



DELTA SHORES

DRAFT ENVIRONMENTAL IMPACT REPORT

September 2008

Prepared for:
City of Sacramento



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Delta Shores Draft Environmental Impact Report

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1.0 INTRODUCTION

1.0 INTRODUCTION

PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

This Draft Environmental Impact Report (EIR) has been prepared in conformance with the California Environmental Quality Act (CEQA) of 1970 (as amended) to evaluate the environmental impacts associated with the development and operation of the Delta Shores project (proposed project).

CEQA requires that a local agency prepare an EIR on any project it proposes to approve that may have a significant effect on the environment. The purpose of an EIR is not to recommend approval or denial of a project, but to provide decision-makers, public agencies, and the general public with an objective and informational document that fully discloses the potential environmental effects of a proposed project. The term "proposed project," as used in this EIR, refers to the Delta Shores project (P06-197). The EIR process is specifically designed to objectively evaluate and disclose potentially significant direct, indirect, and cumulative impacts of a proposed project; to identify alternatives that reduce or eliminate a project's significant effects; and to identify feasible measures that mitigate significant effects of a project. In addition, CEQA requires that an EIR identify those adverse impacts that remain significant after mitigation.

EIR PROCESS

In accordance with the CEQA Guidelines, a Notice of Preparation (NOP) was released on April 12, 2007 for agency and public review. The City of Sacramento is the lead agency under CEQA for the preparation of this EIR. The NOP comment period closed on May 14, 2007. The purpose of the NOP was to provide notification that an EIR for the project was being prepared and to solicit guidance on the scope and content of the document. A summary of the comments received on the NOP is included in Chapter 3. A public scoping meeting was held on April 30, 2007. Responsible agencies and members of the public were invited to attend and provide input on the scope of the EIR.

This Draft EIR is being circulated for public review and comment for a period of 45 days. During this period, the general public, organizations, and agencies can submit comments to the lead agency on the Draft EIR's accuracy and completeness. The 45-day public review period for the Draft EIR will be from September 9, 2008 through October 23, 2008 at 5:00 PM.

Upon completion of the public review period, a Final EIR will be prepared that will include written responses to comments received on the Draft EIR during the public review period. The Final EIR will also include the Mitigation Monitoring Program (MMP). The Final EIR will address any revisions to the Draft EIR made in response to public comments. The Draft EIR and Final EIR together will comprise the entirety of the "EIR" for the proposed project.

Before the City of Sacramento can approve the project, it must first certify that the EIR has been completed in compliance with CEQA, that the City Council (decision-making body) has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the

City. The City Council also would be required to adopt Findings of Fact, and for those impacts determined to be significant and unavoidable, adopt a Statement of Overriding Considerations.

LEAD, RESPONSIBLE AND TRUSTEE AGENCIES

Lead Agency

The City of Sacramento is the lead agency for preparation of the Delta Shores environmental analysis. In conformance with sections 15050 and 15367 of the state CEQA Guidelines, the City of Sacramento has been designated the “lead agency” which is defined as the “public agency which has the principal responsibility for carrying out or disapproving a project.” The lead agency is also responsible for scoping the analysis, preparing the EIR, and responding to comments received on the Draft EIR. Prior to making a decision to approve a project, the lead agency is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the lead agency.

Responsible Agencies

Responsible agencies are state and local public agencies other than the lead agency that have some authority to carry out or approve a project or that are required to approve a portion of the project for which a lead agency is preparing or has prepared an EIR or Initial Study/Negative Declaration. The following agencies are identified as those that would potentially act as responsible agencies for the proposed project:

- California Air Resources Board
- State Reclamation Board
- Sacramento Metropolitan Air Quality Management District
- State Water Resources Control Board
- Central Valley Regional Water Quality Control Board

Trustee Agencies

Trustee agencies under CEQA are designated public agencies with legal jurisdiction over natural resources that are held in trust for the people of California and that would be affected by a project, whether or not the agencies have authority to approve or implement the project. The California Department of Fish and Game (CDFG) has been identified as a trustee agency with potential jurisdiction over the proposed project. The U.S. Army Corps of Engineers (Corps) and U.S. Fish and Wildlife Service (USFWS) would not serve as either responsible or trustee agencies under CEQA for the proposed project. These federal agencies do, however, have permitting authority over the project site.

REQUIRED PERMITS AND APPROVALS

Project approval requires the City of Sacramento to approve the proposed project and to issue required City permits or affirm compliance with other agency requirements. Below are summarized the discretionary actions sought by the project applicant for the Delta Shores project that the City of Sacramento will consider during its review. A detailed description of required permits and approvals is included in Chapter 2, Project Description.

