Native Plant Society (EBCNPS) has been closely following the development of Eastern Oakley and the associated Dutch Slough Restoration Project. We would like to take this opportunity to thank the city for actively working to restore and preserve a significant portion of the Delta-Bay with its Dutch Slough Restoration. We are taking this opportunity to comment on the NOP for the Gilbert property. Our comments and concerns about this anticipated project are presented as bullet points below:

1. The project looks to almost completely develop all of the 120 acres of the land available for development, leaving little to none of the natural ecology of the area intact. This area, and its naturally occurring sandy and alkaline soils, is mapped as a priority protection area for EBCNPS. Nine state-wide rare plant species, and 20 locally rare species, meaning rare to the East Bay, are known to exist in the vicinity of the Sacramento River Delta. The Delta is also home to the sensitive Alkali Meadow plant community, listed as "very threatened" by the California Natural Diversity Database. Cismontane Interior Dunes, with unresolved vegetation and floristic differences from the plant community found in Antioch, is also found on the Delta. CNPS requests that the Environmental Impact Report reflect this important botanical diversity and the need to protect local and state-wide rare plant species as well as sensitive plant communities. We ask for the layout of the development to allow for more "natural area" acres, or open space, that may keep local soils and flora intact in this 120 acre tract.
2. Less than 3 acres are to be set aside for a community park located adjacent to a stormwater retention basin. With an estimated 510 residential units planned (and assuming a three person per residence occupancy rate), this leaves approximately 2 acres of open space and parkland per 1,000 residents. This ratio is as low as any urban area, a ratio which is 1/5 of Oakland's and 1/3 of

New York's[1]. We believe there is room for the City to better serve its future residents with both more parkland and open space/natural areas. It is understood that there will be adjacent natural areas (Dutch Slough), but please fully explain the access and opportunity for the planned Gilbert community to use open space outside north of the Contra Costa Canal, and how this justifies a meager 2 acres per 1,000 people in the local area?

3. Please explain the statement on page 3 of the NOP which states "*The neighborhoods would be woven together into a comprehensive community through the use of traffic and pedestrian circulation, parks and open spaces, coordinated landscape treatments and complimentary architectural styles.*" It is unclear how "parks and open spaces" can be woven together if there is *only one park* for the entire 120 acres? Again, we hope Oakley's vision can be expanded to actually *interweave* both parks and open space with housing.
4. CNPS requests that protection and management for state and federally listed species, special status species and sensitive plant communities be thoroughly addressed. Although it is understood that a Memorandum of Understanding (MOU) and a development agreement has been signed regarding this area, it does not preclude nor provide for mitigation for, state and federally listed plants and animals. Attached you will find a complete lists for all state-listed and special status plant species known to exist in the Sacramento River Delta. We would like to further explain the rarity of some of the plant species on the list. Listed as rare and threatened in California, CNPS List 1B species heartscale (*Atriplex cordulata*), is endemic to California and has a very limited distribution within the state and the East Bay. Locally rare species listed in Dianne Lake's *Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties*[2], have very limited ranges within the two East Bay counties. A1, A2, and A1x species are protected under sections 15380 and 15125(a) of the California Environmental Quality Act (CEQA), which addresses species of local concern and places special emphasis on environmental resources that are rare or unique to the area. One such A1 species found in Sacramento River Delta is boraxweed (*Nitrophila occidentalis*), know to be found in only one other location in the East Bay. Examples of the List A2 species found in the Delta include; valley lessingia (*Lessingia glandulifera* var. *glandulifera*) and California croton (*Croton californica*). Lastly, plants listed as B and C, or on the 'watch list,' are species in danger of becoming rare in the East Bay. All plants on the attached lists require appropriate protection and management to minimize fragmentation and ensure the survival of the remaining populations.
5. While the attached list contains the special status plant species known to exist in the Oakley area, there is potential for additional special status species to be found on the project site. For this reason, CNPS requests that the DEIR allow for complete surveys for federally and state listed species as well as special-status plants, bryophytes and wildlife that are protected under CEQA. We request that a thorough biological site assessment be conducted at the project

[1] Harnik, Peter. **2000**. *Inside City Parks*. Washington, D.C. ULI-the Urban Land Institute. Updated as of Nov., 2001.

[2] Lake, Dianne. **2004**. *Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties*. Seventh Edition. East Bay Chapter, California Native Plant Society. March 2004. (periodically updated)

site by qualified botanists and wildlife biologists to determine if suitable habitat exists for special-status plant, bryophyte, and wildlife species. If suitable habitat exists, in order for a project to comply with CEQA, focused protocol-level special-status species surveys should be conducted at the site prior to issuing a permit. CNPS requests that protocol-level plant surveys be conducted during the appropriate active growing stage of the life cycle of the target species. The surveys require adequate advance planning. Furthermore, we recommend that in addition to addressing federal and state listed species and CNPS List 1A, 1B and 2 species, the following species should also be addressed prior to issuing permits: plants and bryophytes that are CNPS List 1A, 1B, 2, 3 or 4 species, lichens on CDFG's Special Vascular Plants, Bryophytes, and Lichens List[3], plants listed in the *Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties*, and plants that are federal species of concern or federally-listed as species of local concern. This request is in accordance with CDFG Habitat Conservation Planning Branch recommendations for "...protection of plants which are regionally significant, such as locally rare species, disjunct populations of more common plants, or plants on the CNPS Lists 3 and 4."[4] CNPS would also like to request that sensitive plant communities that are tracked by CDFG, (like the Alkali Meadows) be addressed during the EIR process.

6. In order to fully identify issues and propose science based management decisions, a vegetation map of the existing vegetation series is required for the document. CNPS requests that a vegetation map, mapped at the plant series level, be prepared as part of the EIR.
7. CNPS requests on-site mitigation for the plant species on the attached list as well as any other federal or state listed species and special status species found during surveys. Negative impacts on these species should be avoided. This point directly ties into point #1 asking for local "natural areas" within the matrix of development.
8. EBCNPS would like to see an alternative explained in the EIR that impacts only half of the 120 acre Gilbert tract, with an equal amount of housing, in higher density, and a greater proportion of community open space and natural resource areas.
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[3] CDFG. 2004. California Department of Fish and Game Natural Diversity Database; Special Vascular Plants, Bryophytes, and Lichens List. July 2004 (periodically updated).
[4] Department of Fish and Game Habitat Conservation Branch. 2007. http://www.dfg.ca.gov/hcpb/species/t_e_spp/nat_plnt_consv.shtml. Accessed on February 21, 2007

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11. Finally, but maybe most importantly, EBCNPS is concerned with the impact of housing thousands of people at seven feet below sea level. Given the recent events in New Orleans, the City of Oakley takes on a poignant responsibility to protect its residents that it is putting within arms reach of natural disaster. EBCNPS members living near our Bay-Delta ecosystem deserve to understand how this development strategy and plan has changed in the light of the events of hurricane Katrina?

Thank you for taking our comments under consideration. Please feel free to contact us with questions at 510 734 0335.

Sincerely,

Lech Naumovich
Conservation Analyst
East Bay Chapter California Native Plant Society
PO Box 5597
Berkeley, CA 94705
510 734 0335

A-Ranked (CEQA-Protected) Native Plant Species of North Delta Region in Contra Costa County Compiled by CNPS, East Bay Chapter - Jan. 1 2005

(Statewide Rare Plants in Upper Case)

East Bay Rarity Rank	Species Name	Habitat
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A1	Bidens laevis	Freshwater Marsh; Misc. Wetlands
A2	Calystegia sepium ssp. limnophila	Misc. Wetlands
A2	Carex aquatilis var. dives	Misc. Wetlands
*A1	CAREX COMOSA	Forest; Grassland; Misc. Wetlands
A1	Centunculus minimus	Vernal Pools; Misc. Wetlands
A1	Cicuta maculata var. bolanderi	Brackish Marsh; Salt Marsh
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*A2	LIMOSELLA SUBULATA	Brackish Marsh; Freshwater Marsh
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A1	Lycopus americanus	Freshwater Marsh; Riparian
A1	Nitrophila occidentalis	Alkali areas
A2	Phalaris arundinacea	Riparian areas; Misc. Wetlands
A1	Polygonum amphibium var. stipulaceum (var. emersum is more common)	Freshwater Marsh
A2	Polygonum hydropiperoides	Freshwater Marsh; Riparian
*A1x	POTAMOGETON ZOSTERIFORMIS (HISTORICAL-1949)	Freshwater Marsh; Riparian; Misc. Wetlands
A1	Samolus parviflorus	Misc. Wetlands
*A1x	SCUTELLARIA LATERIFLORA? (Location uncertain)	Miscellaneous Wetlands
A2	Sparganium eurycarpum ssp. eurycarpum	Freshwater Marsh; Misc. Wetlands

Explanation of Ranks

***A1 or *A2**: Species in Alameda and Contra Costa counties listed as rare, threatened or endangered statewide by federal or state agencies or by the state level of CNPS.

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State of California DEPARTMENT OF WATER RESOURCES The Resources Agency

FAX COVER SHEET

To	Rochelle Henson	From	Tom Hall
Organization	City of Oakley	Organization	Department of Water Resources
Location (Building/ Room Number)		Location (Building/ Room Number)	
FAX Number	925-625-9194	FAX Number	916-651-9678
Telephone Number	925-625-7000	Telephone Number	916-651-7005
Total Number of Pages Sent (including this sheet)	3	Date	23-Feb-07

COMMENTS:
Following are comments on the NOP for the Gilbert Property Project. The original will follow via mail.

Discard copy ☐
Original letter to follow ☑

If you do not receive all pages, or have any problems with receiving this fax, please call: _____

DWR 4210 (Rev. 01/00)

STATE OF CALIFORNIA – THE RESOURCES AGENCY
ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

February 23, 2007

Ms. Rochelle Henson, Senior Planner
City of Oakley
3231 Main Street
Oakley, CA 94561

Subject: Revised Notice of Preparation of an Environmental Impact Report for the Proposed Gilbert Property Project (January 25, 2007)

The Department of Water Resources is the current landowner of about 1,166 acres north of the Project area. As you know, the site is currently being planned for restoration and public recreation in collaboration with the City of Oakley, State Coastal Conservancy, and California Bay Delta Authority. Therefore, we continue to be interested in surrounding development projects that may have potential impacts to the restoration lands. We have submitted prior comments on the Dutch Slough Properties Project (letter of September 29, 2006), and have included them in the comments below as the issues are still pertinent to the Gilbert Property Project and should be addressed in the environmental impact report (EIR).

Page 9, Cumulative Impacts. First , and perhaps most importantly, this section does not recognize the need to assess infrastructure impacts associated with the development project with the already proposed 1,166 acre Dutch Slough Restoration Project and the 55-acre City Park. These projects are mentioned elsewhere in the Notice of Preparation (NOP), but the description of the EIR does not indicate the cumulative impacts of adjacent development projects on biological, agricultural and other resources. Analysis of the project (510 new homes) should assess the impacts to the following: 1) Surrounding infrastructure. For example, what will be the Project demands on the adjacent park area? Or, what would be the need for higher quality levees to protect developed, as opposed to undeveloped, land?; 2) Water supply. What potential cumulative impacts are there if any water is withdrawn from Emerson Slough? and; 3) Biological resources. What are the impacts of the development on the success or challenges of the adjacent wetlands restoration project, such as the cumulative impacts of domestic animals or invasive plants from the development project on the restoration site (habitats and associated species)?

Page 3, Storm Drain. The NOP recognizes the need for analysis of storm water discharge. This should include impacts to surrounding water quality (i.e., Big Break and Emerson Slough) that will be the primary sources for the wetlands restoration. The NOP says that the outfalls have already been studied extensively for CEQA, but did that analysis assess water quality impacts for use of the surrounding waters for restoration purposes? In other words, what are these potential impacts to an increasing number of biological resources (i.e., fish and plants) that will be attracted to the restored wetlands or uses associated with the City Park?

The Dutch Slough Tidal Wetlands restoration project will enhance the aquatic resources of the region, and native fishes specifically. As such, an increased number of sensitive fish species (i.e., Delta smelt, juvenile salmon, and split tail) will use the adjacent tidal waters, including Emerson Slough, and be exposed to the storm water discharges and associated constituents at critical life cycle stages. Therefore, the EIR should evaluate the cumulative impacts of the increased storm water discharges on the restoration project, and specifically

to the aquatic fisheries resources. The evaluation should focus on the cumulative impacts of the restoration project bringing in more fish to the receiving waters and the EIR project impacts of urban storm water discharges upon these resources. An evaluation should be performed to identify and characterize the impacts of the physical and chemical constituent properties associated with the discharge water. The analyses should also include supporting information as to how any best management practices and treatment of the storm water will protect the most susceptible forms of fishes (i.e., the larval stages), especially during the spring and first winter storm discharge event. The EIR should include pre-and post-project water quality analyses near the discharge locations and restoration sites and avoid general reference to studies conducted in a larger geographical area.

Page 4, Water supply. The NOP indicates that the development may use water from Emerson Slough for recharging the project's landscaping pond. If so, this would be a drain on fresh water resources in the area. The EIR should assess how the quality of the storm drain discharge (noted above) will impact the landscape water supply uses. The EIR should also address the impacts of any water diversions on sensitive fish species utilizing the waterways, including the possible need for fish screens and reduced head velocities on the intake pumps.

Page 5, Community Components. The NOP seems to indicate that the development of this parcel was conditioned upon the Development Agreement with the City to donate portions of the property for a community park. If this is true, then there appears to be an irretrievable commitment of resources (*i.e.*, police and fire), that are not assessed in the document. In other words, if the two projects are linked, the EIR should also include an assessment of the fire and police impacts associated with the adjacent park area. Similarly, what are the impacts of these resources if they are needed to service new demands as a result of the residences? (i.e., more emergency responses or routine patrolling for the city park land and the restoration site as a result of increased trespassing, fires, vandalism, etc).

Thank you for the opportunity to submit comments about the NOP and related development project. We respectfully request full consideration and analyses of these issues in the Gilbert property project EIR. If you have any questions, please contact me at (916) 651-7005.

Sincerely,

Tom Hall

Tom Hall, Staff Environmental Scientist
Department of Water Resources
Delta Suisun Marsh Office
P.O. Box 942836
Sacramento, CA 94326-0001

cc: Jeff Melby, State Coastal Conservancy
Darcy Jones, California Bay Delta Authority

California Native Plant Society
East Bay Chapter
Conservation Committee

February 21, 2007

Ms. Rochelle Henson
Senior Planner
City of Oakley
3231 Main Street
Oakley, CA 94561
(925) 625-7000
(925) 625-9194 (fax)

RE: Gilbert Property NOP

Dear Ms. Henson:

The California Native Plant Society is a non-profit organization of more than 10,000 laypersons, professional botanists, and academics organized into 32 chapters throughout California. The Society's mission is to increase the understanding and appreciation of California's native plants and to preserve them in their natural habitat through scientific activities, education, and conservation.

The East Bay Chapter of the California Native Plant Society (EBCNPS) has been closely following the development of Eastern Oakley and the associated Dutch Slough Restoration Project. We would like to take this opportunity to thank the city for actively working to restore and preserve a significant portion of the Delta-Bay with its Dutch Slough Restoration. We are taking this opportunity to comment on the NOP for the Gilbert property. Our comments and concerns about this anticipated project are presented as bullet points below:

1. The project looks to almost completely develop all of the 120 acres of the land available for development, leaving little to none of the natural ecology of the area intact. This area, and its naturally occurring sandy and alkaline soils, is mapped as a priority protection area for EBCNPS. Nine state-wide rare plant species, and 20 locally rare species, meaning rare to the East Bay, are known to exist in the vicinity of the Sacramento River Delta. The Delta is also home to the sensitive Alkali Meadow plant community, listed as "very threatened" by the California Natural Diversity Database. Cismontane Interior Dunes, with unresolved vegetation and floristic differences from the plant community found in Antioch, is also found on the Delta. CNPS requests that the Environmental Impact Report reflect this important botanical diversity and the need to protect local and state-wide rare plant species as well as sensitive plant communities. We ask for the layout of the development to allow for more "natural area" acres, or open space, that may keep local soils and flora intact in this 120 acre tract.
2. Less than 3 acres are to be set aside for a community park located adjacent to a stormwater retention basin. With an estimated 510 residential units planned (and assuming a three person per residence occupancy rate), this leaves approximately 2 acres of open space and parkland per 1,000 residents. This ratio is as low as any urban area, a ratio which is 1/5 of Oakland's and 1/3 of

New York's[1]. We believe there is room for the City to better serve its future residents with both more parkland and open space/natural areas. It is understood that there will be adjacent natural areas (Dutch Slough), but please fully explain the access and opportunity for the planned Gilbert community to use open space outside north of the Contra Costa Canal, and how this justifies a meager 2 acres per 1,000 people in the local area?

3. Please explain the statement on page 3 of the NOP which states "*The neighborhoods would be woven together into a comprehensive community through the use of traffic and pedestrian circulation, parks and open spaces, coordinated landscape treatments and complimentary architectural styles.*" It is unclear how "parks and open spaces" can be woven together if there is *only one park* for the entire 120 acres? Again, we hope Oakley's vision can be expanded to actually *interweave* both parks and open space with housing.
4. CNPS requests that protection and management for state and federally listed species, special status species and sensitive plant communities be thoroughly addressed. Although it is understood that a Memorandum of Understanding (MOU) and a development agreement has been signed regarding this area, it does not preclude nor provide for mitigation for, state and federally listed plants and animals. Attached you will find a complete lists for all state-listed and special status plant species known to exist in the Sacramento River Delta. We would like to further explain the rarity of some of the plant species on the list. Listed as rare and threatened in California, CNPS List 1B species heartscale (*Atriplex cordulata),* is endemic to California and has a very limited distribution within the state and the East Bay. Locally rare species listed in Dianne Lake's *Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties*[2], have very limited ranges within the two East Bay counties. A1, A2, and A1x species are protected under sections 15380 and 15125(a) of the California Environmental Quality Act (CEQA), which addresses species of local concern and places special emphasis on environmental resources that are rare or unique to the area. One such A1 species found in Sacramento River Delta is boraxweed (*Nitrophila occidentalis)*; know to be found in only one other location in the East Bay. Examples of the List A2 species found in the Delta include; valley lessingia *(Lessingia glandulifera* var. *glandulifera)* and California croton *(Croton californica).* Lastly, plants listed as B and C, or on the 'watch list,' are species in danger of becoming rare in the East Bay. All plants on the attached lists require appropriate protection and management to minimize fragmentation and ensure the survival of the remaining populations.
5. While the attached list contains the special status plant species known to exist in the Oakley area, there is potential for additional special status species to be found on the project site. For this reason, CNPS requests that the DEIR allow for complete surveys for federally and state listed species as well as special-status plants, bryophytes and wildlife that are protected under CEQA. We request that a thorough biological site assessment be conducted at the project

[1] Harnik, Peter. **2000**. *Inside City Parks.* Washington, D.C. ULI-the Urban Land Institute. Updated as of Nov., 2001.

[2] Lake, Dianne. **2004**. *Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties.* Seventh Edition. East Bay Chapter, California Native Plant Society. March 2004. (periodically updated)

site by qualified botanists and wildlife biologists to determine if suitable habitat exists for special-status plant, bryophyte, and wildlife species. If suitable habitat exists, in order for a project to comply with CEQA, focused protocol-level special-status species surveys should be conducted at the site prior to issuing a permit. CNPS requests that protocol-level plant surveys be conducted during the appropriate active growing stage of the life cycle of the target species. The surveys require adequate advance planning. Furthermore, we recommend that in addition to addressing federal and state listed species and CNPS List 1A, 1B and 2 species, the following species should also be addressed prior to issuing permits: plants and bryophytes that are CNPS List 1A, 1B, 2, 3 or 4 species, lichens on CDFG's Special Vascular Plants, Bryophytes, and Lichens List[3], plants listed in the *Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties*, and plants that are federal species of concern or federally-listed as species of local concern. This request is in accordance with CDFG Habitat Conservation Planning Branch recommendations for "...protection of plants which are regionally significant, such as locally rare species, disjunct populations of more common plants, or plants on the CNPS Lists 3 and 4."[4] CNPS would also like to request that sensitive plant communities that are tracked by CDFG, (like the Alkali Meadows) be addressed during the EIR process.

6. In order to fully identify issues and propose science based management decisions, a vegetation map of the existing vegetation series is required for the document. CNPS requests that a vegetation map, mapped at the plant series level, be prepared as part of the EIR.
7. CNPS requests on-site mitigation for the plant species on the attached list as well as any other federal or state listed species and special status species found during surveys. Negative impacts on these species should be avoided. This point directly ties into point #1 asking for local "natural areas" within the matrix of development.
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Thank you for taking our comments under consideration. Please feel free to contact us with questions at 510 734 0335.

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510 734 0335

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DEPARTMENT OF CALIFORNIA HIGHWAY PATROL
California Highway Patrol
Contra Costa Area
5001 Blum Road
Martinez, CA 94553
(925) 646-4980
(800) 735-2929 (TT/TDD)
(800) 735-2922 (Voice)

February 15, 2007

File No.: 320.10458.14578

Ms. Rochelle Henson
City of Oakley
3231 Main Street
Oakley, CA 94561

Dear Ms. Henson:

Thank you for your correspondence dated, January 25, 2007, regarding an Environmental Impact Report (EIR) for the proposed Gilbert Property project. This proposed project will have little to no impact on the operations of the California Highway Patrol Contra Costa Area.

However, I would respectfully request a 24 hour on site emergency contact in the event of an emergency incident or operation that would affect your site and employees during the closure.

If you have any questions or other concerns please contact Sergeant Annie Garcia at (925) 646-4980. She can be reached Monday to Friday between the hours of 8:00 AM to 5:00 PM.

Sincerely,

J. U. CAHOON, Captain
Commander
Contra Costa Area

cc: Special Projects Section
Golden Gate Division

Department of Energy
Western Area Power Administration
Sierra Nevada Customer Service Region
114 Parkshore Drive
Folsom, California 95630-4710

FEB 9 2007

Ms. Rochell Henson
Senior Planner
City of Oakley
3231 Main Street
Oakley, CA 94561

Dear Ms. Henson:

Thank you for the opportunity to comment on the Notice of Preparation of an Environmental Impact Report for the Proposed Gilbert Property Project. The United States Department of Energy, Western Area Power Administration (Western), does not have any objections to the proposed use of Western's Olinda-Tracy 500-kilovolt transmission line easement provided the project does not interfere with our easement rights and are in accordance with our general guidelines. The developers should obtain license agreements from Western prior to construction. Please have the developer submit the project specific improvement plans to Western for review and approval prior to construction.

Enclosed is a copy of Western's general guidelines for the use of the easement area. If you have any questions, please contact Ms. Susan Sinclair at (916) 353-4600.

Sincerely,

Susan Sinclair
for

Heidi R. Miller
Realty Specialist

Enclosure

WESTERN AREA POWER ADMINISTRATION
GENERAL GUIDELINES CONCERNING THE USE OF
ELECTRIC TRANSMISSION LINE RIGHTS-OF-WAY

RE: Olinda-Tracy 500-kV Transmission Line (South of Sacramento River)

Western Area Power Administration (Western) owns a 200-foot easement along the length of the referenced transmission line. Western's rights within the easement include the right to construct, reconstruct, operate, maintain, and patrol the transmission line.

Rights usually reserved to the landowner include the right to cultivate, occupy, and use the land for any purpose that does not conflict with Western's use of its easement. To avoid potential conflicts, it is Western's policy to review all proposed uses within the transmission line easement. We consider (1) Safety of the public, (2) Safety of our Employees, (3) Restrictions covered in the easement, (4) Western's maintenance requirements, and (5) Protection of the transmission line structures and (6) Road or street crossings.

The outline below lists the considerations covered in the review. Please note that some items may overlap. This outline has been prepared only as a guide; each right-of-way encroachment is evaluated on an individual basis.

1. Safety Of The Public

   A. Approval depends, to a large extent, on the type and purpose of the development. Western takes our obligation to public safety very seriously. To insure our obligation, any use of the easement that will endanger the public will not be allowed or strongly discouraged (e.g., kite flying is prohibited).

   B. Metal fences must be grounded in accordance with applicable safety codes.

   C. Lighting standards shall not exceed a maximum height of 15 feet and not placed directly under the conductors (wires). All lighting standards must be grounded.

   D. All vegetation on the easement shall not exceed a maximum height of 12 feet at maturity.

   E. Structures are not allowed on the easement. Structures include, but are not limited to, buildings, sheds, swimming pools, basketball courts, tennis courts, gazebos, etc.

   F. No ground elevation changes are allowed which would reduce the ground to conductor clearance below 35 feet.

2. Safety Of Our Employees

Vegetation and encroachments into our right-of-way requires our crews to take action, which places them at risk. Therefore, any vegetation or encroachments that present a risk to our employees will not be allowed.

3. Restrictions Covered In The Easement

The easement prohibits the following: (1) any use that will interfere with or damage the equipment of the United States, (2) digging or drilling of a well, (3) erecting buildings or structures, (4) placing or piling up material within the easement boundaries. The easement gives Western the right to remove trees, brush or other objects interfering with the safe operation and maintenance of the line.

4. Maintenance Requirements

A. Berms shall not be placed next to the base of the transmission line tower.

B. Any proposed improvements to the easement (including grading, parking lot, lighting, landscaping, fences, etc.), must be reviewed by Western to assure that they will not interfere with the safe operation and maintenance of the transmission line.

C. A 14-foot gate is required in any fences that cut off access along our easement.

D. Thirty (30) feet of unobstructed access is to be maintained around towers.

5. Protection Of The Transmission Line Structure (Towers, Guy Wires, etc.)

A. If the proposed use increases the possibility of a motor vehicle hitting the transmission line structure, an appropriate guardrail shall be installed to protect the structure (e.g., parking lots or roads).

B. Trench digging, which would weaken or damage the structure, is prohibited.

C. No ground elevation changes are allowed within 20 feet of the structure, and in no case shall the conductor to ground clearance be reduced below code limitation.

6. Roads Or Street Crossings

Western's policy is to have roads or streets cross the easement at right angles, or as nearly at right angles as possible, so that a minimum area of the road or street lies within the transmission line easement.

Requests for permission to use the transmission line right-of-way should be submitted to: Western Area Power Administration, Sierra Nevada Regional Office, Attn: Realty Officer, 114 Parkshore Drive, Folsom, CA 95630.

TRI DELTA TRANSIT
EASTERN CONTRA COSTA TRANSIT AUTHORITY
801 Wilbur Avenue
Antioch, California 94509
925.754.6622
925.757.2530 FAX

August 15, 2006

City of Oakley
Community Development Department
Attn: R. Henson
3231 Main Street
Oakley, CA 94561

Re: Notice of Preparation of an Environmental Impact Report For the Proposed Gilbert Property.

Dear Ms. Henson:

Tri Delta Transit has reviewed the notice of preparation of an Environmental Impact Report (EIR) for the development referenced above. We previously reviewed the plans for the Gilbert Ranch development and found that they included two bus turnouts along Cypress Road and one bus turnout along Sellers Avenue; we consider this to be an important step toward ensuring that the Cypress Corridor will be transit accessible at buildout. Although no specific mention of these turnouts was made in this Notice, we expect to see them in the EIR as "transit facilities… discussed and analyzed to ensure adequacy of the proposed facilities based upon existing City of Oakley plans".

Thank you for the opportunity to comment.

Sincerely,

Justin Tracy

Justin Tracy
Intern

JT:jt

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5505
FAX (510) 286-5559
TTY (800) 735-2929

Flex your power!
Be energy efficient!

January 25, 2007

CC004958
CC-4-R34.92
SCH 2007012075

Rochelle Henson
City of Oakley
3231 Main Street
Oakley, CA 94561

Dear Ms. Henson:

Gilbert Property Project – Notice of Preparation

Thank you for including the California Department of Transportation (Department) in the environmental review for the proposed project. The comments presented below are based on the Notice of Preparation for the Gilbert Property Project Draft Environmental Impact Report (DEIR). As lead agency, the City of Oakley is responsible for all project mitigation, including improvements to state highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. Any required roadway improvements should be completed prior to issuance of the project's building permit. While an encroachment permit is only required when the project involves work in the State Right of Way (ROW), the Department will not issue an encroachment permit until our concerns are adequately addressed.

Therefore, we strongly recommend that the lead agency ensure resolution of the Department's concerns prior to submittal of an encroachment permit application. Further comments will be provided during the encroachment permit process; see the end of this letter for more information regarding encroachment permits.

Traffic Impact Analysis

The Department is primarily concerned with impacts to the State Highway system. Specifically, a detailed Traffic Impact Analysis (TIA) should identify impacts to State Route 4 with and without the proposed Gilbert Property Project traffic. The TIA should include, but is not limited to the following:

1. Information on the project's traffic impacts in terms of trip generation, distribution, and assignment. The assumptions and methodologies used in compiling this information should be addressed.

2. Average Daily Traffic (ADT) and AM and PM peak hour volumes on all significantly affected streets and highways, including crossroads and controlling intersections.

3. Schematic illustration of the traffic conditions for: 1) existing, 2) existing plus project, and 3) cumulative for the intersections in the project area.

4. Calculation of cumulative traffic volumes should consider all traffic-generating developments, both existing and future, that would affect the State Highway facilities being evaluated.

5. Mitigation measures should consider highway and non-highway improvements and services. Special attention should be given to the development of alternate solutions to circulation problems that do not rely on increased highway construction.

6. All mitigation measures proposed should be fully discussed, including financing, scheduling, implementation responsibilities, and lead agency monitoring.

We encourage the City of Oakley to coordinate preparation of the study with our office, and we would appreciate the opportunity to review the scope of work. Please see the Caltrans' *"Guide for the Preparation of Traffic Impact Studies"* at the following website for more information: http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

We look forward to reviewing the TIA, including Technical Appendices, and DEIR for this project. Please send two copies to the address at the top of this letterhead, marked ATTN: Christian Bushong, Office of Transit and Community Planning.

Encroachment Permit

Any work or traffic control within the State ROW requires an encroachment permit that is issued by the Department. Traffic-related mitigation measures will be incorporated into the construction plans during the encroachment permit process. See the following website link for more information: http://www.dot.ca.gov/hq/traffops/developserv/permits/

To apply for an encroachment permit, submit a completed encroachment permit application, environmental documentation, and five (5) sets of plans which clearly indicate State ROW to the address at the top of this letterhead, marked ATTN: Michael Condie, Office of Permits.

Should you require further information or have any questions regarding this letter, please call Christian Bushong of my staff at (510) 286-5606.

Sincerely,

TIMOTHY C. SABLE
District Branch Chief
IGR/CEQA

c: State Clearinghouse

STATE OF CALIFORNIA

Arnold Schwarzenegger, *Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

January 29, 2007

Rochelle Henson
City of Oakley
3231 Main Street
Oakley, CA 94561

RE: Gilbert Property Project, SCH# 2007012075

Dear Ms. Henson:

As the state agency responsible for rail safety within California, we recommend that any development projects planned adjacent to or near the rail corridor in the City be planned with the safety of the rail corridor in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to railroad right-of-way.

Safety factors to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes and appropriate fencing to limit the access of trespassers onto the railroad right-of-way. Any project that includes a modification to an exiting crossing or proposes a new crossing is legally required to obtain authority to construct from the Commission. If the project includes a proposed new crossing, the Commission will be a responsible party under CEQA and the impacts of the crossing must be discussed within the environmental documents.

Specific concerns include the potential impact on the existing at-grade highway-rail crossing on East Cypress Road, from this, and the other numerous projects approved or under consideration in the area.

The above-mentioned safety improvements should be considered when approval is sought for the new development. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists and pedestrians in the City.

If you have any questions in this matter, please call me at (415) 703-2795.

Very truly yours,

Kevin Boles
Environmental Specialist
Rail Crossings Engineering Section
Consumer Protection and Safety Division

cc: Terrel Anderson, Union Pacific Railroad

FAX
(925) 625-0169

IRONHOUSE SANITARY DISTRICT
450 Walnut Meadows Drive • P.O. Box 1105 • Oakley, CA 94561

Telephone
(925) 625-2279

January 31, 2007

RECEIVED
FEB 01 2007
CITY OF OAKLEY

Ms. Rochelle Henson
City of Oakley
3231 Main Street
Oakley, CA 94561

SUBJECT: GILBERT RANCH
Notice of Preparation of an Environmental Impact Report

Dear Ms. Henson:

Ironhouse Sanitary District (ISD) offer the following input on the Notice of Preparation of an Environmental Impact Report for the Gilbert Ranch project:

- To serve the project a new Regional Pump Station on the Gilbert property is proposed. Originally to serve the Burroughs, Gilbert and Emerson properties the Regional Pump Station was located on the Emerson Property. This proposed Regional Pump Station is envisioned to serve all the original Dutch Slough Properties as well as areas to the south of Cypress Road. ISD would like to minimize the number of sub-regional pump stations constructed.

- Construction of a new 14-inch forcemain will be required. The new Regional Pump Station shall pump into the new forcemain not the existing forcemain. The new 14-inch forcemain is proposed to begin east of Jersey Island Road and run down Cypress Road, turn north on Sellers to the USBR canal ROW and be located in the ROW then cross over onto ISD property at the junction of Marsh Creek and the Contra Costa Canal. ISD is in the process of designing a casing for the 14-inch as it crossings Contra Costa Water District's proposed canal pipeline.

- Flow from the Gilbert project and surrounding areas plus that from the East Cypress Corridor and Bethel Island will necessitate upsizing the current 18-inch truck sewer which conveys flows to the wastewater treatment plant to a 36-inch trunk sewer.

- ISD is interested in seeing gravity sewer service be provided to areas within our service area south of Cypress Road between Jersey Island Road and the western edge of the Emerson Property. Design of sewer facilities for the Gilbert property should take this into account.

- It is suggested a meeting with all developers associated with development in the area occur as development of these areas has a tremendous impact on sewer collection and treatment facilities.

Sincerely
IRONHOUSE SANITARY DISTRICT

Jennifer M Skrel
District Engineer

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5505
FAX (510) 286-5559
TTY (800) 735-2929

Flex your power!
Be energy efficient!

February 2, 2007

CC004958
CC-4-R34.92
SCH 2007012075

Rochelle Henson
City of Oakley
3231 Main Street
Oakley, CA 94561

Dear Ms. Henson:

Gilbert Property Project – Notice of Preparation

Thank you for including the California Department of Transportation (Department) in the environmental review for the proposed project. The comments presented below are based on the Notice of Preparation for the Gilbert Property Project Draft Environmental Impact Report (DEIR). As lead agency, the City of Oakley is responsible for all project mitigation, including improvements to state highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. Any required roadway improvements should be completed prior to issuance of the project's building permit. While an encroachment permit is only required when the project involves work in the State Right of Way (ROW), the Department will not issue an encroachment permit until our concerns are adequately addressed.

Therefore, we strongly recommend that the lead agency ensure resolution of the Department's concerns prior to submittal of an encroachment permit application. Further comments will be provided during the encroachment permit process; see the end of this letter for more information regarding encroachment permits.

Traffic Impact Analysis

The Department is primarily concerned with impacts to the State Highway system. Specifically, a detailed Traffic Impact Analysis (TIA) should identify impacts to State Route 4 with and without the proposed Gilbert Property Project traffic. The TIA should include, but is not limited to the following:

1. Information on the project's traffic impacts in terms of trip generation, distribution, and assignment. The assumptions and methodologies used in compiling this information should be addressed.

2. Average Daily Traffic (ADT) and AM and PM peak hour volumes on all significantly affected streets and highways, including crossroads and controlling intersections.

3. Schematic illustration of the traffic conditions for: 1) existing, 2) existing plus project, and 3) cumulative for the intersections in the project area.

4. Calculation of cumulative traffic volumes should consider all traffic-generating developments, both existing and future, that would affect the State Highway facilities being evaluated.

5. Mitigation measures should consider highway and non-highway improvements and services. Special attention should be given to the development of alternate solutions to circulation problems that do not rely on increased highway construction.

6. All mitigation measures proposed should be fully discussed, including financing, scheduling, implementation responsibilities, and lead agency monitoring.

We encourage the City of Oakley to coordinate preparation of the study with our office, and we would appreciate the opportunity to review the scope of work. Please see the Caltrans' *"Guide for the Preparation of Traffic Impact Studies"* at the following website for more information: http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

We look forward to reviewing the TIA, including Technical Appendices, and DEIR for this project. Please send two copies to the address at the top of this letterhead, marked ATTN: Christian Bushong, Office of Transit and Community Planning.

Encroachment Permit

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To apply for an encroachment permit, submit a completed encroachment permit application, environmental documentation, and five (5) sets of plans which clearly indicate State ROW to the address at the top of this letterhead, marked ATTN: Michael Condie, Office of Permits.

Should you require further information or have any questions regarding this letter, please call Christian Bushong of my staff at (510) 286-5606.

Sincerely,

TIMOTHY C. SABLE
District Branch Chief
IGR/CEQA

c: State Clearinghouse

SE 2-2-07

CITY of OAKLEY
A PLACE for FAMILIES in the HEART of the DELTA

DATE: January 25, 2007

TO: Responsible Agencies, Trustee Agencies, and Interested Persons

FROM: Rochelle Henson, Senior Planner
City of Oakley

SUBJECT: REVISED NOTICE OF PREPRARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED GILBERT PROPERTY PROJECT

The City of Oakley Community Development Department is the lead agency for the preparation of an Environmental Impact Report (EIR) for the proposed Gilbert Property project. The scope of the EIR has been proposed based upon a determination by the City of Oakley. The City of Oakley has directed the preparation of this EIR in compliance with the California Environmental Quality Act (CEQA).

Once a decision is made to prepare an EIR, the lead agency must prepare an NOP to inform all responsible and trustee agencies that an EIR would be prepared (CEQA Guidelines Section 15082). The purpose of the NOP is to provide agencies with sufficient information describing both the proposed project and the potential environmental effects to enable the agencies to make a meaningful response as to the scope and content of the information to be included in the EIR. The City of Oakley is also soliciting comments on the scope of the EIR from interested persons.

BACKGROUND

The planning decision to convert the proposed project site for development purposes was made in 1990 when Contra Costa County certified a countywide General Plan EIR and adopted the 1990-2005 General Plan Update redesignating the project site for development as part of an approximate 1,500-acre area from Agriculture to Mixed Use (M-8) development within the County's Urban Limit Line. In 1997, the County for CEQA purposes relied upon the General Plan EIR and approved development agreements providing vested rights to develop the M-8 area. Following annexation of the M-8 area, which included the project site, to the City of Oakley in 1999, the City prepared and certified the initial Oakley General Plan EIR.

In the fall of 2001, the original owner of the Gilbert property, along with the original adjacent landowners Emerson and Burroughs, submitted an application to Cal-Fed seeking funding for a proposal to sell portions of their properties north of the Contra Costa Canal for the purpose of creating the Dutch Slough Tidal Marsh Restoration Project. The owners further indicated their intention to develop the remaining land to the south of the Canal.

On September 23, 2002, the Oakley City Council approved a Memorandum of Understanding (MOU) between the City and the property owners summarizing the terms of basic understanding between the City and the owners regarding the disposition of the northern and southern portions of the Dutch Slough Properties and future planning for the southern properties. As part of the Southern Property Disposition Agreement, the property owners agreed to transfer ownership of portions of the southern properties and northern properties to the City. Portions of the northern properties were to be transferred to the City for developing a 55-acre community park and related public recreational facilities.

WILLIAM B. WALKER, M.D.
HEALTH SERVICES DIRECTOR
SHERMAN L. QUINLAN, REHS, MPH
ENVIRONMENTAL HEALTH DIRECTOR
RICHARD R. LEE, REHS
ENVIRONMENTAL HEALTH ASSISTANT DIRECTOR

CONTRA COSTA
HEALTH SERVICES

CONTRA COSTA
ENVIRONMENTAL HEALTH
2120 Diamond Blvd., Suite 200
Concord, California 94520
Ph (925) 646-5225
Fax (925) 646-5168
www.cocoeh.org

February 5, 2007

City of Oakley, Ms. Rochelle Henson
3231 Main St.
Oakley, CA 94561

RE: Project Number: Gilbert Property Project
Location: North side of Cypress Rd, East of Sellers, Oakley
Assessor's Parcel Number: 032-081-016

Dear Ms. Hanson:

The following must be completed as a condition of your Use Permit/Rezone:

1. **WATER SUPPLY:** The means of providing a safe and reliable supply of water for the project.

   A. **Public Water System**

   1. Connect to the Diablo Water District public water system.

   2. Protect the public water system from backflow contamination. Contact a water system representative for details.

2. **WASTEWATER DISPOSAL:**
   Method of providing safe and reliable wastewater disposal for the project.

   A. **Public Sewer System**

   1. Connect to the Ironhorse public sewer system.

   2. Connect all existing structures containing plumbing fixtures to the sewer system, which will serve the project.

3. **ADDITIONAL REQUIREMENTS**

   1. Destroy all on-site wells and septic tanks pursuant to Contra Costa Environmental Health requirements. Appropriate permits and inspections for this work shall be obtained. For further information obtain the handouts Septic Tank Destruction Requirements and Well Destruction Guidelines.

   2. Destroy all abandoned on-site wells and septic tanks pursuant to Contra Costa Environmental Health requirements. Appropriate permits and inspections for this work shall be obtained. For further information obtain the handouts *Septic Tank Destruction Requirements* and *Well Destruction Guidelines.*

3. All applicable fees must be paid.

4. MISCELLANEOUS

Please note that due to the complexity of some projects, additional information may be required at any stage of the review process.

If you have any questions, please contact me at (925) 646-5225 x218, weekdays between 8:00 a.m. and 9:00 a.m.

Sincerely,

Jeff Edwards

Jeff Edwards, R.E.H.S.
Senior Environmental Health Specialist

JE:cmw

EHLUT.29
8/00

RECEIVED
FEB 07 2007
CITY OF OAKLEY

Department of Toxic Substances Control

Linda S. Adams
Secretary for
Environmental Protection

Maureen F. Gorsen, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Arnold Schwarzenegger
Governor

February 5, 2007

Ms. Rochelle Henson
City of Oakley
3231 Main Street
Oakley, CA 94561

Dear Ms. Henson:

The Department of Toxic Substances Control (DTSC) has reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR), dated January 17, 2007, for the proposed Gilbert Property Project. As you may be aware, DTSC oversees the cleanup of hazardous substance release sites pursuant to the California Health and Safety Code, Division 20, Chapter 6.8. As a potential Responsible Agency, DTSC is submitting comments to ensure that the California Environmental Quality Act (CEQA) documentation prepared for this project adequately addresses any remediation of hazardous substance releases that might be required as part of the project.

The proposed project would consist of the construction of approximately 510 residential units, with the majority being single-family dwellings, as well as other community components such as parks, trails, and a storm water detention pond. The EIR should discuss the current and historical land use of the project site and whether there have been any industrial or agricultural operations which may have caused a release of hazardous substances. The NOP mentions the former agricultural use of the project site, which would indicate the need to assess whether any pesticide use has occurred on the property that may pose a potential risk to human health. The EIR should also discuss the results of site investigations which have already been performed and public records which identify any possible or known on-site contamination that could pose a potential risk to the project site's future occupants or its neighbors. If further site characterization is necessary, DTSC recommends that soil, and possibly groundwater, on the project site be sampled and analyzed for any contaminants of potential concern that are identified in the course of the above mentioned records review prior to the completion of the EIR. The results of all site investigations should be summarized in the EIR. Screening levels or any risk assessments that are used in determining whether contamination poses a potential, significant human health or environmental risk should be identified and discussed in the EIR. Project planners are referred to the California Human Health Screening Levels (CHHSLs) and the US-EPA Preliminary Remediation Goals (PRGs) as potentially-applicable screening levels. If volatile organic compounds

are present in soil or groundwater, the potential human health risk from vapor intrusion into future buildings will need to be considered.

If remediation activities are to be implemented as part of the project, these activities should be discussed in the EIR along with the cleanup levels that will be applied and the anticipated regulatory agency oversight. Potential impacts associated with the remediation activities should also be addressed in the EIR. For example, if the remediation activities include soil excavation, the EIR should include: (1) an assessment of air impacts and health impacts associated with the excavation activities; (2) identification of any applicable local standards which may be exceeded by the excavation activities, including dust and noise levels; (3) transportation impacts from the removal or remedial activities; and (4) risk of upset should there be an accident during the transport of contaminated soil.

DTSC can assist your agency in overseeing characterization and cleanup activities through our Voluntary Cleanup Program. A fact sheet describing this program is enclosed. We are aware that projects such as this one are typically on a compressed schedule, and in an effort to use the available review time efficiently, we request that DTSC be included in any meetings where issues relevant to our statutory authority are discussed.

Please contact Jovanne Villamater at (510) 540-3876 if you have any questions. Thank you in advance for your consideration of our comments.

Sincerely,

Mark Piros

Mark Piros, P.E., Unit Chief
Northern California - Coastal Cleanup Operations Branch

Enclosure

cc: see next page

cc: without enclosure

Governor's Office of Planning and Research
State Clearinghouse
P. O. Box 3044
Sacramento, California 95812-3044

Guenther Moskat
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

California Environmental Protection Agency
Department of Toxic Substances Control

The Voluntary Cleanup Program

The California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) has introduced a streamlined program to protect human health, cleanup the environment and get property back to productive use. Corporations, real estate developers, local and state agencies entering into Voluntary Cleanup Program agreements will be able to restore properties quickly and efficiently, rather than having their projects compete for DTSC's limited resources with other low-priority hazardous waste sites. This fact sheet describes how the Voluntary Cleanup Program works.

Prior to initiation of the Voluntary Cleanup Program, project proponents had few options for DTSC involvement in cleaning up low-risk sites. DTSC's statutory mandate is to identify, prioritize, manage and cleanup sites where a release of hazardous substances has occurred. For years, the mandate meant that, if the site presented grave threat to public health or the environment, then it was listed on the State Superfund list and the parties responsible conducted the cleanup under an enforcement order, or DTSC used state funds to do so. Because of staff resource limitations, DTSC was unable to provide oversight at sites which posed lesser risk or had lower priority.

DTSC long ago recognized that no one's interests are served by leaving sites contaminated and unusable. The Voluntary Cleanup Program allows motivated parties who are able to fund the cleanup -- and DTSC's oversight -- to move ahead at their own speed to investigate and remediate their sites. DTSC has found that working cooperatively with willing and able project proponents is a more efficient and cost-effective approach to site investigation and cleanup. There are four steps to this process:

- / Eligibility and Application
- / Negotiating the Agreement
- / Site Activities
- / Certification and Property Restoration

The rest of this fact sheet describes those steps and gives DTSC contacts.

October 2002

The Voluntary Cleanup Program

Step 1: Eligibility and Application

Most sites are eligible. The main exclusions are if the site is listed as a Federal or State Superfund site, is a military facility, or if it falls outside of DTSC's jurisdiction, as in the case where a site contains only leaking underground fuel tanks. Another possible limitation is if another agency currently has oversight, e.g., a county (for underground storage tanks). The current oversight agency must consent to transfer the cleanup responsibilities to DTSC before the proponent can enter into a Voluntary Cleanup Program agreement. Additionally, DTSC can enter into an agreement to work on a specified element of a cleanup (risk assessment or public participation, for example), if the primary oversight agency gives its consent. The standard application is attached to this fact sheet.

If neither of these exclusions apply, the proponent submits an application to DTSC, providing details about site conditions, proposed land use and potential community concerns. No fee is required to apply for the Voluntary Cleanup Program.

Step 2: Negotiating the Agreement

Once DTSC accepts the application, the proponent meets with experienced DTSC professionals to negotiate the agreement. The agreement can range from services for an initial site assessment, to oversight and certification of a full site cleanup, based on the proponent's financial and scheduling objectives.

The Voluntary Cleanup Program agreement specifies the estimated DTSC costs, scheduling for the project, and DTSC services to be provided. Because every project must meet the same legal and technical cleanup requirements as do State Superfund sites, and because DTSC staff provide oversight, the proponent is assured that the project will be completed in an environmentally sound manner.

In the agreement, DTSC retains its authority to take enforcement action if, during the investigation or cleanup, it determines that the site presents a serious health threat, and proper and timely action is not otherwise being taken. The agreement also allows the project proponent to terminate the Voluntary Cleanup Program agreement with 30 days written notice if they are not satisfied that it is meeting their needs.

Step 3: Site Activities

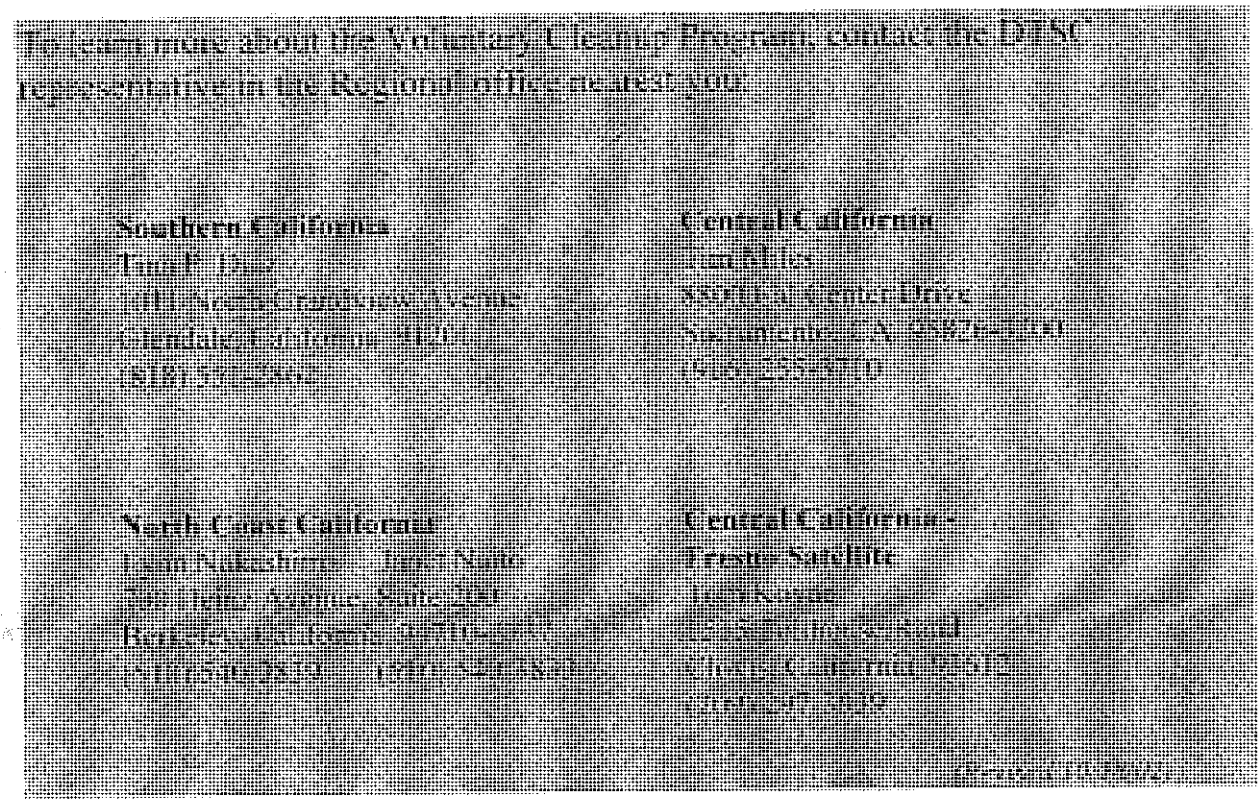
Prior to beginning any work, the proponent must have: signed the Voluntary Cleanup Program agreement; made the advance payment; and committed to paying all project costs, including those associated with DTSC's oversight. The project manager will track the project to make sure that DTSC is on schedule and within budget. DTSC will bill its costs quarterly so that large, unexpected balances will not occur.

Once the proponent and DTSC have entered into a Voluntary Cleanup Program agreement, initial site assessment, site investigation or cleanup activities may begin. The proponent will find that DTSC's staff includes experts in every vital area. The assigned project manager is either a highly-qualified Hazardous Substances Scientist or Hazardous Substances Engineer. That project manager has the support of well-trained DTSC toxicologists, geologists, industrial hygienists and specialists in public involvement.

The project manager may call on any of these specialists to join the team, providing guidance, review, comment and, as necessary, approval of individual documents and other work products. That team will also coordinate with other agencies, as appropriate, and will offer assistance in complying with other laws, such as the Resource Conservation and Recovery Act.

Step 4: Certification and Property Restoration

When remediation is complete, DTSC will issue either a site certification of completion or a "No Further Action" letter, depending on the project circumstances. This means "The Site" is now property that is ready for productive economic use.



United States Department of the Interior

BUREAU OF RECLAMATION
South-Central California Area Office
1243 N Street
Fresno, California 93721-1813

IN REPLY REFER TO:

SCC-424
ENV-6.00
Contra Costa

FEB 22 2007

RECEIVED
FEB 26 2007
CITY OF OAKLEY

Ms. Rochelle Henson
Senior Planner
City of Oakley
3231 Main Street
Oakley, CA 94561

Subject: Revised Notice of Preparation of an Environmental Impact Report for the Proposed Gilbert Property Project

Dear Ms. Henson:

The Bureau of Reclamation has reviewed the above-referenced Notice of Preparation (NOP). As noted in the NOP, the proposed Gilbert Property project will require an inclusion into Contra Costa Water District's water service area under their Water Service Contract for Central Valley Project water. The NOP notes that evidence of compliance with the Endangered Species Act and other federal regulations must be submitted to Reclamation with an inclusion application.

It should also be noted that Reclamation's approval of the Gilbert Property inclusion must comply with the National Historic Preservation Act because it is the type of activity that has the potential to affect historic properties. We will consult with the State Historic Preservation Officer on the inclusion and a cultural resources report will be submitted in compliance with the 36 CFR Part 800 regulations. This report must meet federal and Reclamation reporting requirements before it can be submitted. These requirements differ from what is required under the California Environmental Quality Act for historical and cultural resources. For any questions regarding this issue, you may contact Patrick Welch, Archaeologist, at 916-978-5040.

Reclamation thanks you for the opportunity to comment on the NOP. For other questions, please contact Shauna McDonald, Wildlife Biologist, at 559-487-5202, or at 559-487-5933 for the hearing impaired.

Sincerely,

Kathy Wood

Kathy Wood
Chief, Resource Management Division

EAST BAY REGIONAL PARK DISTRICT

PARKS FOR THE FUTURE

CITY OF OAKLEY
FEB 23 2007
RECEIVED

February 21, 2007

Rochelle Henson
City of Oakley
3231 Main Street
Oakley, CA 94561

RE: Delta DeAnza Regional Trail
Revised NOP for the Gilbert Property

Dear Ms. Henson:

Thank you for the opportunity to provide comments on the revised notice of preparation of an EIR for the Gilbert Property project.

Under the heading of "Trails" on page 6 of the NOP, it is noted that the project would construct a trail along the north edge of the property adjacent to the CCWD/USBR canal. This corridor is shown on East Bay Regional Park District's 1997 Master Plan as the Marsh Creek to Rock Slough segment of the Delta DeAnza Regional Trail. This major east-west regional trail currently extends from Bay Point through Pittsburg, Antioch and Oakley, a distance of over 18 miles. Ultimately, the trail will connect to the Iron Horse Trail near Buchanan Field in Concord, providing a non-motorized corridor from the Delta through Contra Costa County to Alameda County's Tri-Valley communities.

The proposed trail along the north edge of the property should be constructed to Class 1 standards as delineated in Chapter 1000 of the Caltrans Highway Design Manual. The trail should be designed and constructed in such a manner to seamlessly connect to the proposed trails on adjacent parcels within the specific plan area, and the existing Marsh Creek Trail. Gates, entry structures and signage should conform to EBRPD to provide continuity along the length of the trail.

We look forward to the opportunity to review the draft environmental document when it becomes available.

Yours truly,

Jim Townsend
Trails Development Program Manager
510-544-2602

2950 Peralta Oaks Court P.O. Box 5381 Oakland, CA 94605-0381
TEL 510 635-0135 FAX 510 569-4319 TDD 510 633-0460 www.ebparks.org

LAND RESOURCE PROTECTION

DEPARTMENT OF CONSERVATION

DIVISION OF LAND RESOURCE PROTECTION

801 K STREET • MS 18-01 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 324-0850 • **FAX** 916 / 327-3430 • **TDD** 916 / 324-2555 • **WEBSITE** conservation.ca.gov

February 20, 2007

VIA FACSIMILE (925) 625-9194
Ms. Rochelle Henson
City of Oakley
3231 Main Street
Oakley, CA 94561

Subject: Notice of Preparation (NOP) for the Gilbert Property Project

Dear Ms. Henson:

The Department of Conservation's (Department) Division of Land Resource Protection (Division) monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other agricultural land conservation programs. The Division has reviewed the above NOP and offers the following comments.

The Gilbert Property project involves the development of 120-acres of land in the City of Oakley (Contra Costa County). The project would include approximately 510 residential units (single-family dwellings). The project is located on the north of Cypress Road, east of Sellers Avenue, west of Little Dutch Slough, and bounded on the north by the Contra Costa Water District Canal (CCWD/USBR Canal). The NOP also notes that there may be agricultural land conversions and affected Williamson Act lands within the project area. Therefore, the Division recommends that the draft EIR (DEIR) address the following items to provide a comprehensive discussion of potential impacts of the project on agricultural land and activities.

Agricultural Setting of the Project

- Location and extent of Prime Farmland of Statewide Importance, Unique Farmland, and other types of farmland in and adjacent to the project area.
- Current and past agricultural use of the project area. Include data on the types of crops grown, and crop yields and farmgate sales values.

To help describe the full agricultural resource value of the soils on the site, we recommend the use of economic multipliers to assess the total contribution of the site's potential or actual agricultural production to the local, regional and state economies. State and Federal agencies such as the University of California Cooperative Extension Service and the United States Department of Agriculture (USDA) are sources of economic multipliers.

Project Impacts on Agricultural Land

- Type, amount, and location of farmland conversion resulting directly from project implementation.
- Type, amount, and location of farmland conversion resulting indirectly from project implementation through growth inducement.
- Impacts on current and future agricultural operations; e.g., land-use conflicts, increases in land values and taxes, vandalism, etc.
- Incremental project impacts leading to cumulatively considerable impacts on agricultural land. This would include impacts from the proposed project as well as impacts from past, current and probable future projects.

Impacts on agricultural resources may also be quantified and qualified by use of established thresholds of significance (California Code of Regulations Section 15064.7). The Division has developed a California version of the USDA Land Evaluation and Site Assessment (LESA) Model, a semi-quantitative rating system for establishing the environmental significance of project-specific impacts on farmland. The model may also be used to rate the relative value of alternative project sites. The LESA Model is available on the Division's website listed on the next page.

Project Alternatives and Mitigation Measures

Feasible alternatives to the project's location or configuration that would lessen or avoid farmland conversion impacts should be considered in the environmental document. If there are no feasible project alternatives to avoid impacts on agricultural land, then mitigation measures should be considered.

One mitigation measure that should be considered is the purchase of agricultural conservation easements on land of at least equal quality and size as partial compensation for the direct loss of agricultural land, as well as for the mitigation of growth-inducing and cumulative impacts on agricultural land. We highlight this measure because of its growing acceptance and use by lead agencies as mitigation under the California Environmental Quality Act.

Mitigation using conservation easements can be implemented by at least two alternative approaches: the outright purchase of conservation easements tied to the project, or via the donation of mitigation fees to a local, regional or statewide organization or agency, including land trusts and conservancies, whose purpose includes the purchase, holding and maintenance of agricultural conservation easements. Whatever the approach, the conversion of agricultural land should be deemed an impact of at least regional significance and the search for mitigation lands conducted regionally, and not limited strictly to lands within the Bloomington area.

Information about conservation easements is available on the Division's website, or by contacting the Division at the address and phone number listed below. The Department's website address is:

http://www.conservation.ca.gov/DLRP/

Of course, the use of conservation easements is only one form of mitigation that should be considered. Any other feasible mitigation measures should also be considered.

Williamson Act Lands

A project is deemed to be of statewide, regional or area-wide significance if it will result in cancellation of a Williamson Act contract for a parcel of 100 or more acres [California Code of Regulations Section 15206(b)(3)]. Since lands under Williamson Act contract and in agricultural preserves exist in the planning area, the Department recommends that the following information be provided in the DEIR:

- A map detailing the location of agricultural preserves and contracted land within each preserve. The DEIR should also tabulate the number of Williamson Act acres, according to land type (e.g., prime or non-prime agricultural land), which could be impacted directly or indirectly by the project.
- A discussion of Williamson Act contracts that may be terminated in order to implement the project. The DEIR should discuss the impacts that termination of Williamson Act contracts would have on nearby properties also under contract; i.e., growth-inducing impacts (in the sense that the removal of contract protection not only lifts a barrier to development, but results in higher property taxes, and thus, an incentive to shift to a more intensive land use, such as urban development.)

  As a general rule, land can be withdrawn from Williamson Act contract only through the nine-year non-renewal process. Immediate termination via cancellation is reserved for "extraordinary", unforeseen situations (See Sierra Club v. City of Hayward (1981) 28 Cal.3d 840, 852-855). The City or County of jurisdiction must approve a request for contract cancellation, and base that approval on specific findings that are supported by substantial evidence (Government Code Section 51282). When Williamson Act contract cancellation is proposed, we recommend that a discussion of the findings be included in the DEIR. Finally, the notice of the hearing to approve the tentative cancellation, and a copy of the landowner's petition, must be mailed to the Director of the Department of Conservation ten (10) working days prior to the hearing. (The notice should be mailed to Bridgett Luther, Director, Department of Conservation, c/o Division of Land Resource Protection, 801 K Street MS 18-01, Sacramento, CA 95814-3528.)
- Pursuant to Government Code Section 51243, if a city annexes land under Williamson Act contract, the city must succeed to all rights, duties and powers of the county under the contract unless conditions in Section 51243.5 apply to give the city the option to not succeed to the contract. Although a city may have protested a contract and although LAFCO may have upheld the protest, conditions in Section 51243.5 may not have been met to give the city the option

to not succeed to the contract. A LAFCO must notify the Department within 10 days of a city's proposal to annex land under contract (Government Code Section 56753.5). A LAFCO must not approve a change to a sphere of influence or annexation of contracted land to a city unless specified conditions apply (Government Code Sections 51296.3, 56426, 56426.5, 56749 and 56856.5).

- If portions of the planning area are under Williamson Act contract, and are to continue under contract after project implementation, the DEIR should discuss the proposed uses for those lands. Uses of contracted land must meet compatibility standards identified in Government Code Sections 51238 - 51238.3. Otherwise, contract termination (see paragraph above) must occur prior to the initiation of the land use.
- An agricultural preserve is a zone authorized by the Williamson Act, and established by the local government, to designate land qualified to be placed under the Act's 10-year contracts. Preserves are also intended to create a setting for contract-protected lands that is conducive to continuing agricultural use. The uses of agricultural preserve land must be restricted by zoning or other means so as not to be incompatible with the agricultural use of contracted land within the preserve (Government Code Section 51230). Therefore, the DEIR should also discuss any proposed general plan designation or zoning within agricultural preserves affected by the project.

Thank you for the opportunity to comment on the NOP. If you have questions on our comments, or require technical assistance or information on agricultural land conservation, please contact the Division at 801 K Street, MS 18-01, Sacramento, California 95814; or, phone (916) 324-0850.

Sincerely,

Dennis J. O'Bryant
Program Manager

cc: State Clearinghouse and Planning Unit

CONTRA COSTA
WATER DISTRICT

1331 Concord Avenue
P.O. Box H20
Concord, CA 94524
(925) 688-8000 FAX (925) 688-8122

February 16, 2007

Ms. Rochelle Henson
City of Oakley
3231 Main Street
Oakley, California 94561

Subject: Notice of Preparation of EIR for Proposed Gilbert Property Project

Dear Ms. Henson:

The Contra Costa Water District (CCWD) is in receipt of the City of Oakley's Notice of Preparation of an Environmental Impact Report (EIR) for the proposed Gilbert property project.

The Gilbert property is outside of the Bureau of Reclamation (Reclamation) Central Valley Project (CVP) service area. There is a Memorandum of Agreement (MOA) dated April 10, 2006 between the Dutch Slough Properties developers and CCWD for the developers to provide financial contributions to the Canal Replacement Project. In addition to CCWD, parties to the agreement include: City of Oakley, Western Pacific Housing, Inc., CP Oakley Developers LLC, and Dutch Slough, Inc. (developers of the Gilbert property as part of the Dutch Slough Properties project). A copy of the MOA is attached to this letter.

CCWD understands that the Castle Companies intends to comply with the terms of the North Dutch Slough MOA. If there are any project changes associated with the Gilbert project, then it will be vital that these be understood by CCWD. Of particular importance is the number of units on the proposed site and possible changes to the location of proposed schools as well as any changes to planned roadway expansions on Sellers and East Cypress Roads.

CCWD requests that the City notify the current applicant for the Gilbert property of the following:

1. Generally CCWD expects the terms and conditions of the MOA should apply to any new applicants of the properties heretofore known as the Emerson property, the Gilbert property, the Baldocchi property, and the Burroughs property.

2. All properties are subject to an Inclusion Review (IR) by the U.S. Bureau of Reclamation. To finalize the IR, CCWD and Reclamation require fees for this step to be paid in advance as well as findings provided with respect to the Federal Endangered Species Act of 1973 and Section 106 of the National Historic Preservation Act of 1966. In addition, the requirements of the California Environmental Quality Act (CEQA) must be met.

3. New EIRs for individual projects should recognize that the terms of the North Dutch Slough MOA as well as mitigation measures related to impacts on the unlined portion of the Contra Costa Canal from the Dutch Slough Properties Draft EIR dated July 2006 by Raney Planning & Management, Inc. are applicable to new projects. Specifically, we request that the attached mitigations shall apply as conditions of project approval for any future applications not covered by the North Dutch Slough MOA, including the current applicant for the Gilbert property.

4. Individual projects will need approval from CCWD and Reclamation for any portion of a private levee that is constructed on federal property.

5. Improvements to East Cypress Road and Sellers Avenue within the Reclamation right-of-way will require approval from Reclamation and close coordination between CCWD and the Gilbert property developer with respect to road expansion and related infrastructure planning.

6. If there are changes to plans that will impact the timing and extent of the widening of Sellers Avenue, then there will need to be a further review of the contributions to CCWD for replacing the Canal under Sellers Avenue.

7. Since April of 2006, it has become clear that in order to replace the unlined Canal with a pipeline, that significant mitigation is required. CCWD believes that if the Gilbert project changes from the assumptions in the April 2006 MOA, then further discussion is required regarding the timing of payments.

8. Lastly, we request that the payments amounts and schedules of the MOA be included as conditions of approval by the City of Oakley for the tentative map for the Gilbert property submitted to the City.

Please notice the current applicant of the Gilbert property of their obligations with regard to the MOA and environmental mitigations as described above and copy CCWD on any such noticing. Thank you for your attention to this matter.

Sincerely,

Mark A. Seedall
Senior Planner

MAS/jmt/rlr

cc: Dutch Slough Inc.
c/o Castle Companies
12885 Alcosta Boulevard, Suite A
Attn: Steve Garrett, Vice President

Attachments: 1-Mitigations
2-MOA
3-Notice of Withdrawal

NORTH DUTCH SLOUGH PROPERTIES MEMORANDUM OF AGREEMENT (MOA)

This North Dutch Slough Properties Memorandum of Agreement (this "MOA") is entered into as of April 10, 2006 by and between the Contra Costa Water District, a California Independent Special District ("the District"), CP Oakley Developers, LLC, a Delaware limited liability company ("CP Oakley"), Dutch Slough, Inc., a California corporation ("DSI"), Western Pacific Housing, Inc., a Delaware corporation, North Bay/Sacramento Division ("WPH") and the City of Oakley, a California municipal corporation ("Oakley" or "City").

Recitals

A. CP Oakley, DSI, WPH and Oakley are acting as residential developers who are pursuing approval of five projects in the City of Oakley, California, identified as: (1) The Emerson Property project by CP Oakley, proposed to contain approximately 560 single-family detached residential units; (2) The Gilbert Property project by DSI, proposed to contain 440[1] single-family detached residential units; (3) The Burroughs Property project by WPH, proposed to contain 74 single-family detached residential units; (4) The Burroughs Property project by Oakley, proposed to contain 100 single-family detached residential units; and (5) The Baldocchi Property project by WPH, proposed to contain 73 single-family detached residential units and 24 multi-family attached residential units (i.e., residential units with at least one shared wall with another residential unit). For purposes of this MOA: These five projects (each a "Project") are referred to together as the North Dutch Slough Project ("NDSP"); the four properties upon which they are proposed to be built are referred to together as the North Dutch Slough Project Area ("NDSP Area"); CP Oakley, DSI, WPH and Oakley are referred to together as the NDSP Developers Group (the "Group") and individually as an NDSP Developer Group Member ("Group Member"). **Exhibit** A to this MOA shows the location of the five Projects constituting NDSP within what is called herein the NDSP Area. One or more Group Member(s) hold options to acquire the respective portions of what is called herein the NDSP Area upon which each of the Projects is proposed to be constructed.

B. The District operates and maintains the Contra Costa Canal (the "Canal") as part of the federal Central Valley Project, which is owned by the U.S. Bureau of Reclamation ("Bureau"). The Canal was constructed for the purpose of conveying water that the District distributes to its customers for beneficial use within the District, including but not limited to domestic, residential, irrigation, agricultural, commercial and industrial uses. The Canal is adjacent, or in close proximity, to each of the Projects, as shown in **Exhibit** A.

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[1] DSI has tentatively agreed to locate a school site on the Gilbert Property, but this has not yet been finally determined. For purposes of this MOU, it is assumed that the school site will be located on the Gilbert Property and that there will be 440 single-family detached residential units located on the Gilbert Property. If it is ultimately determined that the school site will not be located on the Gilbert Property, the estimated number of single-family detached residential units on the Gilbert Property would increase from 440 to 460.

C. Approximately four miles of the Canal consist of an earthen ditch that does not have any protective lining, including the portion adjacent to the NDSP Area. The District has expressed concern to the Group that urban development near the unlined portion of the Canal might adversely affect water quality, public safety, and levee integrity along the Canal.

D. The District has identified a capital improvement project to protect and enhance the Canal adjacent to the NDSP Area as shown in **Exhibit A**, as part of a larger project to deal with the approximately four miles of unlined Canal (the " Canal Improvement Project" or "CIP"). A portion of that Canal Improvement Project may include replacement or removal of the existing siphon underlying the Sellers Avenue right-of-way.

E. The Group desires to assist the District in financing the Canal Improvement Project, including the replacement or removal of the existing siphon underlying the Sellers Avenue right-of-way, by arranging for payments that the District can use to obtain matching funds from other sources, which will include Federal, State and other local funds. To ensure timely receipt of these matching funds and to assist the District's project planning, the parties desire to identify the Group's anticipated funding commitments at this time.

Agreement

NOW, THEREFORE, in light of the mutual covenants and consideration set forth below, the parties agree as follows.

1. Subject to the provisions of this Paragraph, Paragraph 2 and Paragraph 4, the Group Members will individually and separately make the following payments to the District for each dwelling unit actually built within the Member's respective Project area in the NDSP: Two Thousand Six Hundred Twenty Seven Dollars ($2,627) per single-family detached residential unit ("Single-Family Unit"), and One Thousand Five Hundred Seventy Six Dollars ($1,576) per multi-family attached residential unit, as defined in Recital A above ("Multi-Family Unit"), together the "CIP Payment." These per-unit amounts or any unpaid balance thereof shall be escalated each year by two and one-half percent (2.5%), beginning on October 1, 2006.

2. The payment for each Single-Family Unit and Multi-Family Unit shall be made as follows:

   A. Fifty percent (50%) of the total payments for each subdivision shall be paid within thirty (30) days after the funding of public finance authority revenue bonds or similar land-secured infrastructure financing for the NDSP ("Initial Payment"). If for any reason the Group does not rely on public finance authority revenue bonds or similar land-secured infrastructure financing for the NDSP, each Group Member shall pay its portion of the Initial Payment within thirty (30) days after filing for recordation of the small-lot final subdivision map for such Group

Member's subdivision (i.e., the final subdivision map that creates individual legal parcels not intended for further subdivision, but rather intended for development and sale to the home-buying public as single-family detached residential units or multi-family attached residential units, as applicable) (the "Final Subdivision Map"). The portion of the Initial Payment to be paid by each respective subdivision will be determined by calculating the total payments expected for all Single-Family Units and Multi-Family Units shown on the Final Subdivision Map, and dividing that amount by two. By way of example only, if at the time of land-secured financing Final Subdivision Maps are approved for the five Projects in the numbers and types of units identified in Paragraph 4, below (24 Multi-Family Units and 1,247[2] Single-Family Units), the total Initial Payment for all projects would be $1,656,846.50 (total payment of $3,313,693 divided by 2), due and payable within thirty (30) days after the funding of land-secured infrastructure financing. For Final Subdivision Maps that do not receive final approval until after the Initial Payment, fifty percent (50%) of the total payments for those respective subdivisions shall be made within thirty (30) days after the filing for recordation of the Final Subdivision Map.

B. The remaining fifty percent (50%) of the payments for each individual subdivision shall be made on a per unit basis at the sooner of: (a) City's approval for home occupancy, which shall be evidenced by a final signature on the building permit or the issuance of a certificate of occupancy (or in some other manner); or (b) District's demand for payment of the balance or any portion thereof necessary to complete a particular phase of the Canal improvements immediately adjacent to the NDSP Area, which shall occur only after: (i) the District provides one (1) years' written notice that such a demand will be necessary; (ii) all Federal, State, and local funds allocated by the District as part of its Canal Improvement Project for that particular phase of the Canal improvements, have been exhausted; (iii) the Initial Payment and any subsequent payments or credits by Group Members have been exhausted; (iv) a Final Subdivision Map has been filed for each respective subdivision subject to the call; (v) at least thirty percent (30%) of residential units within each Group Member's particular Project has received building permits for construction; and (vi) the Group receives an invoice, or similar documentation from the contractor that payment is due and owing on the construction contract for the Canal improvements immediately adjacent to the NDSP Area.

3. For informational purposes to assist the District in planning for the receipt of payments under this MOA, **Exhibit B** shows the estimated number of units by type and by Group Member, and **Exhibit C** shows an estimated build-out schedule based on today's market conditions. Notwithstanding the foregoing, nothing in this MOA shall be interpreted as binding the Group to the numbers or schedules in **Exhibit B** or **Exhibit C**, or be interpreted as guaranteeing to the District that any or all of the units will be approved by the City, or if approved will be built within any particular time period, or will be built at all. To assist the District in its construction and finance planning, the Group agrees to

[2] Estimate for Gilbert Property subject to increase by 20 single-family detached residential units if school site not located on Gilbert Property, as noted in footnote 1 on page 1.

consult with the District on at least a semi-annual basis for the purpose of updating information concerning any changes in the estimated build-out schedule, entitlements, and on-site construction activities.

4. Payment Amounts.

A. Based on the number and type of units proposed for NDSP as described in Recital A above, the Group anticipates paying the District approximately Three Million Two Hundred Seventy Five Thousand Eight Hundred Sixty Nine Dollars ($3,275,869 = $2,627 per Single-Family Unit multiplied by 1,247[3] units) plus Thirty Seven Thousand Eight Hundred Twenty Four Dollars ($37,824 = $1,576 per Multi-Family Unit multiplied by 24 units) for a total of Three Million Three Hundred Thirteen Thousand Six Hundred Ninety Three Dollars ($3,313,693) under this MOA, which amount shall be escalated annually in accordance with Paragraph 1, and assuming all units are approved and actually built. The parties agree that the Single-Family and Multi-Family per-unit payments described above constitute a fair share contribution by the NDSP for the Canal Improvement Project.

B. The parties anticipate that one thousand two hundred and forty-seven (1,247)[4] Single-Family Units may be approved and built within the NDSP Area as described in Recital A and **Exhibit B**, and that under the terms of this MOA the District will receive Two Thousand Six Hundred Twenty Seven Dollars ($2,627.00) per Single-Family Unit for a total of Three Million Two Hundred Seventy Five Thousand Eight Hundred Sixty Nine Dollars ($3,275,869) (the "Single-Family Unit Total Payment"). In the event that the number of Single-Family Units that actually receive Final Subdivision Map approval by the City of Oakley is reduced below the total anticipated for each individual Project, each Group Member separately and individually agrees that the per-unit payment for each Single-Family Unit in each respective Project will be increased to compensate for the actual reduction in Single-Family Units within that particular Project (up to a reduction of ten percent (10%) of such Single-Family Units), so that the number of Single-Family Units actually approved times the adjusted Single-Family per-unit payment will equal the portion of the Single-Family Unit Total Payment anticipated in this MOA for that Project if the reduction of such Single-Family Units is ten percent (10%) or less, and will be adjusted up to, but not to exceed the ten percent (10%) factor if the reduction of such Single-Family Units is more than ten percent (10%). For illustration purposes only and by way of example, a 10% reduction in Single-Family Units within the Emerson Property to 504 (560 – 56) would result in an adjusted Single-Family Unit per-unit payment by CP Oakley for the Emerson Property of $2,918.89 ($1,471,120 / 504); if the reduction exceeded 10%, for illustration purposes only and by way of example, the adjusted Single-Family Unit per-unit payment by CP Oakley for the Emerson Property would also be $2,918.89. In this illustration, if there were no reductions in the number of Single-Family Units within the other four Projects, the per unit

[3] and [4] Estimate for Gilbert Property subject to increase by 20 single-family detached residential units if school site not located on Gilbert Property, as noted in footnote 1 on page 1.

payments of $2,627 would remain the same for the other four Projects.

C. The parties anticipate that twenty-four (24) Multi-Family Units will be approved and built in the NDSP Area, as described in Recital A and **Exhibit B**, and that under the terms of this MOA the District will receive One Thousand and Five Hundred Dollars ($1,576) per Multi-Family Unit for a total of Thirty Seven Thousand Eight Hundred Twenty Four Dollars ($37,824) (the "Multi-Family Unit Total Payment"). In the event that the number of Multi-Family Units that actually receive Final Subdivision Map approval by the City of Oakley is reduced below the total anticipated for each individual Project, each Group Member separately and individually agrees that the per-unit payment for each Multi-Family Unit in each respective Project will be increased to compensate for the actual reduction in Multi-Family Units (up to a reduction of ten percent (10%) of such Multi-Family Units), so that the number of Multi-Family Units actually approved times the adjusted Multi-Family per-unit payment will equal the portion of the Multi-Family Unit Total Payment anticipated in this MOA for that Project if the reduction of such Multi-Family Units is ten percent (10%) or less, and will be adjusted up to, but not to exceed the ten percent (10%) factor if the reduction of such Multi-Family Units is more than ten percent (10%). For illustration purposes only and by way of example, an 8.33% reduction in Multi-Family Units within the Baldocchi Property to 22 (24 – 2) would result in an adjusted Multi-Family per-unit payment by WPH of $1,719.27 ($37,824 / 22); if the reduction exceeded 10%, for illustration purposes only and by way of example, the adjusted Multi-Family Unit per-unit payment by WPH would be $1,751.11 ($37,824 / (24 x 0.9)). In this illustration, if there were no reductions in the number of Multi-Family Units within the other four Projects, the per unit payments of $1,576 would remain the same for the other four Projects.

5. The District seeks initial funding to determine whether the existing siphon under Sellers Avenue requires modification (in connection with the CIP) or replacement to accommodate anticipated road improvements to Sellers Avenue for access purposes to the proposed regional park located to the north of the NDSP (such road improvements to Sellers Avenue, not including any improvements to the Canal or the existing siphon under Sellers Avenue, are referred to herein as the "Sellers Avenue Road Improvements"). The District estimates the siphon inspection costs at approximately $20,000 (the "Siphon Inspection Payment") and that such inspection would be completed in calendar year 2006. The Group agrees to reimburse the District for the siphon inspection costs in an amount not to exceed $20,000 for the entire Group, within thirty (30) days after receipt of an invoice therefor from the District to each Group Member (which invoice shall reflect the amount to be paid by the Group), and reasonable back-up documentation confirming the amount of actual costs incurred by the District in connection therewith. Additionally, the Group proposes to advance to the District, on a *pro rata* basis, the reasonable costs of the Canal improvements (the "Sellers Avenue Canal Improvements") that would be needed to accommodate the future Sellers Avenue Road Improvements. The District's current reasonable estimate of the payment for the Sellers Avenue Siphon Improvements (the "Sellers Avenue Payment") is approximately Four Hundred Fifty Thousand Dollars ($450,000.00). This cost is based on a culvert

design with a length of 150 feet to accommodate the future Sellers Avenue Road Improvements. The reimbursement maximum of $450,000 shall be escalated each year by two and one-half percent (2.5%), beginning on October 1, 2006. This amount, not to exceed $450,000 total (subject to escalation in accordance with the immediately preceding sentence), will be advanced by each Group Member according to the *pro rata* shares below within forty-five (45) days after the later to occur of (a) recordation of the first Final Subdivision Map within any Project within the NDSP Area (other than the Baldocchi Property project) by a Group Member, and (b) receipt of an invoice therefor from the District to each Group Member (which invoice shall reflect the amount to be paid by each Group Member), and reasonable back-up documentation confirming the amount of actual costs to be incurred by the District in connection therewith. With respect to the Sellers Avenue Payment, each Group Member's pro rata share shall be as follows: (a) Gilbert Property $156,769.60; (b) Emerson Property $199,524.94; (c) Burroughs (WPH) $26,365.80; (c) Burroughs (City) $35,629.45; and (d) Baldocchi $31,710.22.

6. The parties acknowledge that, before constructing any NDSP improvements that encroach on the Canal right-of-way or Bureau easements, each Group Member constructing any such NDSP improvements must obtain approval from the Bureau and/or the District, which approval may take the form of a Right-of-Entry, Encroachment Permit, License, or similar instrument memorializing approval from the District and/or Bureau. As soon as practicable, and in no event later than the date such Group Member's application for that approval is submitted, each Group Member constructing any such NDSP improvements agrees to consult with the District and submit for the District's review, geotechnical studies along the Canal berm to help ensure that any design and construction activities related to such NDSP improvements, including any deep-dynamic compaction, or other specialized compaction methods that have the potential to have similar adverse impacts on the integrity of the Canal, that any Group Member may use for low density/liquefiable soils (hereinafter "Deep Dynamic Compaction"), as opposed to traditional compaction methods in connection with the construction of improvements within the Group Member's Project, are designed and performed in a manner that adequately protects the Canal's integrity, stability, and water quality. Such specific design, construction monitoring, and other measures that are developed based on those geotechnical studies may be incorporated in the Right-of-Entry, Encroachment Permit, License, or similar instrument to ensure the Canal's integrity, stability, and water quality. The Group agrees to reimburse the District for its inspection and engineering review costs with respect thereto in an aggregate amount not to exceed $10,000. If and only if Deep Dynamic Compaction is employed by a Group Member within such Group Member's Project, the following provisions shall apply:

No Deep-Dynamic Compaction may proceed within the NDSP Area until:

A. The City has incorporated the provisions of Paragraphs 6A.(i), 6.A.(ii) and 6.A.(iii) as mitigation measures in the environmental impact report prepared by the City for the NDSP (and into the associated mitigation monitoring program), said report and program each specify that the City shall be responsible for enforcing these provisions,

and the DDC Member proceeds in accordance with the provisions of Paragraphs 6.A.(i), 6.A.(ii) and 6.A.(iii).

(i) Geotechnical engineers for the District and the Group Member performing Deep Dynamic Compaction (the "DDC Member") shall mutually agree upon acceptable threshold limits for peak particle velocities measured at the toe of the Canal berm (the "Threshold Limits") along the DDC Member's Project. The sole purpose of the Threshold Limits is to attempt to avoid damage to the Canal. The parties acknowledge that in determining the Threshold Limits, the parties are not warranting that peak particle velocities at the toe of the Canal berm along the DDC Member's Project less than said Threshold Limits is safe or would not cause or contribute to Canal damage. In determining the Threshold Limits, in addition to general safety and engineering factors, the District and DDC Member engineers may also consider the types and amounts of comprehensive general liability insurance coverage provided by the DDC Member and its contractors or sub-contractors, as well as the specific design, construction monitoring, and other measures that are developed to protect the Canal's integrity, stability, and water quality as set forth above. (For example, if the District believes the amounts of comprehensive general liability insurance coverage provided by the DDC Member and its contractors or sub-contractors is insufficient, the Threshold Limits should be reduced accordingly to reflect this fact.) An independent licensed engineer selected by the District (with the concurrence of the DDC Member) shall, at the DDC Member's sole cost and expense, monitor measurements of peak particle velocities at the toe of the Canal berm along the DDC Member's Project during the period that Deep Dynamic Compaction is being performed, and shall submit to the District logs reflecting such measurements on a daily basis during such period.

(ii) To help ensure that the Threshold Limits are not exceeded, the DDC Member shall commence Deep Dynamic Compaction on those portions of its Project located farthest from the Canal, and thereafter shall proceed with Deep Dynamic Compaction from those portions of the Project toward the Canal. That is, the DDC Member shall always conduct Deep Dynamic Compaction on its Project in a manner that the progression is in a direction toward the Canal.

(iii) If the Threshold Limits are exceeded while Deep Dynamic Compaction is being performed, then the DDC Member shall immediately cease performing Deep Dynamic Compaction within its Project and promptly notify the District. Deep Dynamic Compaction shall not resume unless and until (i) measures are developed and implemented by the DDC Member to ensure that the Threshold Limits are not exceeded, and (ii) the DDC Member notifies the District in writing of such measures.

B. The DDC Member has provided financial security to the District pursuant to and in accordance with the provisions of Paragraphs 6.B.(i), 6.B.(ii), 6.B.(iii), and 6.B.(iv).

(i) The District, at its discretion, may require that the DDC Member provide financial security to the District in the amount of 1.4 Million Dollars ($1,400,000.00) (the "Security"), which Security shall be provided in a form (e.g., a performance bond, assurance bond, letter of credit, escrow account funded with cash, or other similar financial assurance mechanism) selected by the Group Member and approved by the District, which approval shall not be unreasonably withheld, delayed or conditioned. The Security is being provided to remedy any actual damage caused by the Deep Dynamic Compaction that interferes with or threatens to interfere with the ability of the Canal to contain and/or deliver water, whether or not the Threshold Limits have been reached or exceeded.

(ii) The Security provided by each DDC Member shall remain in effect for the period that Deep Dynamic Compaction occurs on such DDC Member's Project, and the District's rights under the Security shall automatically terminate and the Security shall be released within thirty (30) calendar days after the District's receipt of written notice that Deep Dynamic Compaction within the DDC Member's Project has been completed, unless the District "calls" the Security in accordance with this Paragraph 6.B.(iii), below.

(iii) Whether or not the Threshold Limits have been maintained or exceeded, the District may "call" on the Security, but only in the event that the District reasonably and in good faith determines that actual damage caused by the DDC Member's Deep Dynamic Compaction has occurred that interferes with or threatens to interfere with the ability of the Canal to contain and/or deliver water, and only after the DDC Member receives twenty-four (24) hours' prior written notice (except in the event of an emergency, in which case only such advance notice as is reasonable under the circumstances shall be required) and the DDC Member has failed to commence cure of such failure within such notice period or thereafter fails to diligently prosecute such cure to completion. On or before the commencement of the DDC Member's Deep Dynamic Compaction activities, the District and the DDC Member agree to prepare a form of right-of-use or encroachment permit regarding the DDC Member's need to access the Canal right-of-way as reasonably necessary to perform such cure.

(iv) If the District "calls" the Security in accordance with Paragraph 6.B.(iii), the District shall call the Security only to the extent, and in the amount, reasonably necessary under the circumstances to repair the Canal, restore water conveyance, or secure alternative interim water conveyance required by the damage caused by the DDC Member's Deep Dynamic Compaction, and shall use such funds only for such purposes. The Threshold Limits are not themselves relevant to whether the "call" of the Security under Paragraph 6.B.(iii) was made in good faith or was reasonably necessary under the circumstances. Any remaining Security shall be retained by or returned to the DDC Member or, at the discretion of the DDC Member, the issuer of the Security.

7. The District has identified two options for the Canal Improvement Project, as described

in **Exhibit D**. The District intends to improve the portion of the Canal adjacent to the NDSP Area using one or more of the two options, however, nothing in this MOA shall be construed to limit the District's discretion to select and use another option provided that the costs to be paid by the Group shall not be increased, that the amount of interference with construction or occupancy of the NDSP shall not be materially increased, or that the option selected may not be less effective in protecting the integrity of the Canal and the quality of the water it carries. The District agrees that the funds paid under this MOA shall not be used for any purpose other than to protect and enhance the unlined Canal immediately adjacent to the NDSP Area except as may otherwise be agreed to by the parties. The District commits to pursue all available sources of funding to complete this work as soon as reasonably possible. To the extent technical, institutional, environmental, and financial requirements permit, the District and the Group agree to coordinate, to the extent practicable, the scheduling of the Canal Improvement Project and construction of the NDSP, including but not limited to infrastructure improvements constructed by the Group as part of the NDSP that are adjacent to the Canal.

8. The District and each Group Member acknowledge and agree that each Group Member shall be solely responsible for the collection and disbursement of payments on units built by that Member, and shall have no liability to the District or any other Group Member for the obligations under this MOA of any other Group Member.

9. The District affirms that it will impose no new fees, charges, taxes or other type of levy on any Group Member or on construction of any improvements in the NDSP, or arrange for or induce the City or any other agency to impose such new levy relating to the provision of water, other than:

   A. Those in effect as of the date of this MOA;

   B. Any fees, charges, taxes or other type of levy applying to the District's service area and generally applicable to similarly situated customers or water users, as may be approved or adjusted from time to time by the District's Board of Directors subsequent to executing this MOA (other than additional levies for the purpose of funding work on protecting and enhancing any unlined portions of the Canal); and

   C. The payments referenced in this MOA.

10. Each Group Member, its builders, and successors and assigns, will permit the District reasonable temporary access to the portion of the NDSP Area that it owns, without charge, for the purpose of undertaking construction and inspection activities related to the Canal Improvement Project on the permitting Group Member's portion of the Canal adjacent to the NDSP Area, subject to the following conditions:

   A. The District shall provide thirty (30) days' prior written notice to: (a) all property owners and residents in the NDSP Area within 300 feet of the planned construction; (b) the City of Oakley; and (c) any and all homeowners'

associations in the NDSP Area with members within 300 feet of the planned construction;

B. The Group and each Group Member will use reasonable efforts to cooperate and facilitate the District's and District consultants' and contractors' temporary access of each and every paved road installed within the NDSP Area, without notice as required in Paragraph 10.A, above, including without limitation paved roads or trails located on top of the levee(s) installed by one or more Group Members within the NDSP Area adjacent to the Canal;

C. The right of temporary access will be limited to District staff, its consultants, and contractors employed to perform the work; in no event shall this temporary access be interpreted to allow any right of entry to the general public;

D. The right of temporary access shall not include the right to access private residences or private yard areas once those residences are occupied without prior written consent of the occupant and/or owner;

E. To the extent reasonably practicable, the District shall design and schedule its improvement work to minimize interference with construction activities within the NDSP Area and/or the day-to-day activities of future residents of the NDSP Area;

F. The District shall carry all reasonable insurance customarily required for such construction projects, including without limitation general liability, automobile and workers compensation, and shall require all consultants, contractors and other parties entering the NDSP Area on behalf of the District to have such insurance in effect; and

G. The District shall agree to hold harmless and indemnify the Group Members, their builders, homeowners, and successors and assigns from any and all injury or damage to the extent resulting from the District's temporary access to the NDSP Area for purposes of undertaking its Canal Improvement Project.

11. The Group agrees to request that the City of Oakley include the payment amounts and payment schedules set forth in Paragraphs 1 and 2, above, as conditions of approval issued by the City for each tentative subdivision map. If the City declines to include such conditions of approval, the parties agree to seek other means by which the City may help ensure that timely payments are made under this MOA.

12. Each Group Member shall record Abstracts of this MOA in the form of **Exhibit** E in the official records of Contra Costa County on and against title to each individual property which is the subject of the five pending Projects in the NDSP within ten (10) business days after both of the following occur as to the property against which the Abstract is to be recorded: (a) the City approves a tentative subdivision map, parcel map, development plan, or similar entitlement; and (b) such Group Member (or its successor in interest)

closes escrow for the purchase of the property covered by those approvals. Each Abstract shall be signed by the District and the individual party who has taken title to all or any portion of the subject property upon which is located the subdivision tentatively approved. Upon the closing of any sale to an individual or entity who, singly or in a group purchases one or more constructed residential units within the property described on **Exhibit A** for which the required payment(s) in Paragraphs 1 and 4 have been made, this MOA shall automatically terminate as to the residential units and the parcel(s) upon which such units are located, whereupon such purchasing individual(s) or entity(ies) shall not be regarded as a successor, assignee or transferee of any Group Member for purposes of this MOA. The District agrees to promptly cooperate with such individual(s) or entity(ies) and, if requested, execute, acknowledge and deliver within ten (10) business days after such request any documents as may be reasonably necessary to remove the Abstract of this MOA from record title with respect to property acquired by such purchasers.

13. The parties represent that legal counsel for each of them has reviewed this MOA and are satisfied that this MOA is suitable for its purposes.

14. The parties will fully cooperate and facilitate the application for and receipt of any permits, licenses, or other approvals for the five Projects within the NDSP, including but not limited to: (a) inclusions and annexations within the respective service areas of the Contra Costa Water District, Los Vaqueros Project, and the Central Valley Project; and (b) encroachment, license, or right-of-entry permits for construction activities along or across the Canal. The District agrees that it will undertake reasonable efforts to expedite any approvals within the District's control.

15. The parties will use reasonable efforts to cooperate and facilitate, at no cost to the Group Members, NDSP, or the District, the connection between storm drainage collection facilities now existing or to be installed on the Canal right-of-way to drain the Canal right-of-way and the storm drainage system(s) which the Group or the Group Members are required to install to drain the NDSP.

16. Each of the Group Members individually and separately agree to maintain shallow groundwater monitoring wells within the portion of the NDSP Area adjacent to the Canal (i.e., other than on the Baldocchi Property) during and after project construction, and allow access to them and use of the data generated thereby by the District for the purpose of analyzing: (a) the water quality effects of area utility facilities; and (b) the effect, if any, of adjacent urban development on the Canal. Well locations shall be located where optimal for data collection purposes, but not at the risk of obstructing or complicating development plans for the NDSP or in locations that might reduce property values or interfere with use and enjoyment of the property by future residents. After construction, the Group will provide access for data collection at those wells located within common public areas (and not individual private lots) by the District on a schedule agreed to among the parties. The Group also will provide prior groundwater monitoring data on the project property in electronic format, to the extent such data may be available. The

District will provide the Group, or its designated consultants, its Canal monitoring data adjacent to the NDSP Area in electronic format. The Group's obligation to maintain the wells and provide monitoring data shall expire upon five (5) years after the date of this MOA. After such date the wells may be closed at the Group's or their successors' sole discretion and the District's right of access to the wells for data collection shall terminate. The parties may, at that time, negotiate a further agreement concerning longer-term well maintenance and monitoring, which may be carried out by the District for as long as the District assumes responsibility for operation and maintenance of the wells.

17. Each Group Member agrees to install, at its expense, a Canal property line fence and a Canal berm fence along the south side of the Canal adjacent to such Group Member's Project within the NDSP Area prior to completion of construction of any residential units within the Group Member's Project adjacent to the Canal, subject to the following provisions with respect to the Sellers Avenue and Dutch Slough crossings. At the Sellers Avenue crossing, said fences shall connect either to (a) the existing gate across Sellers Avenue on the north side of the Canal, or (b) a new gate across Sellers Avenue on the south side of the Canal, as determined by mutual agreement of the District and the Group, and the fencing and gates at the Sellers Avenue Crossing shall be constructed by either (i) CP Oakley, if commencement of construction of the Emerson Project precedes commencement of construction of the Gilbert Project, or (ii) DSI, if commencement of construction of the Gilbert Project precedes commencement of construction of the Emerson Project. At the Little Dutch Slough crossing, said fences shall extend no more than 100 feet (100') across the Canal and beyond (in a generally northerly direction) along each bank of Little Dutch Slough, and the fencing and gates at the Little Dutch Slough crossing shall be constructed by either (i) WPH, if commencement of construction of the WPH portion of the Burroughs Project precedes commencement of construction of the City portion of the Burroughs Project, or (ii) the City (or its successor with respect to the Burroughs Project), if commencement of construction of the City portion of the Burroughs Project precedes commencement of construction of the WPH portion of the Burroughs Project. All fencing material and installation shall meet District requirements.

18. All exhibits attached to this MOA and referenced herein are deemed incorporated in and made a part of this MOA.

19. Any notice, demand, or other written instrument required or permitted to be given pursuant to this MOA shall be in writing signed by the party giving such notice and shall be sent to each party at the following addresses. Notices may be given by hand delivery, by overnight courier, by registered or certified mail, or by facsimile (if the facsimile transmission is followed by a copy sent by hand delivery, courier or regular mail). Each party may change its address from time to time by written notice to all the other parties in accordance with this Paragraph.

To District:	Contra Costa Water District 1331 Concord Avenue P.O. Box H20 Concord, California 94524 Attn: General Manager Phone: 925.688.8000 Facsimile: 925.688.8122
To WPH:	Western Pacific Housing, Inc. North Bay/Sacramento Division 1210 Central Boulevard Brentwood, California 94513 Attn: Division President Phone: 925.634.6023 Facsimile: 925.634.6166
To CP Oakley:	CP Oakley Developers, LLC c/o Centex Homes Northern California 2527 Camino Ramon, Suite 100 San Ramon, California 94583 Attn: David Dolter Vice President, Planning and Entitlements Phone: 925.415.1600 Facsimile: 925.415.1601
With a copy to:	CP Oakley Developers, LLC c/o Ponderosa Homes 6671 Owens Drive Pleasanton, California 94588-3398 Attn: Jeffrey C. Schroeder Senior Vice President, Land Acquisition and Planning Phone: 925.460.8910 Facsimile: 925.734.9141
To DSI:	Dutch Slough, Inc. c/o Castle Companies 12885 Alcosta Boulevard, Suite A San Ramon, California 94583 Attn: Steve Garrett Vice President Phone: 925.328.1000 Facsimile: 925.242.8100

With a copy to: Dutch Slough, Inc.
c/o Ryder Communities
1425 Treat Boulevard
Walnut Creek, California 94596
Attn: Timothy Saunders
Vice President
Phone: 925. 937.4373
Facsimile: 925. 935.9195

To Oakley: City of Oakley
3231 Main Street
Oakley, California 94561
Attn: City Manager
Phone: 925.625.7000
Facsimile:

20. This instrument and the attached Exhibits constitute the entire agreement among the parties relating to the subject matter of this MOA. Any prior agreements, promises, negotiations, or representations not expressly set forth in this MOA are of no force and effect. Any amendment to this MOA will be of no force and effect unless it is in writing and signed by all parties.

21. This MOA shall be construed and governed in accordance with the laws of the State of California. Any litigation arising under this MOA shall be prosecuted in the Superior Court of California, County of Contra Costa, and all parties waive their respective rights to change venue pursuant to Section 394 of the Code of Civil Procedure. All parties further agree that only those parties actually involved in a dispute under this MOA shall be deemed to be indispensable parties for purposes of Section 389 of the Code of Civil Procedure.

22. The provisions of this MOA are not binding upon the current owners of the real property within the NDSP Area (it being understood that none of the signatories hereto currently own the real property within the NDSP Area), nor the real property within the NDSP Area unless and until such property is acquired by a Group Member; provided, however, that the provisions of this MOA shall be binding on and inure to the benefit of the parties hereto and their successors or assigns. Notwithstanding the preceding sentence, if for any reason a particular Group Member abandons its option or other property interest and does not proceed with its project, then such Group Member shall have the right, but not the obligation, to terminate this MOA as it relates to that particular Group Member (and the property owned by such Group Member described in Recital A and **Exhibit A**) by providing at least thirty (30) days' advanced written notice thereof to the other parties, and thereafter that Group Member shall have no further rights or obligations hereunder, and the District shall have no further rights or obligations hereunder relating to the terminating Group Member (or any property owned by such Group Member as described in Recital A and **Exhibit A**), except for any rights or obligations that expressly

survive termination as provided herein.

23. In the event any provision of this MOA is determined by appropriate judicial authority to be illegal or otherwise invalid, such provision shall be given its nearest legal meaning or be construed as deleted as such judicial authority determines and the remainder of this MOA shall be construed to be in full force and effect.

24. This MOA may be executed in two or more counterparts, each of which shall be deemed to be an original and all of which shall be deemed to be one and the same instrument. Notwithstanding any other provision of this MOA to the contrary, this MOA shall not be deemed to be entered into by any party unless and until it is duly executed and delivered by all of the parties hereto.

25. Each person signing this MOA on behalf of a party represents and warrants that said person has full and complete authority from that party to bind said party to perform and comply with each and every term, obligation, condition and covenant set forth in this MOA.

26. The Group makes no representations or warranties to the District regarding the condition of the NDSP Area or its suitability for the District to perform any work on the Canal adjacent to the NDSP Area, and the District affirms that it is entering into this MOA treating the NDSP Area in its "AS-IS" condition. The District makes no representations or warranties to the Group regarding the condition of the Canal adjacent to the NDSP Area or the suitability of the NDSP Area for the development contemplated in Recital A, above, and the Group affirms that it is entering into this MOA treating the Canal in its "AS-IS" condition.

27. The District shall indemnify, defend and hold the Group Members and their successors harmless from and against all demands, claims, losses, liabilities, damages, injuries or expenses (including without limitation attorney's fees) to the extent arising from entry on the NDSP Area by the District or its agents, consultants, and contractors, or to the extent arising from the District's construction of the Canal Improvement Project. Each Group Member shall indemnify, defend and hold the other Group Members and their successors harmless from and against all demands, claims, losses, liabilities, damages, injuries or expenses (including without limitation attorney's fees) arising from the indemnifying party's breach of this MOA. Each Group Member shall indemnify, defend, and hold the District harmless from and against all demands, claims, losses, liabilities, damages, injuries or expenses (including without limitation attorney's fees) arising from: (a) construction activities by the indemnifying Group Member within the NDSP Area; and (b) any claims that the Canal has adversely affected the indemnifying Group Member's construction activities within the NDSP Area, until such time as that Group Member or its successor has paid the District in full all amounts due from that Group Member under this MOA.

28. In consideration for the anticipated receipt of payments from the Group pursuant to this MOA, the District releases each Group Member from and waives the right to claim or

pursue all rights, claims, liabilities, costs, attorneys fees, or other obligations, that District may have against any Group Member arising from the proximity of the NDSP to the Canal, including: (a) claims arising from construction or future occupancy of the NDSP; (b) any claims that such construction or occupancy in any way adversely affects the quality of water carried by the Canal; and (c) any claims arising from the fact that the Canal Improvement Project might not be completed for some time so that the NDSP is built and occupied while the District continues operating the Canal adjacent to the NDSP Area without any lining of the Canal. The scope of this waiver specifically excludes negligent acts or omissions or willful misconduct by each Group Member, its agents, consultants, or contractors. The scope of this waiver also specifically excludes such rights, claims, liabilities, costs, attorneys' fees, or other obligations that District may have against any Group Member arising: (a) under this MOA (including without limitation the enforcement of each Group Member's respective obligation to indemnify, defend, and hold the District harmless under Paragraph 27), (b) the design and construction of a FEMA approved levee along and adjacent to the Canal, and (c) the use of Deep Dynamic Compaction within a Group Member's Project. The exclusions set forth in the preceding sentence shall remain in effect as to each Group Member until said Group Member has paid the District in full all amounts due from that Group Member under this MOA.

29. Dispute Resolution.

A. Mediation. The parties agree to first submit any dispute arising out of or in connection with this MOA to a mutually acceptable professional mediator and to negotiate in good faith toward reaching an agreement with respect to the dispute. In such event, neither party shall proceed with arbitration until the completion of the mediation, the mediation being an express condition precedent to further remedies, or until sixty (60) days after the submission of the dispute to a professional mediator, whichever occurs first. The parties may, however, agree in writing to proceed directly to arbitration.

B. Binding Arbitration. Should the parties be unable or unwilling to resolve their dispute through the mediation process provided in Paragraph 29.A above, either party may give written notice to the other party and elect to have the matter resolved by final and binding arbitration in accordance with the rules and procedures of the arbitrator selected in accordance with this Paragraph 29.B (the "Arbitrator"). The party seeking arbitration shall set forth in its notice the particulars of its claims and shall state with specificity the issue(s) to be submitted to arbitration and the relief sought. Within thirty- (30) days of the date of the election to arbitrate, the parties shall select a single, mutually agreeable arbitrator. If the parties are unable to agree, they shall request that the Judicial Arbitration and Mediation Service, Inc. ("JAMS") if such entity is then in existence, appoint an Arbitrator in accordance with then-current procedures. The arbitrator shall be a retired judge of the Superior Court of California, or the Court of Appeal of California, or a retired judge of the United States District Court sitting in California. If JAMS is not in existence, the Presiding Judge of the Contra Costa Consolidated Court of Unlimited Jurisdiction shall appoint an Arbitrator in

accordance with its then-current procedures.

The rules and procedures for arbitration shall be as follows:

i. The Arbitrator shall be selected and arbitration shall be conducted within a reasonable time, but in no event later than ninety- (90) days after the date upon which the demand for arbitration is filed.

ii. The arbitration proceedings shall be conducted in Contra Costa County, California, at a time and location as agreed to in writing by the parties, or in absence of an agreement, as designated by the Arbitrator.

iii. Subject to the same rules pertaining to privileged communications and attorney work product that would apply if the proceeding was filed in the courts of the State of California, the Arbitrator shall have the authority to make all decisions regarding the relevance, materiality, and admissibility of all evidence offered at the arbitration.

iv. The Arbitrator may issue any remedy or relief, whether provisional or permanent, including but not limited to a default judgment, which the parties could have obtained under the law applicable in courts of the State of California under the same factual circumstances, and the Arbitrator shall follow and otherwise employ the standards for issuing such relief as defined by California law; provided, however, that the Arbitrator shall have no authority or jurisdiction to enter an award for consequential, special, exemplary or punitive damages. The Arbitrator may also grant such ancillary relief as is necessary to make effective the award.

v. Each party may conduct discovery as if the matter were pending before a Superior Court of the State of California and the Arbitrator shall have the full power of the State of California to issue and enforce subpoenas and to award sanctions. Each party shall have the right to demand in writing that the other party provide a list of witnesses it intends to call at the hearing, designating which witnesses will be called as expert witnesses, and a list of documents it intends to introduce at hearing. The responding party's list(s) shall be served on the requesting party using one of the same manners as authorized for delivery of notices under Paragraph 19, with a copy to the Arbitrator, at least thirty- (30) days before the hearing.

vi. Each party shall have the right to be represented by counsel.

vii. No later than sixty (60) days following closing of the arbitration hearing, the Arbitrator shall make an award and issue a written opinion consisting of findings of fact and conclusions of law and setting forth the bases of the award. The Arbitrator may include in his or her award pre-award interest and post-award interest at the legal rate where authorized by law. Notwithstanding any contrary

provision of law that might set a shorter time period due to the District's status as a public entity, the party against whom the award is made or remedy or relief ordered shall have sixty (60) days after receipt of the award or order to commence and thereafter diligently pursue to completion any action or proceeding in any court of the State of California of appropriate jurisdiction located in the County of Contra Costa to obtain judicial review of the award or order. The Arbitrator shall deliver the award or order to all parties to the arbitration only by hand delivery, by overnight courier, or by registered or certified mail. If the award or order is sent by mail, it shall be deemed to be received upon the earlier of actual receipt as evidenced by a signed receipt or five (5) days after deposit in the mail.

viii. If no such action or proceeding is timely commenced, the award or order shall thereupon immediately become final. The party against whom the award is made or remedy or relief ordered shall within thirty (30) days after the award or order becomes final make full payment and/or commence and thereafter diligently pursue to completion any other action required by the award or order. The party in whose favor the award is made may request and obtain from any court of the State of California of appropriate jurisdiction located in the County of Contra Costa a Judgment upon the award rendered by the Arbitrator, which may thereafter be entered in the records of said court.

ix. If an action or proceeding is timely filed in any court of the State of California of appropriate jurisdiction located in the County of Contra Costa to obtain judicial review of the award or order, the parties shall have the right to seek vacation or modification of any portion of the award that is based in whole, or in part, on an incorrect or erroneous ruling of law, in addition to the limited statutory right to seek vacation or modification of an award pursuant to the law applicable to non-judicial arbitration. The findings of fact of the Arbitrator shall be binding on all parties and shall not be subject to further review except as otherwise allowed by the law applicable to non-judicial arbitration.

x. The Arbitrator shall be paid a per diem or hourly charge as established at the time of appointment. Each party shall bear its own attorneys' fees and costs in presenting its case. All other actual costs of conducting the arbitration, including without limitation the administrative fee and the Arbitrator's compensation, shall be shared equally; provided, in any arbitration of a dispute between the District on one side and more than one Group Member or their successors on the other side, the District shall be responsible for one-half of such arbitration costs with the other half shared equally among the other parties.

xi. This arbitration clause shall be interpreted under the arbitration laws of the State of California and not the Federal Arbitration Act, 9 U.S.C.§ 1. Except as otherwise provided in this MOA, any motion, application, complaint or proceeding arising out of or relating to this arbitration clause shall be determined in accordance with the law of the State of California.

xii. Unless otherwise provided in this MOA or otherwise agreed in writing, the parties shall continue to perform their respective obligations under this MOA during the pendency of arbitration proceedings.

xiii. Except as modified or stated to the contrary in this Paragraph 29, the rules and procedures of the Arbitrator in effect at the time of the arbitration shall apply to the arbitration procedure.

30. Nothing in this MOA shall be deemed to constitute an agency, partnership or joint venture between any Group Member and any other Group Member, or between any Group Member and the District.

31. In the event that any Group Member transfers its interest in a portion of the NDSP Area before an Abstract is recorded pursuant to Paragraph 12 against title to that portion, said Member shall be relieved of all obligations under this MOA owed from and after the date of transfer so long as all such obligations are assumed by the transferee by a written assumption agreement delivered to the District. As of the date that an Abstract is recorded against a portion of the NDSP Area, only the then owner of that portion shall be bound by the obligations of this MOA allocated to that portion, as such owner may change from time to time, and subsequent transfer of that portion shall automatically relieve the transferor of any obligations owed from and after the date of transfer and by such record notice of the MOA the transferee shall automatically be bound to all such obligations so long as notice thereof is given to the District in the form of a written assumption agreement delivered to the District. Nothing in the preceding sentence shall be construed to affect the third sentence of Paragraph 12 above, pertaining to the automatic termination of this MOA as to the residential units and parcels for which the required payments have been made.

Executed as of the date first indicated above.

CONTRA COSTA WATER DISTRICT,
a California Independent Special District

By: Walter J. Bishop
Walter J. Bishop

Its: General Manager

APPROVED AS TO FORM

Carl P.A. Nelson
DISTRICT COUNSEL

WESTERN PACIFIC HOUSING, INC.,
a Delaware corporation,
North Bay/Sacramento Division

By: _____
Name: _____
Its: _____

CP OAKLEY DEVELOPERS, LLC,
a Delaware limited liability company

By: Ponderosa Homes II, Inc.,
a California corporation
Its: Member

By: _____
Name: Jeffrey C. Schroeder
Its: Sr. V.P. Land Acquisition & Planning

By: Centex Homes,
a Nevada general partnership
Its: Member

By: Centex Real Estate Corporation,
a Nevada corporation
Its: Managing Partner

By: _____
Name: David Ciabattari
Its: Division President

[signatures continued on next page]

DUTCH SLOUGH, INC.,
a California corporation

By: _____
Name: _____
Its: _____

THE CITY OF OAKLEY, a California municipal corporation

By: _____
Its: City Manager

EXHIBITS:
- A: Map of NDSP Properties (Including Canal Proximity)
- B: Estimated Number of Units by Project
- C: Estimated Unit Construction Schedule
- D: Canal Improvement Options
- E: Form of Abstract to Record

EXHIBIT A

MAP OF NDSP PROPERTIES (INCLUDING CANAL PROXIMITY)

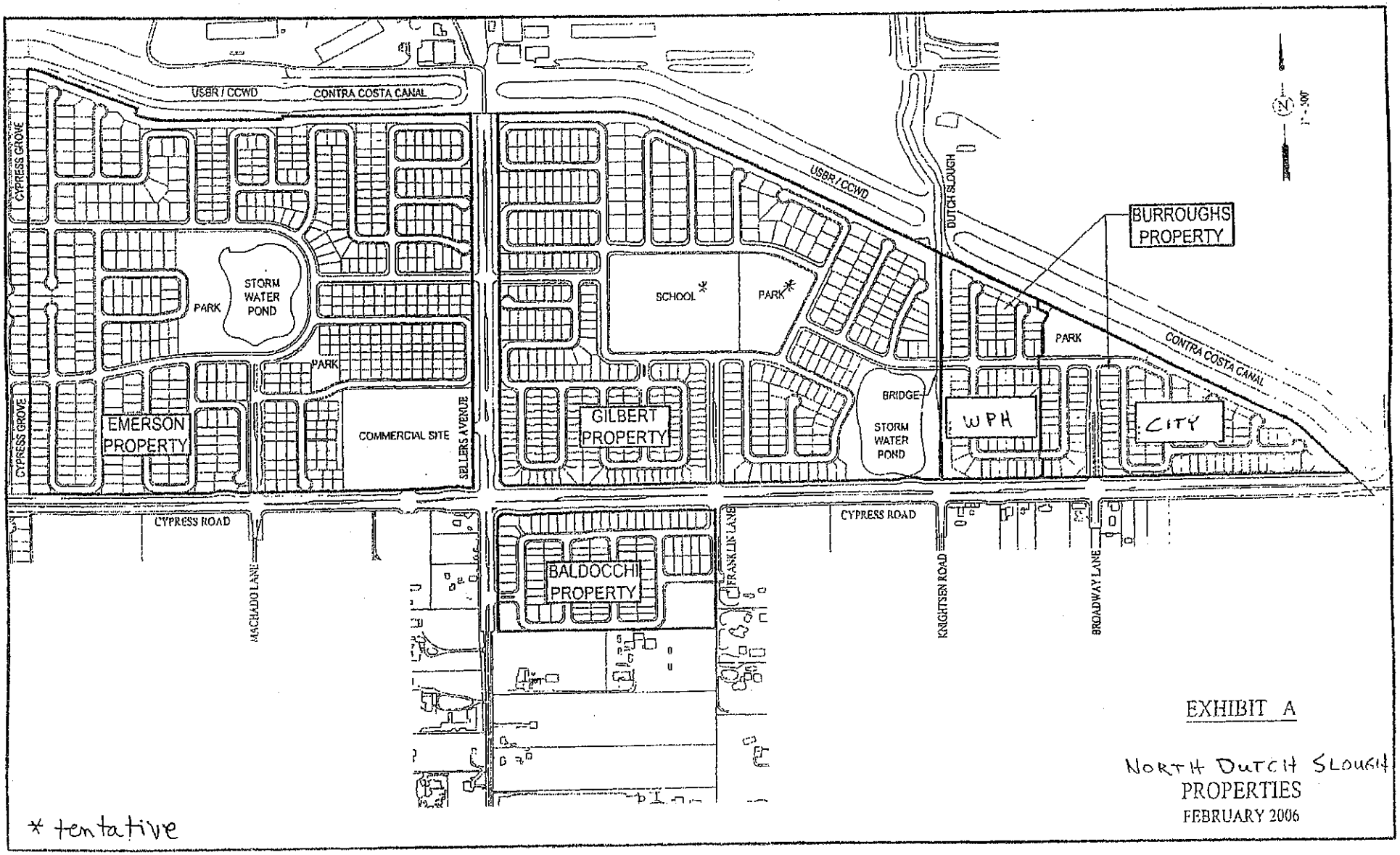

USBR / CCWD
CONTRA COSTA CANAL
CYPRESS GROVE
PARK
STORM WATER POND
PARK
EMERSON PROPERTY
COMMERCIAL SITE
SELLERS AVENUE
SCHOOL
PARK
GILBERT PROPERTY
USBR / CCWD
DUTCH SLOUGH
BURROUGHS PROPERTY
PARK
CONTRA COSTA CANAL
BRIDGE
STORM WATER POND
WPH
CITY
CYPRESS ROAD
MACHADO LANE
BALDOCCHI PROPERTY
FRANKLIN LANE
CYPRESS ROAD
KNIGHTSEN ROAD
BROADWAY LANE
EXHIBIT A
NORTH DUTCH SLOUGH
PROPERTIES
FEBRUARY 2006
* tentative

EXHIBIT B

ESTIMATED NUMBER OF UNITS BY PROJECT

	Single-Family Units	Multi-Family Units	Total
Emerson Property	560	0	560
Gilbert Property	440[5]	0	440
Burroughs Property (WPH)	74	0	74
Burroughs Property (City)	100	0	100
Baldocchi Property	73	24	97
Total	1,247	24	1,271

[5] Estimate for Gilbert Property subject to increase by 20 single-family detached residential units if school site not located on Gilbert Property, as noted in footnote 1 on page 1.

EXHIBIT C

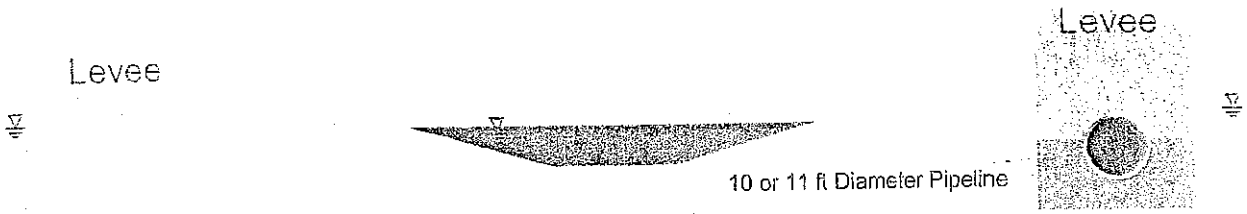
ESTIMATED UNIT CONSTRUCTION SCHEDULE

	Final - Map	Approval for Occupancy
Emerson Property	March, 2007 to March, 2009	December, 2007 to March, 2012
Gilbert Property	December, 2006	August, 2008
Burroughs Property (WPH)	March, 2007	December, 2007
Burroughs Property (City)	March, 2007	June, 2008
Baldocchi Property	December, 2006	December, 2007

EXHIBIT D

Two Canal Improvement Options

1. New Pipeline Outside Canal



2. New Pipeline Inside Canal

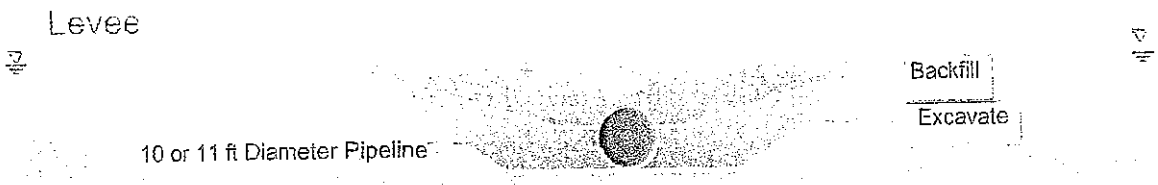


EXHIBIT E

FORM OF ABSTRACT TO RECORD

Recording Requested by and)
After Recordation Mail to:)
General Manager)
Contra Costa Water District)
1331 Concord Avenue)
Concord, CA 94524)

Space above this line for recorder's use

ABSTRACT OF MEMORANDUM OF AGREEMENT

THIS ABSTRACT OF MEMORANDUM OF AGREEMENT ("Abstract") is executed as of _____, by and between Contra Costa Water District, a California Independent Special District ("the District") and _____ ("Developer"). **[enter names of Group Members– or their successor who actually acquires one of the properties]**

1. The District entered into that certain North Dutch Slough Properties Memorandum of Agreement dated _____ ___, 2005 (the "MOA") with Western Pacific Housing, Inc., a Delaware corporation ("WPH"), CP Oakley Developers, LLC, a Delaware limited liability company ("CP Oakley"), Dutch Slough, Inc., a California corporation ("DSI"), and the City of Oakley, a California municipal corporation ("Oakley") (collectively, the NDSP Developers Group or the "Group," and individually, a "Group Member"). The Group Members are residential developers pursuing approval and construction of five Projects in the City of Oakley, County of Contra Costa, State of California. The Projects are together referred to as the North Dutch Slough Project ("NDSP"). The undersigned Developer, being a Group Member or its successor, owns that certain real property described in Exhibit One attached hereto and incorporated herein by this reference (the "Property"), on which a portion of NDSP is proposed to be built.

2. The sole purpose of this Abstract is to give record notice of the MOA (by filing this abstract in the public records) and thereby provide inquiry notice of the terms of the MOA. This Abstract does not provide a complete summary of the MOA and in no way modifies the provisions of the MOA, all of which provisions are specifically made a part hereof as fully and completely as if set out in full herein. Capitalized terms used and not otherwise defined herein have the meaning ascribed to the in the MOA.

3. This Abstract shall be binding on and inure to the benefit of the District and its successors and assigns and the Developer and any and all of Developer's successors in interest to the Property.

4. Upon the closing of any sale to an individual or entity who purchases one or more

constructed residential units within the Property for which the payment(s) required by the MOA have been made, the MOA shall automatically terminate as to the residential units and the parcel(s) upon which such units are located, whereupon such purchasing individual(s) or entity(ies) shall not be regarded as a successor, assignee, or transferee for purposes of the MOA, and this Abstract shall be deemed to be removed from record title with respect to the parcel(s) acquired by such purchasers.

IN WITNESS WHEREOF, the parties have executed this Abstract on the day and year first above written.

DISTRICT: **CONTRA COSTA WATER DISTRICT**
a California Independent Special District

By:_____
_____ **[print name]**
Its:_____

DEVELOPER: ___[NAME OF ENTITY]___,
a _____

By:_____
_____ **[print name]**
Its:_____

[ATTACH LEGAL DESCRIPTION OF DEVELOPER'S PROPERTY AS EXHIBIT ONE]

4.9-2 Impacts related to weak or compressible clay.

Weak or compressible clays can consolidate under additional loads from engineered fill and buildings. These soils can cause settlement of pavements and structures founded on shallow foundations.

Much of the project is underlain by relatively weak or moderately to highly compressible clay and silt with interbedded strata of moderately organic clay (Kleinfelder, p. 4). The presence of moderately organic clay could increase the potential for foundation settlement. A majority of the settlement on the project site is likely to occur during earthwork operations and would be aerial in extent. Therefore, weak or compressible soil could have a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measure would mitigate potential impacts related to weak or compressible soil to a *less-than-significant* level.

4.9-2 Prior to the approval of improvement plans, and after the project grading plans are completed and the approximate building loads are determined, a qualified geotechnical engineer shall determine if remediation measures such as removing and surcharging the compressible materials are necessary to minimize future settlement to acceptable levels. The applicant shall provide the findings of the consolidation analysis to the City Engineering Division for review and approval.

4.9-3 Loss of structural support due to potential liquefaction.

Liquefaction is a phenomenon during which granular material (silt or sand) is transformed from a solid state into a liquid state as a result of seismic activity. The primary factors determining liquefaction potential of a soil deposit are: (1) the level and duration of seismic ground motions; (2) the type and consistency of the soil; and (3) the depth to groundwater.

All of the geotechnical studies performed on the Emerson, Gilbert, and Burroughs sites indicate that variable thicknesses of liquefiable material exist below a majority of the entire project. Up to four inches of settlement could occur due to liquefaction. In addition, portions of the site do not have enough capping material to prevent the liquefiable material from venting to the surface creating sand boils, ground cracking, and other ground surface disruption.

Structural support related to the proposed project could be adversely affected by potential liquefaction within the project site. It should also be noted that CCWD raised a concern on the adjacent Cypress Grove property regarding the

potential for the canal to impact groundwater levels on the adjacent residential property; therefore, this could also be an issue with the Dutch Slough Properties and the impact would be considered ***potentially significant***.

Mitigation Measure(s)
Implementation of the following mitigation measure would mitigate potential impacts related to liquefiable soil to a *less-than-significant* level.

4.9-3(a) *Prior to issuance of a grading permit, the applicant/developer shall incorporate the recommendations of a design-level geotechnical report into the improvement plans. The following measures include, but are not limited to, the options available to reduce site liquefaction potential and/or adverse effects to structures located above potentially liquefiable soils. Once final grading plans are designed, the project's geotechnical engineers will need to determine the appropriate methods of mitigating the effects of liquefaction such as:*

- *Remove and replace potentially liquefiable soils;*
- *Strengthen foundations (e.g., post-tensioned slab, reinforced mat or grid foundation, or other similar system) to resist excessive differential settlement associated with seismically-induced liquefaction;*
- *Support the proposed structures on an engineered fill pad (minimum of 5 feet thick) in order to reduce differential settlement resulting from seismically-induced liquefaction and post-seismic pore pressure dissipation; and*
- *Densify potentially liquefiable soils with an in situ ground improvement technique such as deep dynamic compaction, vibro-compaction, vibro-replacement, compaction grouting, or other similar methods.*

4.9-3(b) *If deep dynamic compaction is expected to be implemented as the method of densification or for any other reason, the following measures shall be implemented:*

- *Geotechnical engineers for the District and the Group Member performing Deep Dynamic Compaction (the "DDC Member") shall mutually agree upon acceptable threshold limits for peak particle velocities measured during deep dynamic compaction at the toe of the Canal berm (the "Threshold Limits") along the DDC Member's Project. The sole purpose of the Threshold Limits is to attempt to avoid damage to the canal. The parties are not warranting that peak particle velocities at the toe of the Canal berm along the DDC Member's Project less than said Threshold Limits is safe or would not cause or contribute to*

Canal damage. In determining Threshold Limits, in addition to general safety and engineering factors, the District and DDC Member Engineers may also consider the types and amounts of comprehensive general liability insurance coverage provided by the DDC Member and its contractors or sub-contractors, as well as specific design, construction monitoring, and other measures that are developed to protect the Canal's Integrity, stability, and water quality as set forth above. (For example, if the District believes the amounts of comprehensive general liability insurance coverage provided by the DDC Member and its contractors or sub-contractors is insufficient, the Threshold Limits should be reduced accordingly to reflect this fact.) An independent licensed engineer selected by the District (with the concurrence of the DDC Member) shall, at the DDC Member's sole cost and expense, monitor measurements of peak particle velocities at the toe of the Canal berm along the DDC Member's Project during the period that Deep Dynamic Compaction is being performed, and shall submit to the District logs reflecting such measurements on a daily basis during such period.

- *To help ensure that the threshold limits are not exceeded, the DDC Member shall commence deep dynamic compaction on those portions of the project site located farthest from the Canal, and thereafter shall proceed with Deep Dynamic Compaction from those portions of the Project toward the Canal. That is, the DDC Member shall always conduct Deep Dynamic Compaction on this Project in a manner that the progression is in a direction toward the canal.*

- *If the threshold limits are exceeded while deep dynamic compaction is being performed, then the DDC Member shall immediately cease performing deep dynamic compaction within its Project and promptly notify the District. Deep dynamic compaction shall not resume unless and until (i) measures are developed and implemented by the DDC Member to ensure that the threshold limits are not exceeded, and (ii) the DDC Member notifies the District in writing of such measures.*

The CCWD has raised a concern regarding potential levee failure of the adjacent Contra Costa canal. The canal contains drinking water supplied to the district. The portion of the canal adjacent to the site is earth-lined and has been in existence since the 1950s. Significant breaches of this levee have not occurred in the past. In addition, the CCWD has the ability to shut off the water supply at the nearby pump station #1. The CCWD canal levee failure would therefore not be anticipated to result in a substantial adverse impact.

The protection offered by the existing Contra Costa Canal, as well as the additional levees put in place by the Cypress Grove project and proposed levee expansions around the Gilbert and Burroughs properties, would provide protection from floodwaters for the proposed project site and the surrounding areas. Therefore, the development would result in a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

4.12-2 Maintenance of levees surrounding the project.

The site is subject to flood risks from the Sacramento-San Joaquin Delta, which has a 100-year flood elevation of 7 feet above msl. To protect the Dutch Slough and Cypress Grove project areas, a levee system was built in 2005 along the northern boundary, south of the existing CCWD/USBR levee and along Sellers Avenue. The levee also extends from CCWD/USBR canal to Cypress Road.

The levee was built to an elevation of 10 feet above msl to protect against a flood elevation of seven feet with an additional three feet of freeboard. The remainder of the project perimeter to the south is higher than 10 feet msl and does not require further flood protection.

The Gilbert and Burroughs properties would construct levee systems similar to those built for the Cypress Grove project. The existing levee along Sellers Avenue may be modified with this development to cross Sellers Avenue and connect into the proposed Gilbert levee system, eliminating the requirement for levees along Sellers Avenue. If not maintained properly, the levee system surrounding the project could cause significant flooding risks to people and structures in the Dutch Slough development. Therefore, the impacts of the levee system would be ***potentially significant*** to future residents and structures if not maintained properly.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level:

4.12-2 *Prior to Improvement Plan approvals for any of the three subdivisions, the project engineer shall develop a levee*

maintenance program. The maintenance program shall be submitted for the review and approval of the City Engineer and include the plan for financing and maintenance of the levee system. The plan shall include the following guidelines:

- *All pertinent agencies that may have jurisdiction over the repair area shall be consulted. These agencies may include (but are not limited to) the California Department of Fish and Game, the U.S. Fish and Wildlife Service, the Army Corps of Engineers, the Regional Water Quality Control Board, the Contra Costa County Public Works Department, and the Contra Costa County Flood Control District.*
- *Both an engineering geologist and a civil engineer shall be consulted on significant embankment repairs.*
- *Soil removal and placement shall be limited to the minimum amount needed to achieve bank stabilization.*
- *Access roads shall be kept clear of obstructions and maintained in a manner that allows access for maintenance equipment at all times. Access road dimensions and specifications shall conform to guidelines prepared by the City of Oakley.*
- *The establishment of woody vegetation (e.g. trees or shrubs) can impair the integrity of the levees. Therefore, regular inspection for, and removal of, woody vegetation shall be required.*
- *Tunnels created by ground squirrels and other animals can also compromise the integrity of the levees. Annual inspection of the levees by a competent professional shall be required to assess the need for remedial repairs and animal control measures.*
- *Material shall not be placed in a manner that could be eroded by normal or expected high flows.*
- *Bank stabilization in excess of 500 feet in length or an average of one cubic yard per running foot must be authorized by the City of Oakley or Contra Costa County Flood Control.*
- *The condition of levee embankments and access roads shall be monitored in detail as part of routine monitoring, as well as during post-flood event inspections. During periodic monitoring visits, personnel shall inspect the entire perimeter of the levees around the project and note evidence of erosion or slope failures on both sides of the levee. Embankments shall generally be free of erosion, rills, slumps, and landslides.*

- *Storm Drain Outfall at Emerson Slough.* The outfall location for the water pumped from the lakes on both the Emerson and Gilbert properties would be located at the southern end of Emerson Slough, just north of the Contra Costa Canal at the end of Sellers Avenue. The outfall structure was discussed in detail in the Stormwater Management Plan for the Cypress Grove project, which is currently under construction to the west of the proposed project site. The outfall structure was designed, analyzed for impacts, and permitted as part of the Cypress Grove project. The outfall was designed with four pipe outlets, one from Cypress Grove, one from the Emerson lake and drainage system, one for drainage south of Cypress Road, and one for the Gilbert lake and drainage system. The outfall is permitted for a total peak discharge of 140 cfs.

In the event of a 100-year storm, the multi-purpose lakes in the Emerson and Gilbert properties would be able to provide active storage volumes of 19.7 acre-feet. The volume above the water-quality elevation is reserved to accommodate the runoff from large storm events up to and including the CCFCD 100-year design storms. Therefore, the multi-purpose lakes on the Emerson and Gilbert areas of the project site are designed to contain the rainfall associated with the 100-year storm.

The storm drain system, stormwater pond, and stormwater pump station and outfall designed for the proposed project would ensure that the change in peak stormwater flows resulting from the proposed project would have a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

4.12-4 Adequate water supply and delivery for new residents.

The proposed project would result in an increased demand for domestic water. The Diablo Water District (DWD) provides water service to all residential and commercial users within the city limits. The water supply available to DWD is the Central Valley Project water purchased by Contra Costa Water District (CCWD) under CCWD' contract number 175r-3401 with the U.S. Bureau of Reclamation, and resold by CCWD to DWD under CCWD's Code of Regulations.

This supply is sufficient to meet the projected water demand associated with Dutch Slough. The approval of the Bureau of Reclamation must be obtained for the inclusion of the land of Dutch Slough for municipal and industrial water service under CCWD's contract. CCWD's application for inclusion is underway and approval is anticipated.

According to the City of Oakley's 2020 General Plan, maximum water needs figures are calculated based on the assumption that single-family units consume

an average of 525 gallons per day (as determined by DWD standards included in the Oakley 2020 General Plan, p. 4-21.) The projected water demand for the Dutch Slough area, bounded by the Cypress Grove project to the west, Cypress Road to the south and the Contra Costa Canal to the north and east would be an average of 0.7 MGD, with a maximum daily demand of 1.4 MGD and a peak hour demand of 2.1 MGD.

The maximum projected water demand associated with Dutch Slough is estimated to be approximately 253.5 million gallons per year. The availability of this quantity is included and accounted for in DWD's Urban Water Management Plan, DWD's 1998 Facilities Plan Update, CCWD's 2000 Urban Water Management Plan, and CCWD's 1996 Future Water Supply Study. The maximum quantity of water purchased by DWD in any prior year is approximately 1.8 billion gallons. Delivery of water to Dutch Slough can be accomplished by extensions of DWD's existing water mains. Funding for the delivery of the supply is documented in DWD's 1998 Facilities Plan Update. State and local permits for construction of the extensions can be obtained routinely in the normal course of business. The DWD water supplies that are available for Dutch Slough do not include ground water.

The Dutch Slough project site is located within the boundaries of CCWD service area. However, the entire project is located north of East Cypress Road, outside of the CCWD's CVP contractual service area boundary. Therefore, the project must be approved for inclusion in the CVP service area boundary by the USBR. An application for inclusion of the project into the CVP service area boundary is currently under consideration by CCWD and USBR; however, the final CEQA documentation and other environmental information, including evidence of compliance with ESA and other federal regulations would need to be completed for the Dutch Slough Project and coordinated through CCWD for submission to the Bureau of Reclamation as an inclusion application.

As a federal approval, USBR's inclusion must comply with Section 7 of the ESA. Under section 7, USBR must consult with the U.S. Fish & Wildlife Service (USFWS) and NOAA Fisheries on any federal action (including approval of inclusion) which "may affect" a federally-listed species or adversely modify critical habitat. In conjunction with CCWD's Future Water Supply Implementation Program and renewal of its CVP long-term water service contract, USBR consulted with the USFWS under Section 7. On March 11, 2005, USFWS issued its biological opinion, which opinion amended its April 27, 2000 biological opinion and evaluated the direct, indirect, and cumulative effects of CCWD's water supply program and long-term contract renewal. The amended biological opinion concluded that the proposed action (USBR's approval of CCWD's water supply program and long-term contract) was not likely to jeopardize the continued existence of any federally-listed species or result in the destruction or adverse modification of critical habitat. To address the indirect effects of the proposed action on upland species within CCWD's service area, the

USFWS conditioned the opinion on CCWD's agreement to limit water deliveries to not more than 148,000 acre feet annually until an incidental take permit is issued for the East Contra Costa Habitat Conservation Plan (HCP). To address this limitation on water deliveries, the USFWS and CCWD have joined with several local jurisdictions (including the City of Oakley) to prepare an HCP for East Contra Costa County. That HCP was released in draft last August 2005, and final HCP and the USFWS's approval of an incidental take permit are expected in mid-2006, before final construction and occupancy of residential or commercial structures in the project area. If for any reason the HCP is not finally adopted, the project may obtain ESA compliance through its own Section 7 process with USBR, or alternatively USBR can reinstate consultations with USFWS concerning CCWD's Future Water Supply Implementation Program.

In addition, on June 1, 2006, the project applicants entered into that certain *East Cypress HCP/NCCP Memorandum of Agreement* (HCP MOA) with USFWS and the California Department of Fish and Game to assure, among other things, the expedited issuance of all required inclusions in the CCWD's CVP contractual service area, the prompt completion of any other required Section 7 consultations, and the timely and effective mitigation for potential impacts to special status species. Pursuant to the terms of the HCP MOA, the project applicants agreed to participate in the HCP and USFWS agreed to initiate discussion with USBR and CCWD leading to the initiation of formal consultation with USFWS, under section 7 of the ESA, relative to inclusion of the project site into the CCWD's CVP contractual service area.

The Dutch Slough project site is in the eastern portion of DWD's Sphere of Influence. The area is currently operating as a new pressure zone. A pressure reducing station is planned to be located near the intersection of Sellers Avenue and Cypress Road to maintain acceptable pressures under low demand conditions. The Randall-Bold Water Treatment Plant would provide all water supplies in low demand conditions. Under higher demand conditions, Reservoir R-3 would be able to provide additional supplies.

The DWD Facilities Update recommended a Capital Improvement Program (CIP) for service within the DWD's Sphere of Influence to help support and plan the necessary facility expansion in the area. The schedule for improvements to serve new developments is dependent on the actual growth that occurs. Included in the CIP are:

- Installation of new pipelines.
- Construction of a secondary emergency well.
- Addition of Reservoir No. 3.
- Purchase of additional capacity at the Randall-Bold WTP.
- Increasing capacity at existing reservoirs.

The total capital investment for all of the improvements is estimated at $27.4 million (in 1998 dollars).

The DWD has funding mechanisms to finance capital improvement in new developments. These mechanisms include a Facility Reserve Charge (FRC) and Main Extension Reimbursement Assessment (MERA). Currently FRC's are charged to new water connections based upon the water meter size. MERA funds are used to reimburse developers who install oversized water lines.

Providing near-term service to the proposed developments at the Dutch Slough properties would require the construction of a 20-inch waterline north of Cypress Road that would loop back to the Cypress Road Main (Figure 4.12-10). In addition, to avoid cycling too much water through Reservoir R-1, off-site system improvements would be required. The proposed project would require the completion of the 24-inch waterline loop in Carpenter Road between Empire and O'Hara Avenue. The 24-inch main in Carpenter Road is presently under construction by the Magnolia Park Subdivision and should be in service by the time it would be needed for servicing the project area.

The development of the proposed project would necessitate the buildout of infrastructure in accordance with DWD's capital improvement plan and other off-site improvements. Therefore, the impact on water supply and delivery would be considered ***potentially significant.***

Mitigation Measure(s)
Implementation of the following mitigation measures would mitigate potential impacts to a *less-than-significant* level.

4.12-4(a) *Prior to approval of the final map the applicant shall be required to pay a fair share fee as determined by the DWD toward the CIP for water service infrastructure improvements.*

4.12-4(b) *Each final subdivision map approval shall be conditioned on DWD's issuance of a "Written Verification" that its water supplies are sufficient to serve the subdivision, if required by and consistent with SB 221.*

4.12-4(c) *Each final subdivision map approval shall be conditioned on the inclusion of the property covered by such map within the CCWD's CVP contractual service area.*

The lakes would be multi-purpose in nature and therefore require different operating levels depending on the circumstances of individual storms and the season of the year. The pond would be designed as an amenity to the project and should therefore be attractive and safe, as well as functional. The flow-based treatment controls include bioretention areas, bioswales and similar BMPs where the rate of runoff is the primary design criterion, and not the total runoff volume.

The sizing calculations for deriving the appropriate water quality treatment volume were taken directly from the Stormwater C.3 Guidebook (summarized in Figure 7 of Balance Hydrologics' *Preliminary Stormwater Management Plan for Burroughs Property*). The volume estimates are based on the directly connected impervious area in the contributing watershed. The required treatment volume is 5.6 acre-feet. This volume corresponds with the lake being filled to the elevation of 3.1 feet. The only time that the lakes would fill to this elevation would be during moderately large storms, or when a sustained series of storms results in more than 5.6 acre-feet of runoff in 48 hours.

Conclusion

The proposed project would be required to obtain and comply with the NPDES General Permit and the stormwater management system is designed to adequately treat urban runoff generated by the project. Thus, during both the construction and operation of the proposed project, sediment and urban pollutants would not reach the surrounding water bodies. Therefore the proposed project would result in a ***less-than-significant*** impact on water quality in the Contra Costa Canal and Emerson Slough.

Mitigation Measure(s)
None required.

4.12-6 Maintenance of stormwater ponds.

The proposed lakes would be operated and managed like other similar lake features throughout central California. Best practices associated with stormwater drainage and lake management have become well established and are built upon years of accumulated experience. Details regarding the care and maintenance of the multi-purpose lakes in the Gilbert and Emerson properties would be detailed in a separate Operations Maintenance Manual (OMM).

Several key issues for upkeep and maintenance of the multi-purpose lakes include maintenance of water levels in dry periods. From the months of May to October, the lakes would likely require make-up water to maintain their normal surface elevation as a result of evaporation. Calculations show that in the period of highest demand in June and July, each lake would require approximately 3 acre-feet per month (Balance Hydrologics' *Preliminary Stormwater Management Plan for Burroughs Property*, Table 9). The most likely source for this replacement

water would be groundwater pumped via well(s). The use of well water would be consistent with the lake as a central element of the common area irrigation systems. Other maintenance issues that would be detailed in the OMM include maintaining an attractive shoreline, removal of debris and control of nutrient loads and aquatic algae and plants.

If not maintained properly, the detention basins could have an adverse effect on future residents in the proposed project. Insect, wildlife, and/or water quality issues could adversely affect future residents. Therefore, the impacts of the water quality detention basin would be ***potentially significant*** to future residents.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level:

4.12-6 *Prior to Improvement Plan approvals for any of the subdivisions, the project engineer shall develop a storm drain system maintenance program. The maintenance program shall be submitted for the review and approval of the City Engineer and include the plan for financing and maintenance of the water quality detention basin. The plan shall address aquatic vegetation and vector control, pond bank and inlet structure conditions, and pond sediment removal.*

4.12-7 Maintenance of storm drain system.

Storm drains throughout the project would function best if the amount of sediment entering the system is kept to a minimum. The level terrain at the project site would help to reduce the overall amount of sediment generated within the drainage area of the stormwater pond because the erosion potential would be low, particularly after landscaping has been established. Many of the routine BMPs implemented as part of the City of Oakley's responsibilities under the NPDES permit for Contra Costa County would work to reduce sediment production and mobilization within the project. Among the most important would be the following:

- Regular street sweeping. Regular street sweeping can have a significant impact on the control of such constituents of concern as trash and debris, particulates, and heavy metals. All streets should be swept on a regular basis to control the build-up of sediment and trash with particular attention to the early fall period prior to the onset of the winter rainy season. Street sweeping schedules would follow City of Oakley standards, but should not be less than monthly.
- Inlet and catch basin cleaning. Stormwater inlets and catch basins can function as effective sediment traps for heavier materials. Therefore, these structures would need to be maintained and cleaned on at least an

annual basis. Typical maintenance schedules for these activities include a thorough inspection and cleaning in late summer or early fall and a mid-winter inspection to identify any new problems that may have arisen.

If not maintained properly, the storm drain system could have an adverse effect on the drainage patterns of the project site and the treatment efficiency of the water quality detention pond due to it being heavily loaded with sediment. Therefore, the impacts of the storm drain system would be ***potentially significant*** to future residents.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the impact to a *less-than-significant* level:

4.12-7 *Implement Mitigation Measure 4.12-6.*

4.12-8 Groundwater Interaction with stormwater pond well.

The project includes construction of two lakes that would be supplied by stormwater runoff and groundwater resources for the purpose of establishing storage capacity. Groundwater resources would be utilized to maintain the water level of the lakes and also supply turf irrigation water for landscaping and common green spaces. To evaluate the affects on groundwater supply and demand contributed from the project, in addition to other nearby planned development for which additional lakes and community park and turf space are planned, ENGEO Inc. prepared the October 2005 groundwater study for the project site (the "Groundwater Study"). The Groundwater Study evaluated groundwater conditions over a much broader area than the site (approximately 12 square miles) (the "groundwater study area") to provide an adequate and cumulative assessment of the potential impacts of the project's use of groundwater for lake water level maintenance and turf irrigation.

To evaluate the hydrology specific to the groundwater study area, available Water Well Drillers Reports (WWDRs) were obtained from the Department of Water Resources for the entire groundwater study area. In addition, a reconnaissance of the area was conducted to identify groundwater wells for which WWDRs were not on file. The ENGEO report also evaluated other available studies of the groundwater basin, including but no limited to, Luhdorff and Scalmanini Consulting Engineer's (LSCE) 1999 investigation of the groundwater conditions in the east Contra Costa County area for the East County Water Management Association and LSCE's 2005 investigation of two new wells within the study area.. Most of the wells in the groundwater study area were screened between 100 and 250 feet below the ground surface (bgs), while some of the boreholes extended as deep as 610 feet bgs.

CITY of OAKLEY
A PLACE for FAMILIES in the HEART of the DELTA

NOTICE OF WITHDRAWAL

Dutch Slough Properties
Draft Environmental Impact Report
SCH# 2005102090

Date: **November 30, 2006**
Lead Agency: **City of Oakley**

Project Description:
A Draft Environmental Impact Report (DEIR) to consider the potential environmental effects of the proposed Dutch Slough Properties Project, located along Cypress Road, south and west of the Contra Costa Water District Canal. The proposed project requires the approval of a rezone, parcel maps, vesting tentative maps, and design review. The project includes the development of approximately 1,350 dwelling units on ±303 acres. In addition to the residential lots, the project includes a potential school site, commercial development, trails, five parks, levees, two storm water detention ponds, as well as the infrastructure improvements necessary to accommodate the new development. Potentially significant environmental impacts resulting from the project, for which mitigation measures have been proposed, are contained in the Draft Environmental Impact Report, and include impacts to: aesthetics, transportation and circulation, air quality, noise, hazards, biological resources, geological resources, mineral resources, hydrology, water supply and water quality, and public services and utilities. Impacts to regional air pollutant emissions and cumulative impacts on air quality are considered to be significant and unavoidable.

A Notice of Availability for the DEIR was published on August 4, 2006 and the DEIR was made available for public review and comment at that time.

The City of Oakley has withdrawn this Draft Environmental Impact Report as of November 30, 2006.

If there are any questions regarding this withdrawal please contact:

Rochelle Henson, Senior Planner
City of Oakley
3231 Main Street
Oakley, CA 94561
(925) 625-7000

APPENDIX C

Initial Study

Gilbert Property

Prepared for:

CITY OF OAKLEY

MARCH 2007

Prepared by:

RANEY PLANNING & MANAGEMENT, INC.

TABLE OF CONTENTS

INITIAL STUDY

February 2007

A. BACKGROUND

1.	Project Title:	Gilbert Property
2.	Lead Agency Name and Address:	City of Oakley Community Development Department 3231 Main Street Oakley, CA 94561
3.	Contact Person and Phone Number:	Rochelle Henson Senior Planner (925) 625-7000
4.	Project Location:	North of Cypress Road, east Cypress Grove Project, east of Emerson and west of Burroughs Properties City of Oakley Contra Costa County
5.	Project Sponsor's Name and Address:	Castle Companies 12885 Alcosta Blvd., Ste. A San Ramon, CA 94583 Ryder Homes 1425 Treat Blvd. Walnut Creek, CA 94597
6.	Owner's name and address:	Brent Gilbert P.O. Box 1833 Byron, CA 94514
7.	General Plan Designation:	Single Family Low Single Family Medium Multi-Family Low Commercial
8.	Existing Zoning:	Heavy Agriculture (A-3)
9.	Proposed Zoning:	Planned Unit Development (P-1)

10. Project Description Summary:

The proposed 120-acre Gilbert Property project would develop property located in the City of Oakley, Contra Costa County, California (see Figure 1) and would include approximately 510 residential units, the majority of these units are planned to be single-family dwellings.

B. SOURCES

The following documents are referenced information sources utilized by this analysis:

1. Basin Research Associates *Archaeological Resource Assessment* (Gilbert). December 2004.
2. Castle Companies. *Stormwater Management Plan* (Gilbert). July 2005.
3. City of Oakley. *City of Oakley 2020 General Plan*. December 2002.
4. City of Oakley. *City of Oakley General Plan Background Report*. September 2001.
5. City of Oakley. *City of Oakley General Plan EIR*. September 2002.
6. City of Oakley. *City of Oakley Zoning Code*. November 2005.
7. Lowney Associates. *Phase 1 Environmental Site Assessment and Limited Soil Quality Evaluation.* September 3, 2004.
8. Stevens, Ferrone & Bailey Engineering Company, Inc. *Geotechnical Investigation Report* (Gilbert). August, 2004.
9. Sycamore Associates LLC. *Biological Resource Analysis*. January 2005.
10. USDA Soil Conservation Service. *Contra Costa County Soil Survey*. 1973.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Potentially Significant unless Mitigation Incorporated" as indicated by the checklist on the following pages.

✖ **Aesthetics**	✖ **Agriculture**	✖ **Air Quality**
✖ **Biological Resources**	✖ **Cultural Resources**	✖ **Geology/Soils**
✖ **Hazards & Hazardous Materials**	✖ **Hydrology/Water Quality**	✖ **Land Use & Planning**
✖ **Mineral Resources**	✖ **Noise**	✖ **Population & Housing**
✖ **Public Services**	✖ **Recreation**	✖ **Transportation & Circulation**
✖ **Utilities/Service Systems**	✖ **Mandatory Findings of Significance**	

D. DETERMINATION

On the basis of this initial study:

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

☐ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____	_____
Signature	Date
_____	City of Oakley
Printed Name	For

E. BACKGROUND AND INTRODUCTION

This Initial Study identifies and analyzes the potential environmental impacts of the proposed project. The information and analysis presented in this document is organized in accordance with the order of the CEQA checklist in Appendix G of the CEQA Guidelines. If the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures that should be applied to the project are prescribed.

The mitigation measures prescribed for environmental effects described in this Initial Study will be implemented in conjunction with the project, as required by CEQA. The mitigation measures will be incorporated into the project through project conditions of approval. The City will adopt findings and a Mitigation Monitoring/Reporting Program for the project in conjunction with its approval of the project.

The environmental setting and impact discussion for each section of this Initial Study have been largely based on information in the *Oakley General Plan Environmental Impact Report*, *2003 Development Agreement* and *IS/MND*, and the *Oakley 2020 General Plan*. In addition, a series of detailed technical reports, prepared specifically for the Gilbert Property project by subconsultants, are utilized where appropriate.

F. PROJECT DESCRIPTION

The proposed 120-acre Gilbert Property project would develop three properties located in the City of Oakley, Contra Costa County, California (see Figure 1) and would include approximately 510 residential units, the majority of these units are planned to be single-family dwellings.

The Gilbert Property project site is on the north side of Cypress Road, east of the approved and partially developed Cypress Grove project, the Emerson property, Delta Vista Middle School and Iron House Elementary School (see Figure 2). The project site is bounded on the north by the Contra Costa Water District Canal (CCWD/USBR Canal), which segregates the project site from the open space acreage to the north currently owned by the State of California and is bordered on the immediate east by the Emerson property and west by the Burroughs property. A 55-acre portion of land immediately to the north of the CCWD/USBR canal and the project site at the end of Sellers Avenue is held in escrow, pursuant to a Memorandum of Understanding and Development Agreement, for future conveyance to the City of Oakley as a community park. The Gilbert property is Assessor Parcel Number 032-081-016.

Required Approvals

- Certification of an Environmental Impact Report;
- Rezone to Planned Development (P-1) (including Preliminary Development Plan);
- Approval of Parcel Maps;
- Approval of Tentative Maps/Vesting Tentative Maps;
- Approval of Design Review; and
- Acquisition of right of way and easements.

Figure 1
Regional Location Map

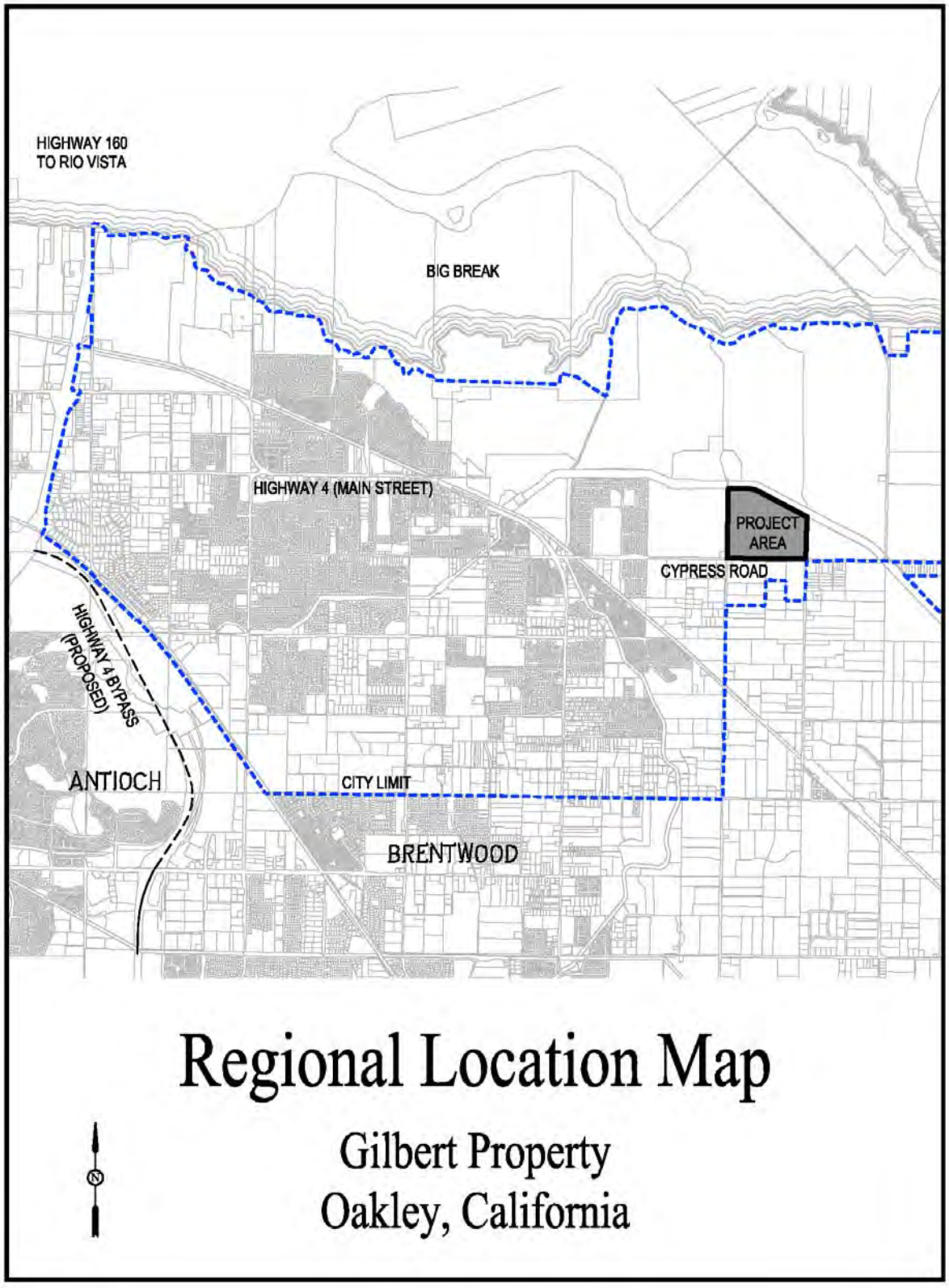
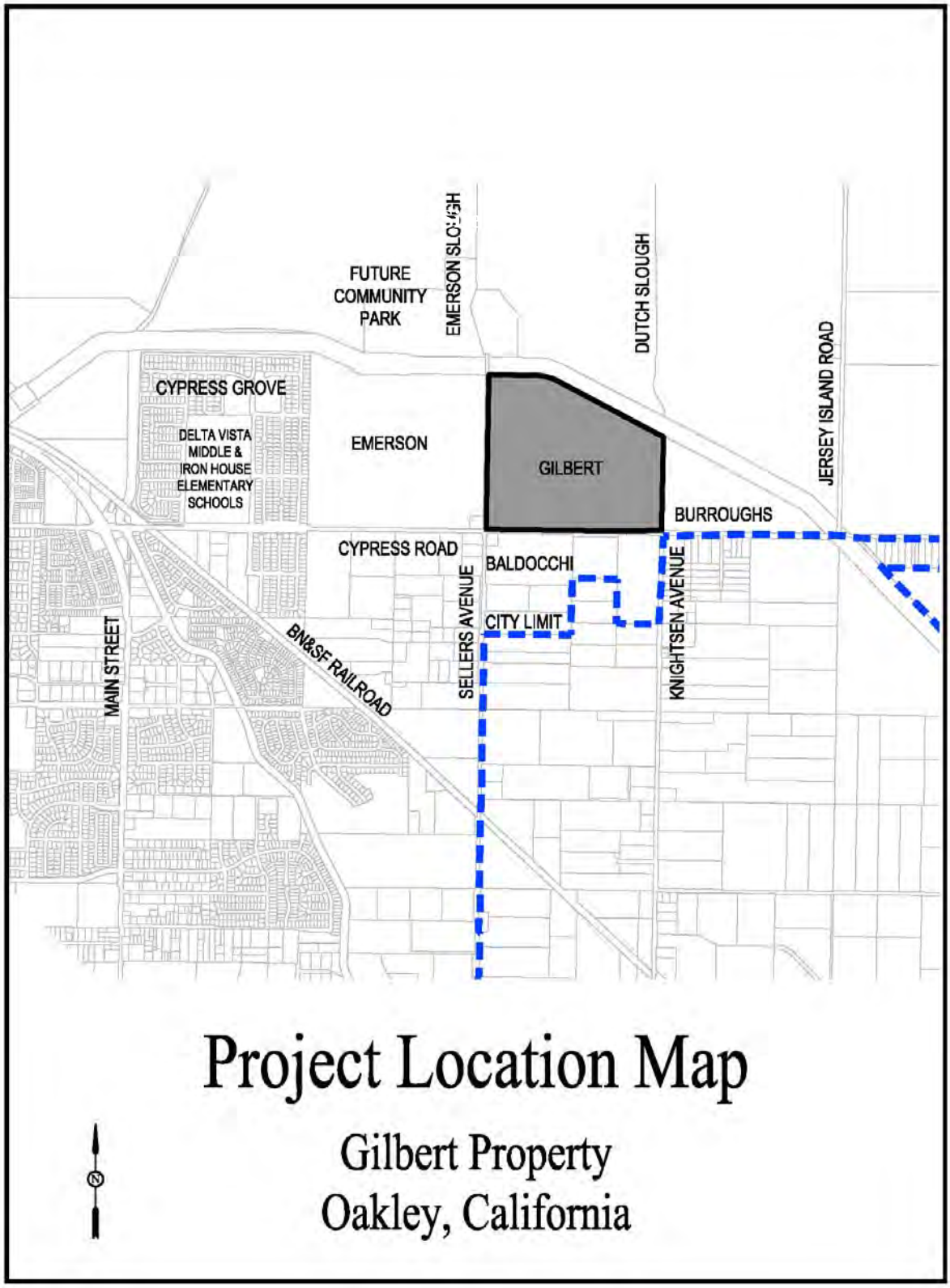


Figure 2
Project Location Map



G. ENVIRONMENTAL CHECKLIST

The following Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended as appropriate as part of the proposed project.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which mitigation has not been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Potentially Significant Unless Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	✖	☐	☐	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	✖	☐	☐	☐
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	✖	☐	☐	☐
d. Create a new source of substantial light or glare which would adversely affect day or night-time views in the area?	✖	☐	☐	☐

Discussion

a-d. The proposed project is not within an area designated as a scenic vista, and the project site is relatively flat. Mount Diablo is located east of Oakley, and the City has distinctive views of Mount Diablo. The City of Oakley General Plan recognizes views of Mount Diablo as an important visual resource. However, the proposed project would have relatively low profile structures, with a maximum 2-story height in the single-family development area and would not be expected to significantly alter the distant views of Mount Diablo for current or future residents in the project vicinity.

The project site consists predominantly of agricultural land and is located near State Route 4. Although SR 4 is not officially designated as a State Scenic Highway, the Issues Identification Workshop on February 5, 2001, Issue OS-5 (preserve scenic resources and view corridors within Oakley, i.e. Mt. Diablo, Delta, river, etc.) got a rank of 2.2, which categorized it as a Significant Issue. In addition, development of the proposed project could shield views of these aesthetic resources from neighboring properties to the south and west.

Development of the project site could potentially affect the views along this scenic resource, degrade the existing scenic quality of the project site, and could possibly damage scenic resources of the site. In addition, development of the project site would create a new source of substantial light or glare which could adversely affect day or night-time views in the area. Therefore, aesthetic impacts of the proposed project would be considered ***potentially significant***.

Mitigation Measure(s)
Further analysis of this impact will be included in the Aesthetics chapter of the Gilbert Property Draft EIR.

II AGRICULTURE RESOURCES. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping Program of the California Resources Agency, to non-agricultural use?	✖	☐	☐	☐
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	✖	☐	☐	☐
c. Involve other changes in the existing environment which, due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use?	✖	☐	☐	☐

Discussion

a, c. The Gilbert Property project is an agricultural site, which currently contains grazing lands. The project site is designated Prime Farmland and Farmland of Statewide Importance, as shown on the Contra Costa County Soil Survey. The proposed 510-residential unit development would result in the conversion of the parcel to an urban residential site. Because the project involves the conversion of approximately 120 acres of agricultural land to an urban development, a ***potentially significant*** impact would occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Land Use and Agricultural Resources chapter of the Gilbert Property Draft EIR.

b. The project site is not under Williamson Act contract; however, the site is zoned Heavy Agriculture (A-3). The development of the site would include single-family homes, which would result in the conversion of agricultural lands to urban uses. Because the proposed project would conflict with existing zoning for agriculture, a ***potentially significant*** impact would occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Land Use and Agricultural Resources chapter of the Gilbert Property Draft EIR.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	✖	☐	☐	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	✖	☐	☐	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	✖	☐	☐	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	✖	☐	☐	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☐	✖

Discussion

a-d. The City of Oakley is part of the San Francisco Bay Area airshed, which is dominated by the strength and position of a semi-permanent, high-pressure center over the Pacific Ocean. The area is exposed to winds from both the east and west, and the terrain provides little protection from the wind. Air quality within the region is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The BAAQMD is considered nonattainment-unclassified for the national 1-hour ozone standard. The District is either unclassified or attainment for other pollutants of concern. The BAAQMD periodically prepares and updates plans to achieve the goal of healthy air. In addition, the District establishes thresholds for pollutants that, if exceeded, would constitute a significant impact.

The proposed project would result in increased vehicle trips in the City of Oakley, which would generate increased amounts of ozone precursors (NO_x and ROG) and carbon monoxide (CO) that could exceed District thresholds and conflict with applicable air quality plans. In addition, the construction phase of the project would involve grading and excavation activities that would generate particulate matter (PM_{10}), which could exceed District thresholds.

Furthermore, the project site consists of open agricultural land, which would be converted to urban uses upon project approval. Therefore, the proposed project would have a ***potentially significant*** impact on air quality by potentially conflicting with applicable thresholds and plans.

Mitigation Measure(s)
Further analysis of this impact will be included in the Air Quality chapter of the Gilbert Property Draft EIR.

e. The proposed project would not include industrial or intensive agricultural uses which could result in objectionable odors. Therefore, the project would have ***no impact*** pertaining to the creation of odors.

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	✖			
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	✖	☐	☐	☐
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	✖	☐	☐	☐
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	✖	☐	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	✖	☐	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	✖

Discussion

a-d. Sycamore Associates prepared a biological analysis on December 6, 2005. The Gilbert property consists of irrigated fields used primarily as livestock pastures and supports herbaceous, non-native, annual and perennial grasses and forbs. In the center of the site is a degraded sand mound that has been highly disturbed by grazing and is dominated by non-native annual grasslands. Various remnants of past cattle operations exist on site, such as an abandoned house and well.

Several small, low-lying areas are found alongside the edge of the sand mound, totaling 1.14 acres. These are either the remains of irrigated pastures, or seasonal wetland habitats that occupy the low areas of the level plain within the irrigated pasture.

The property contains a network of abandoned ditches, which formerly carried irrigation water onto, or drained tailwater from summer irrigated pastures. Five such drainage

ditches totaling 1.19 acres are located on the property, which are believed to be located in upland areas. The largest ditch runs at the base of the Contra Costa Canal Levee along the northern border of the site. The drainage ditch may be receiving subsurface seepage from the canal, which at this location consists of an unlined earthen conveyance. The remaining ditches do not support wetland vegetation.

A portion of Dutch Slough (0.52 acres) is located on the Gilbert property. The slough consists of a linear channel that runs along 1,500 feet of the eastern edge of the site. At this location, the Dutch Slough is dominated by native species of plants. The slough has been realigned into a linear artificial channel, but it is directly connected to a system of delta waterways north of the site, and is tidally influenced at this location.

Conclusion

The inventory searches conducted for the project site found that a variety of special-status plant and animal species are known to have the potential to occur in eastern Contra Costa County, where the project site is located. The conversion of the project site from undeveloped agricultural land to urban development could have adverse impacts to special-status wildlife species. Therefore, the proposed project would have a ***potentially significant*** impact to special-status species.

Mitigation Measure(s)
Further analysis of this impact will be included in the Biological Resources chapter of the Gilbert Property Draft EIR.

e. Sycamore Associates' report prepared for the Gilbert property identified living trees on the project site. Because native and non-native trees are located within the project site, a ***potentially significant*** impact would occur**.**

Mitigation Measure(s)
Further analysis of this impact will be included in the Biological Resources chapter of the Gilbert Property Draft EIR.

f. The Draft East Contra Costa County Habitat Conservation Plan (HCP)/Natural Communities Conservation Plan (NCCP) is currently under public review. However, because the HCP/NCCP has not been formally adopted, the proposal project would not conflict with the Plans, and ***no impact*** would occur.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	✖	☐	☐	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	✖	☐	☐	☐
c. Directly or indirectly destroy a unique paleontological resource on site or unique geologic features?	✖	☐	☐	☐
d. Disturb any human remains, including those interred outside of formal cemeteries.	✖	☐	☐	☐

Discussion

a. According to the cultural resources reports prepared for the project site by Basin Research Associates (July 2004), two historic-era historical resources are located in and adjacent to the project area: Iron House School located on the Emerson property to the west of the project site, and part of the Contra Costa Canal (adjacent to the project area). Other local, state or federal historically or architecturally significant structures, landmarks, or points of interest have not been identified within or adjacent to the project area. One historic-era cultural resource, Iron House landing (later known as Babbe's Landing), is located just north of the project site.

The former Iron House School, previously located at the northwest corner of Cypress Road and Sellers Avenue, has been moved to the northeast quadrant of the neighboring Emerson Property. Three other buildings that could be over 50 years in age (a small one-story farm house, a barn, and an outbuilding) should be reviewed and evaluated by a qualified archeologist to determine if they can be considered historic resources under the California Environmental Quality Act.

Even if a resource is not listed in, or determined eligible for listing in the California Register, or included in a local register of historical resources, or even identified in an historical resources survey, the resource can still be determined by a lead agency to be an historical resource. The known significant historical resources in the project area could be subject to damage or loss as a result of development; therefore, a ***potentially significant*** impact to historical resources could occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Cultural Resources chapter of the Gilbert Property Draft EIR.

b-d. Archeologists have found few prehistoric sites in the Oakley area. One substantial shell mound was discovered early in the twentieth century near what is now the east edge of town. The Northwest Information Center of the California Historical Resources Information System now keeps track of archeological investigations undertaken in Oakley. Around three dozen such projects have been completed in the past 25 years,

yielding only four prehistoric sites in the City. However, the Information Center believes there is a high possibility that other prehistoric sites remain within the City.

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

Development included in the proposed project, such as road improvements, utility corridors, and excavation associated with residential, or business development could result in the destruction or damage of unknown archeological or paleontological resources.

Although studies suggest that the project area does not contain a large number of prehistoric sites or artifacts, archeological sensitivity within the project area cannot be ruled out. Therefore, because there is a potential for archeological resources to exist virtually anywhere, even in areas thought to be of relatively low sensitivity, a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Further analysis of this impact will be included in the Cultural Resources chapter of the Gilbert Property Draft EIR.

VI. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	✖	☐	☐	☐
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist - Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault?	✖	☐	☐	☐
ii. Strong seismic ground shaking?	✖	☐	☐	☐
iii. Seismic-related ground failure, including liquefaction?	✖	☐	☐	☐
iv. Landslides?	✖	☐	☐	☐
b. Result in substantial soil erosion or the loss of topsoil?	✖	☐	☐	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	✖	☐	☐	☐
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code?	✖	☐	☐	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	✖

Discussion

ai-ii. Ground shaking is a complex concept related to velocity, amplitude, and duration of earthquake vibrations. Damage from ground shaking is caused by the transmission of earthquake vibrations from the ground to the structure.

Stevens, Ferrone & Bailey Engineering Company, Inc., prepared a *Geotechnical Investigation* (August, 2004) for the Gilbert property and surrounding area. The report states that the area is not located within an Alquist-Priolo Earthquake Fault Zone. The USGS San Francisco Bay Area Region Probability Map indicates that the nearest mapped fault is the Clayton Fault, which is considered active under the Alquist-Priolo Earthquake Fault Zones Act (1994) and is situated approximately 12 miles southwest of the project site. Earthquake intensities vary throughout the Bay Area, depending upon numerous factors, including the magnitude of an earthquake, the distance of the site from the causative fault, and the type of materials underlying the site. The U.S. Geological Survey (2003) indicates that there is a 62 percent chance of at least one magnitude 6.7 or greater earthquake striking the San Francisco Bay region between 2003 and 2032. Therefore, the site will probably be subjected to at least one moderate to severe earthquake, which would cause strong ground shaking, in the near future.

Other potentially active faults in the San Francisco Bay Area include the Marsh Creek Fault (12 1/2 miles southwest), Greenville Fault (16 miles southwest), Concord Fault (18 miles west), Pleasanton Fault (21 miles southwest), Calaveras Fault (22 1/2 miles southwest), Verona Fault (26 miles southwest), Hayward Fault (31 miles southwest), and the San Andreas Fault (49 miles southwest).

The 1997 Uniform Building Code (UBC) Chapter 16, Division of Earthquake Design, requires that structures be designed using certain seismic design criteria. The criteria are based in part on the seismic zone, soil profile, and the proximity of the site to active faults. During an earthquake event, structures located near active faults can be subjected to near-source energy motions that may be damaging to structures, if the effects of these energy motions have not been considered in the structural design.

Because the proposed project involves the construction of up to 510 residential units, the impact to people and structures on the site from seismic hazards would be considered ***potentially significant***.

Mitigation Measure(s)
Further analysis of this impact will be included in the Geology chapter of the Gilbert Property Draft EIR.

aiii. The *Geotechnical Investigation* cited above indicates that soils most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sands that lie close to the ground surface. According to the Association of Bay Area Governments (ABAG) and the U.S. Geological Survey, the project site is located in an area mapped as having a high to moderate likelihood of liquefaction in an earthquake and has been characterized as having a high to moderate liquefaction susceptibility. Therefore, because of the potential for liquefaction-induced ground surface settlement resulting from an earthquake, secondary seismic hazards such as liquefaction would have a ***potentially significant*** impact to structures on the project site.

Mitigation Measure(s)
Further analysis of this impact will be included in the Geology chapter of the Gilbert Property Draft EIR.

aiv,c. The site is not susceptible to landslides because the site is essentially flat. However, secondary seismic hazards such as lateral spreading, subsidence, or collapse are significant for the site due to the nature of the subsurface materials, which consist of loose sands with silt, and medium dense sands with silt. In addition, lateral spreading typically impacts areas within 100 to 200 feet of canal/creek banks when soils underneath the embankment liquefy during earthquake events, and the site is located adjacent to the Contra Costa Canal, Emerson Slough, Dutch Slough as well as near Marsh Creek. Therefore, lateral spreading would have ***potentially significant*** impacts to project structures.

Mitigation Measure(s)
Further analysis of this impact will be included in the Geology chapter of the Gilbert Property Draft EIR.

b. The project site is currently composed primarily of agricultural land. The proposed project would result in the construction of up to 510 residential units. As noted previously, the project site is essentially flat, and would thus undergo nominal cutting and filling. However, the importation and grading of fill and other construction activities, such as those related to excavation, could result in erosion due to wind and water effects on exposed soil. The erosion of exposed soil could result in the degradation of downstream water quality. Therefore, because construction activities could generate erosion impacts, the proposed project would result in a ***potentially significant*** impact.

Mitigation Measure(s)
Further analysis of this impact will be included in the Geology chapter of the Gilbert Property EIR.

d. The *Geotechnical Investigation* cited above states that areas on the project site, which are composed of near surface clayey materials, have a high to very high plasticity and a high to critical expansion potential. These soils are potentially compressible under new fill and buildings, and must be carefully considered in the design of grading, foundations, drainage, and landscaping. Therefore, the impacts associated with expansive soils would be ***potentially significant.***

Mitigation Measure(s)
Further analysis of this impact will be included in the Geology chapter of the Gilbert Property Draft EIR.

e. The project has been designed to connect to existing sewer systems. Therefore, ***no impact*** would occur related to soils incapable of adequately supporting the use of septic tanks.

VII. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	✖	☐	☐	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	✖	☐	☐	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	✖	☐	☐	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	✖	☐	☐	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	✖
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	✖
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	✖	☐	☐	☐
h. Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	✖	☐	☐	☐

Discussion

a-c. The proposed project includes up to 510 single-family houses, one detention basin and neighborhood parks. These land uses would not involve the routine use, transport, or disposal of hazardous materials within the residential area or school site. However, the project site could contain materials that may be considered hazardous. Therefore, because the project site could contain hazardous substances and/or materials and would be located within a one-mile radius of a school site, a ***potentially significant*** impact would occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Hazards chapter of the Gilbert Property Draft EIR.

d. Lowney Associates performed an Environmental Assessment of the Gilbert Property in September 2004. Aerial photographs show that the site has been used for agricultural purposes as early as 1957. In aerial photographs dated post-1957, an irregular area in the central portion of the site existed that appeared to be elevated in comparison to adjacent, cultivated areas.

Two gas production wells were drilled on-site in 1964 and were abandoned in 1978 and 1996. Drill cuttings and fluids generated during well installation can cause petroleum hydrocarbons, if suspect soil is encountered in the well areas during site development, the soil will require appropriate handling and disposal. The regulatory agencies will likely require installation of well head venting controls in structures are to be built on or near the abandoned wells.

The site may contain residual pesticides associated with agricultural development. Additionally, aerial photographs show that site operations may have included a cattle feed yard. Significant amounts of cattle waste may be encountered and the presence of methane may cause concern.

Additional potential environmental concerns include the existing and preexisting natural gas wells, nitrate impacts associated with current and historical dairy and cattle feed activities, and asbestos-containing materials within on-site structures. Because the project site potentially contains hazardous materials, a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Hazards chapter of the Gilbert Property Draft EIR.

e-f. The project site is not within an airport land use plan or within two miles of an airport. Therefore, ***no impact*** would occur.

g. Development of the project site could interfere with an adopted emergency response plan or emergency evacuation plan. Although construction vehicles would be located on-site and would therefore not adversely impede the flow of traffic along Cypress Road, Jersey Island Road, Sellers Avenue, and Knightsen Avenue, the additional traffic could potentially interfere with the evacuation or response routes used by emergency response teams. Therefore, a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Transportation and Circulation chapter of the Gilbert Property Draft EIR.

h. Wildland fire hazards threaten lives, property, and natural resources throughout the City. Although the urbanized areas of the City of Oakley are in areas of low wildfire hazard, wildfire is a serious hazard in undeveloped areas and on large lots with extensive areas of unirrigated vegetation because natural vegetation and dry-farmed grain areas are extremely flammable during the late summer and fall.

The City of Oakley is within the boundaries of critical Fire Weather Class 3, which correlates to 9½ or more days per year of moderate, high, and extreme fire hazard. Grassland fires are easily ignited, particularly in dry seasons. Because the project site is undeveloped agricultural land, a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Further analysis of this impact will be included in the Hazards chapter of the Gilbert Property Draft EIR.

VIII. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	✖	☐	☐	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	✖	☐	☐	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	✖	☐	☐	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	✖	☐	☐	☐
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	✖	☐	☐	☐
f. Otherwise substantially degrade water quality?	✖	☐	☐	☐
g. Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	✖	☐	☐	☐
h. Place within a 100-year floodplain structures which would impede or redirect flood flows?	✖	☐	☐	☐
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	✖	☐	☐	☐
j. Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	✖

Discussion

a,f. The proposed project involves the construction of up to 510 residential units, one detention basin, a park, and associated infrastructure. Short-term grading and related construction activities may cause an increase in erosion leading to degradation of downstream water quality.

Residential projects may also lead to the generation of urban pollutants. Long-term occupation of the proposed land uses would introduce non-point sources of pollution such as fertilizers, household chemicals, and automobile products. These pollutants may be picked up by stormwater runoff and enter surface water bodies in or downstream from the project site. Stormwater pollution control is regulated by the State Water Resources Control Board and Regional Water Quality Control Boards.

The project includes construction of one stormwater pond, which would be located in the southeast corner of the Gilbert property. The storm water management facilities for the Gilbert Property project would be designed to control peak storm water flows, improve the quality of the storm water runoff before it is discharged from the site, and protect the homes from flooding during large storm events. However, because the effectiveness of the proposed pond to treat stormwater runoff has not yet been determined, the project would have a ***potentially significant*** to water quality.

Mitigation Measure(s)
Further analysis of this impact will be included in the Hydrology and Water Quality chapter of the Gilbert Property Draft EIR.

b. The City of Oakley currently does not receive any groundwater from wells, although there are many private wells in the Plan Area (Oakley General Plan EIR, p. 3-119). The proposed project would create impervious surfaces through the development of up to 510 residential units and necessary infrastructure such as streets, which could result in adverse effects to groundwater resources in the Oakley Planning Area. Although the City of Oakley does not currently utilize groundwater, the proposed project could reduce groundwater recharge, which could affect nearby well users; therefore, a ***potentially significant*** impact would occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Public Services chapter of the Gilbert Property Draft EIR.

c-e. The project consists of the development of single-family homes, and recreational uses. The proposed project would thus result in the creation of impervious surfaces on a site that is primarily agricultural land. The additional impervious surfaces would be expected to increase the rate of stormwater runoff originating on the project site, which could exceed the capacity of the existing storm drain system.

As discussed above, the proposed infrastructure includes the construction of one storm water pond. The pond would be about 5 acres and and would be pumped into different existing outfalls in Emerson Slough. The pond has been sized to accommodate developed flows for the proposed project as well as the existing flows from properties to the south. As the properties to the south develop, additional ponds would need to be constructed

within those properties to detain storm flows. The outfalls have already been comprehensively studied and analyzed for CEQA purposes and permitted by the City of Oakley under the entitlements for the Cypress Grove subdivisions to the west (8678, 8679 and 8680), which were scheduled for construction in the summer of 2005. As a result, these outfalls are not considered part of this project.

Although the project has proposed a stormwater detention pond to hold stormwater runoff, the adequacy of the pond has yet to be determined; therefore, a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Hydrology and Water Quality chapter of the Gilbert Property Draft EIR.

g-i. According to the City of Oakley 2020 General Plan, the Federal Emergency Management Agency (FEMA) flood maps for the project area indicate that the site is located outside of the 100-year floodplain. The entire project site is protected by the levees that run along the Contra Costa Canal. The properties to the north of the Canal are presently mapped in Special Flood Hazard Area Zone A, indicating that they are subject to flooding during a 100-year event in the Delta.

According to the Stormwater Management Plan prepared for the Gilbert Ranch Property by Castle Companies, July 2005, the base flood elevation from Delta flooding is shown as 7.0 feet. Per FEMA and CCFCD regulations, areas lower than this elevation must be protected by levees with a minimum of 3.0 feet of freeboard above the base flood elevation, a level of protection that FEMA recognizes as presently provided by the Contra Costa Canal levees. However, CCWD is pursuing plans to underground all or part of the canal in the vicinity of the project and the District has indicated that the material in the levee may be needed as part of that project. Although a new levee system is proposed to be built along the north perimeter of the project to FEMA urban standard levee specifications, the proposed project would result in a ***potentially significant*** impact as relates to the FEMA 100-year floodplain.

Mitigation Measure(s)
Further analysis of this impact will be included in the Hydrology and Water Quality chapter of the Gilbert Property Draft EIR.

j. Tsunamis are defined as sea waves created by undersea fault movement. A tsunami poses little danger away from shorelines; however, when it reaches the shoreline, a high swell of water breaks and washes inland with great force. Waves may reach fifty feet in height on unprotected coasts. Historic records of the Bay Area used by one study indicate that nineteen tsunamis were recorded in San Francisco Bay during the period of 1868-1968. Maximum wave height recorded at the Golden Gate tide gauge (where wave heights peak) was 7.4 feet. The available data indicate a standard decrease of original wave height from the Golden Gate to about half original wave height on the shoreline near Richmond, and to nil at the head of the Carquinez Strait. Because Oakley is 26 miles inland from the Carquinez Strait, the project site is not exposed to flooding risks from tsunamis.

A seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir, whose destructive capacity is not as great as that of tsunamis. Seiches are known to have occurred during earthquakes, but none have been recorded in the Bay Area. In addition, the project is not located near a closed body of water. Therefore, the project site would not likely experience seiches in the future.

Because mudflows typically occur in mountainous or hilly terrain, and the project site and surrounding areas are relatively flat, danger would not be presented from the likelihood of mudflows.

The above analysis indicates that the project site would not be threatened by a tsunami, seiche or mudflow; therefore, ***no impact*** from such phenomena would occur.

IX. LAND USE AND PLANNING. *Would the project:*		Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a.	Physically divide an established community?	☐	☐	☐	✖
b.	Conflict with any applicable land use plans, policies, or regulations 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 on environmental effect?	✖	☐	☐	☐
c.	Conflict with any applicable habitat conservation plan or natural communities conservation plan?	☐	☐	☐	✖

Discussion

a. The proposed land plan for the Gilbert Property project site includes residential development, trails, parks, levees, a storm water detention pond, as well as the infrastructure improvements necessary to accommodate the new development. The single-family areas of the proposed project would be consistent with the City of Oakley General Plan designation with an average density of 4.5 du/ac.

The proposed change in use for the project site from agricultural land to primarily single-family homes is consistent with the type of buildout anticipated by the Oakley 2020 General Plan. The project would also be compatible with the pattern of development occurring or planned in the general area of the project site. Therefore, because no residential structures exist on the site, the proposed project would not physically divide an established community, and ***no impact*** would occur.

b. The proposed project must be consistent with the Oakley General Plan and the Contra Costa County Zoning Ordinance. As outlined above, the project is consistent with the Oakley General Plan; however, the project requires a change of zoning. Therefore, the current project site zoning is inconsistent with the proposed uses, and the resulting impact would be considered ***potentially significant.***

Mitigation Measure(s)
Further analysis of this impact will be included in the Land Use and Agricultural Resources chapter of the Gilbert Property Draft EIR.

c. The Draft East Contra Costa County habitat Conservation Plan (HCP)/Natural Communities Conservation Plan (NCCP) is currently under public review (until December 1, 2005). However, because the HCP/NCCP has not been formally adopted, the proposal project would not conflict with the Plans, and ***no impact*** would occur.

X. MINERAL RESOURCES. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	✖	☐	☐	☐
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	✖	☐	☐	☐
c) Result in a substantial increase in energy consumption to the extent that energy generation capacity is exceeded, based on currently available projections, or unacceptable demands are placed on energy supply and distribution systems?	☐	☐	✖	☐

Discussion

a,b. The City of Oakley 2020 General Plan identifies a number of natural gas wells in the eastern portion of the Cypress Corridor Planning Area in which the Gilbert Property project site is located. The presence of these natural gas wells on the proposed project site could have a ***potentially significant*** impact on the proposed development of the Gilbert Property area.

Mitigation Measure(s)
Further analysis of this impact will be included in the Mineral Resources chapter of the Gilbert Property Draft EIR.

c. The project site is currently vacant; therefore, operation of the proposed project would result in an increase in energy consumption in the Oakley area. The project would comply with the Title 24, Part 6 building requirements of the California Code of Regulations, which addresses energy efficiency standards for residential and non-residential development. The California Energy Commission and Building Standards Commission recently adopted new standards which went into effect October 1, 2005, and with which the project would be required to comply. According to the California Energy Commission's website (http://www.energy.ca.gov/ title24/2005standards/index.html), the standards were adopted for the following reasons:

1. To respond to California's energy crisis to reduce energy bills, increase energy delivery system reliability, and contribute to an improved economic condition for the state;
2. To respond to the AB 970 (Statutes of 2000) urgency legislation to adopt and implement updated and cost-effective building energy efficiency standards;
3. To respond to the SB 5X (Statutes of 2001) urgency legislation to adopt energy efficiency building standards for outdoor lighting; and
4. To emphasize energy efficiency measures that save energy at peak periods and seasons, improve the quality of installation of energy efficiency measures, incorporate recent publicly funded building science research, and collaborate with California utilities to incorporate results of appropriate market incentives programs for specific technologies.

It should also be noted that the project site has been identified for development in the General Plan. As a result, the proposed project would have a ***less-than-significant*** impact to energy resources.

XI. NOISE. *Would the project result in:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	✖	☐	☐	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	✖	☐	☐	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	✖	☐	☐	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	✖	☐	☐	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✖
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✖

Discussion

a-c. The proposed project involves the construction of up to 510 residential units, one detention basin, a park, and associated infrastructure. The residential area is considered a sensitive land use and may be adversely impacted by the noise sources surrounding the project site. The principal existing traffic noise sources in the project vicinity include traffic along major roadways surrounding the project site.

The noise levels that the project would generate also need to be considered in order to provide a comprehensive noise analysis. Of particular importance are the sensitive receptors (residential and school uses) surrounding the project site to the east, south, and west. The introduction the proposed project would result in increased vehicle trips on project area roadways. The increased noise levels associated with the increased vehicle trips could result in exterior and/or interior residential noise standards being exceeded. Therefore, the proposed project would have a ***potentially significant*** impact in regards to exposing people to unacceptable noise levels.

Mitigation Measure(s)
Further analysis of this impact will be included in the Noise chapter of the Gilbert Property Draft EIR.

d. The Oakley General Plan EIR indicates that temporary increases in noise levels would occur during the construction of projects pursuant to the implementation of the General Plan. The General Plan states that construction machinery, such as earthmoving equipment, can generate noise levels up to 90 dBA at 50 feet from the machinery. The subsequent phases of construction generally vary from 79 to 89 dBA at 50 feet from the source. The proposed project would require excavation and grading activities that could generate noise levels in the range of 85 to 90 dBA at a distance of 50 feet, and the Oakley General Plan indicates that an outdoor noise level of 65 dBA is acceptable for residential land uses; therefore, the temporary increase in noise levels during construction would be considered a ***potentially significant*** impact.

Mitigation Measure(s)
Further analysis of this impact will be included in the Noise chapter of the Gilbert Property Draft EIR.

e,f. The Oakley 2020 General Plan notes that the nearest commercial aviation facilities are Oakland International Airport and Sacramento Metropolitan Airport. Byron Airport, a general aviation airport, is located to the south of Oakley and operates as a charter and private aviation facility. However, the project site is not located near an existing airport and is not within an area covered by an existing airport land use plan. Therefore, development of the site would result in ***no impact*** regarding airport noise generation.

XII. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	✖	☐	☐	☐
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖

Discussion

a. The project site is located within the Oakley Planning Area. The proposed project includes the development of approximately 510 single-family units on 120 acres, which would result in a growth in the population of the Oakley area. Because the project would increase the local population, a ***potentially significant*** impact would result.

Mitigation Measure(s)
Further analysis of this impact will be included in the Statutorily Required Sections chapter of the Gilbert Property Draft EIR.

b,c. The construction of 510 residential units would not displace substantial numbers of existing housing or require the construction of replacement housing elsewhere. Therefore, the proposed project would have a ***no impact*** on housing.

XIII. PUBLIC SERVICES. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	✖	☐	☐	☐
b. Police protection?	✖	☐	☐	☐
c. Schools?	✖	☐	☐	☐
d. Parks?	✖	☐	☐	☐
e. Other Public Facilities?	✖	☐	☐	☐

Discussion

a,b. The proposed project is located within the jurisdiction of and is currently provided services by the Oakley Police Department and the East County Fire Protection District. The development of the project site would not expand their district boundaries. However, implementation of the proposed project would add to the overall demand for police and fire protection services; therefore, this increase in service requirements for the proposed project is considered a ***potentially significant*** impact.

Mitigation Measure(s)
Further analysis of this impact will be included in the Public Services chapter of the Gilbert Property Draft EIR.

c. The City of Oakley is served by Oakley Union School District, Liberty Union School District, and the Antioch Unified School District. The four elementary schools in the Oakley Union Elementary School District are over capacity and the two middle schools are currently serving over 90 percent of their capacity (Oakley 2020 General Plan EIR, p. 3-93). The proposed residential community would potentially intensify crowding of the existing school; therefore, this impact would be considered ***potentially significant***.

Mitigation Measure(s)
Further analysis of this impact will be included in the Public Services chapter of the Gilbert Property Draft EIR.

d. The City of Oakley General Plan encourages an urban development form that is based on open space throughout and around established communities. Development of the project site would result in new residences and consequently would increase the demand for neighborhood, community, and regional parks and other recreation facilities. Because the proposed project has the potential to create an excess demand for park facilities, a ***potentially significant*** impact would occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Public Services chapter of the Gilbert Property Draft EIR.

XIV. RECREATION. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	✖	☐	☐	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	✖	☐	☐	☐

Discussion

a,b. The City of Oakley General Plan encourages an urban development form that is based on open space throughout and around established communities. Development of the project site would result in new residences and consequently would increase the demand for neighborhood, community, and regional parks and other recreation facilities. However, the project would include a neighborhood park, which is anticipated to meet the demands created by the project.

The park system within the Gilbert property would consist of a 3.6-acre a park surrounding the 5-acre storm water pond located at the southeast corner of the community and connected to the Dutch Slough trail.

In addition, the proposed project would contribute to the construction of trails along the north and south sides of Cypress Road, and east side of Sellers Avenue, the north edge of the property adjacent to the CCWD/USBR canal, and on certain local streets in the project site. This trail system would connect to future planned developments at the neighboring Emerson and Burroughs sites and would provide pedestrian circulation to and from the Delta Vista Middle School, the Iron House Elementary School, the neighborhood parks, ponds, and the proposed 55-acre City Park north of the CCWD/USBR canal. A trail would be located along the northern boundary of the development just south of the CCWD/USBR canal. This trail would connect to the trail being constructed by the adjacent Cypress Grove development, which provides access to the existing Marsh Creek Trail and links to an existing regional trail system. The trail would include a pedestrian bridge spanning Dutch Slough between the Gilbert and Burroughs properties. The trail would be constructed to connect to Cypress Road at the eastern boundary of the project site.

Furthermore, the Park Impact Fee includes community parks, neighborhood parks and open space components. The developers would construct the neighborhood parks and open space trails to meet two-thirds of the Public Facilities requirement. To complete the obligation of the project to dedicate and improve parkland, the project would pay the remaining park in-lieu fee to facilitate the provision of the community park facilities to be located north of the CCWD/USBR canal.

Although the proposed project includes the construction of parks and recreational facilities, these facilities may be inadequate and further analysis is needed. Therefore, the impacts to existing park facilities and services, and the adequacy of the proposed park facilities and services are ***potentially significant***.

Mitigation Measure(s)

Further analysis of this impact will be included in the Public Services chapter of the Gilbert Property Draft EIR.

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

Discussion

a,b. The proposed project involves the construction of up to 510 single-family homes, one detention basins, several parks, and associated infrastructure. Roadways that surround the project site consist of Cypress Road, Jersey Island Road, Sellers Avenue, and Knightsen Avenue. The increase in daily vehicle trips generated by the project along these roadways would be expected to adversely affect existing Levels of Service (LOS) at nearby intersections. The increase in traffic generated by the project could therefore have a ***potentially significant*** impact.

Mitigation Measure(s)
Further analysis of this impact will be included in the Transportation and Circulation chapter of the Gilbert Property Draft EIR.

c. The proposed project would not require any changes to existing regional air traffic activity, and the project site is not located near an airport. Therefore, ***no impact*** would occur.

d,e. The design of the project could result in increased hazards or inadequate emergency access. Therefore, a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Transportation and Circulation chapter of the Gilbert Property Draft EIR.

f. The proposed project involves the construction of up to 510 residential units, one detention basin, several parks, and associated infrastructure. Development of the residential lots must be consistent with the zoning requirements. Because adequate parking may not be provided, a ***potentially significant*** impact would occur.

Mitigation Measure(s)
Further analysis of this impact will be included in the Transportation and Circulation chapter of the Gilbert Property Draft EIR.

g. Tri-Delta Transit provides transit service to Oakley. According to Figure 3.4-3 of the Oakley General Plan EIR, transit routes do not currently exist within the project site. In addition, the Oakley General Plan EIR (p. 3-29) states that limited transit service exists for residents in the City of Oakley. Currently, only four fixed route services exist within the City.

Oakley currently only has limited bicycle facilities within the City. Bicycle lanes are provided on Cypress Road between Rose Avenue and Marsh Creek. The Contra Costa Countywide Transportation Plan designates Oakley Road/Empire Avenue/Cypress Road as a Regional Bicycle Route, providing a connection to the Marsh Creek Regional Trail. The Marsh Creek Regional Trail, along with the Delta de Anza Regional Trail (between Neroly Road and Cypress Road) are multi-use, paved trails for hikers, horses, and bicycles. As discussed in the Recreation section of this report, the proposed project would construct trails along the north and south sides of Cypress Road, the west and east side of Sellers Avenue, the north edge of the property adjacent to the CCWD/USBR canal, and on certain local streets in the project site. This trail system would provide pedestrian circulation to and from the Delta Vista Middle School, the Iron House Elementary School, the neighborhood parks, ponds, and the proposed 55-acre City park north of the CCWD/USBR canal.

A trail would be located along the northern boundary of the development just south of the CCWD/USBR canal. This trail would connect to the trail being constructed by the adjacent Cypress Grove development, which provides access to the existing Marsh Creek Trail and links to an existing regional trail system. The trail would include a pedestrian bridge spanning Dutch Slough between the Gilbert and Burroughs properties. The trail would be constructed to connect to Cypress Road at the eastern boundary of this project.

Although the Gilbert Property project site would provide adequate bicycle/pedestrian trails throughout, and adjacent to the project site, the limited bus service within the City of Oakley could be adversely impacted by the project. Therefore, a ***potentially significant*** impact would occur related to the adequate provision of transit services.

Mitigation Measure(s)
Further analysis of this impact will be included in the Transportation and Circulation chapter of the Gilbert Property Draft EIR.

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

Discussion

a-g. The proposed project involves the construction of up to 510 residential units, one detention basin, a park, and associated infrastructure. The proposed project would require the installation and necessary extension of utility lines and infrastructure for water, wastewater, storm drainage, electricity, natural gas, telephone, and cable communications. Furthermore, the additional residential units would require solid waste removal service. The need for additional services and infrastructure would be a ***potentially significant*** impact to the existing environment of the project site.

Mitigation Measure(s)

Further analysis of this impact will be included in the Public Services chapter of the Gilbert Property Draft EIR.

XII. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	✖	☐	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	✖	☐	☐	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	✖	☐	☐	☐

Discussion

a,b. The proposed project would change the project site from agricultural land to residential and commercial developments. The changes may interfere with habitats on the project site and could potentially harm endangered plant or animal species. Furthermore, as residential are placed on the project site, any archeological resources that are beneath the project site could be disturbed. Such impacts may also be considered to achieve short-term, to the disadvantage of long-term environmental goals. Therefore, the proposed project would cause a ***potentially significant*** impact.

Mitigation Measure(s)
Further analysis of this impact will be included in the appropriate chapters of the Gilbert Property Draft EIR.

c,d. The proposed project would add traffic, housing, and a commercial center to the project site and would remove Prime Farmland from agricultural uses. The loss of prime agricultural land is considered a “cumulatively considerable impact” and a “substantial adverse impact,” both direct and indirect. Other cumulative impacts may be identified in the categories of population growth, use of resources, demand for services, and physical changes to the natural environment. All of these impacts may result in adverse effects on human beings. Therefore, these impacts would be considered ***potentially significant***.

Mitigation Measure(s)
Further analysis of this impact will be included in the appropriate chapters of the Gilbert Property EIR.