- Preparation and certification of an EIR pursuant to the California Environmental Quality Act and associated Guidelines (City of Sacramento);
- Development Agreement (City of Sacramento);
- General Plan Amendment (City of Sacramento);
- Airport/Meadowview Community Plan Amendment (City of Sacramento);
- Rezone (City of Sacramento);
- Delta Shores PUD Guidelines and Schematic Plan Amendments (City of Sacramento);
- Master Tentative Parcel Map (City of Sacramento) ;
- Tentative Subdivision Maps (City of Sacramento);
- Inclusionary Housing Plan (City of Sacramento);
- Section 404 Wetlands Permit (U.S. Army Corps of Engineers);
- Waste Discharge Requirement Permit and Section 401 Certification or Waiver (Regional Water Quality Control Board);
- Bikeways Master Plan Amendment (City of Sacramento).

PUBLIC REVIEW OF DRAFT EIR AND LEAD AGENCY CONTACT

Upon completion of the Draft EIR, the City will provide public notice of the document's availability for public review and invite comment from the general public, agencies, organizations, and other interested parties. Copies of the Draft EIR will be available at the following locations:

City of Sacramento Development Services Department
300 Richards Boulevard, 3rd Floor
Sacramento, CA 95811
(Open to the public from 8:00 am to 4:00 pm)

Sacramento Public Library
828 I Street
Sacramento, CA 95814

The public review and comment period is 45 days. Comments may be submitted in writing at the public hearing. Notice of the time and location of the hearing will be published prior to the hearing.

All comments or questions regarding the Draft EIR should be addressed to:

Shelly Amrhein
City of Sacramento, Development Services Department
300 Richards Boulevard, 3rd Floor
Sacramento, CA 95811
(916) 808-7601

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to all written comments received during the public review period. The City will review and consider the Final EIR prior to their decision to approve, revise, or reject the proposed project.

SCOPE OF THIS EIR

This EIR is a "Project EIR," pursuant to section 15161 of the CEQA Guidelines. A Project EIR examines the environmental impacts of a specific project. This type of EIR focuses on the changes in the environment that would result from implementation of the project, including construction and operation.

The City of Sacramento, as lead agency, identified in the Initial Study prepared for this EIR and included as a part of the Notice of Preparation potentially significant impacts that could result from implementation of the proposed project. Based on the NOP/Initial Study (see Appendix A), the City determined that this EIR address the following technical issue areas:

- Aesthetics and Visual Resources
- Agricultural Resources
- Air Quality
- Biological Resources
- Hydrology and Water Quality
- Noise
- Public Services
- Public Utilities
- Transportation and Circulation
- Global Climate Change

The specific topics evaluated are described in each of the technical sections presented in Chapter 5. Land Use Consistency and Compatibility is not considered a technical issue and is addressed in Chapter 4.

Issues not addressed further in this EIR that were identified as being less than significant or less than significant with mitigation in the Initial Study (see Appendix A for a more detailed discussion) include:

- Displace existing housing – no housing exists on the project site.
- Change currents, or the course or direction of water movement – The proposed project would not affect water movement or flow because there are no structures proposed in the Sacramento River.
- Result in or expose people to potential impacts involving seismic or soil hazards, or adversely affect a unique geological resource. – The proposed project is not located in an area susceptible to such hazards.
- Change local climate – The proposed structures are not tall enough, or of a mass, to affect significantly air movement and/or temperature changes through shading by buildings and there are no proposed land uses that emit large quantities of humidity or heated/cooled air.
- Result in rail, waterborne or air traffic impacts – The proposed project is not located near enough to a railroad or an airport to affect traffic patterns and would not include any development that would affect water travel.
- Expose people to additional risks associated with the release of hazardous materials into the environment or create a potential health hazard – The proposed project does not include the development of any uses that would be considered particularly hazardous. Adherence to hazardous materials regulations and proper use of hazardous materials within the project site would reduce the risk of upset. Implementation of Mitigation Measures 9-1 and 9-2 ensure the preparation of a Phase II Environmental Site Assessment and create a plan to address any currently undiscovered hazardous materials, in the event that they are uncovered during project development. This would mitigate any impact to a less-than-significant level.
- Interfere with emergency plans or response routes – The proposed project is not located in an area that contains emergency response routes.
- Increase fire hazards in areas with flammable brush, grass, or trees – The project site is located in an area within the City of Sacramento that is not intermixed with wildlands.
- Result in the need for additional road maintenance or other government services – The proposed project is designed to comply with all City of Sacramento road standards and will contribute fair share fees toward road maintenance activities and other government services.
- Affect communication systems – The proposed project does not include any structures or uses that would interfere with communication systems.
- Disturb paleontological, archaeological, or historical resources within the potential impact area – While the project site has previously been disturbed, construction activities, such as construction of the sub-grade components of the project, may uncover paleontological or

archaeological resources. Implementation of Mitigation Measures 14-1, 14-2, 14-3, and 14-4 would reduce this impact to a less-than-significant level.

- Restrict existing religious or sacred uses within the potential impact area – No sacred uses or churches exist on the project site and no religious practices would be restricted by construction of the proposed project.

HOW TO USE THIS REPORT

This report includes 9 principal parts: Project Description, Summary, Land Use Consistency and Compatibility, Environmental Analysis (Setting, Impacts, and Mitigation Measures), Alternatives, CEQA Considerations, References, Report Preparation, and Appendices.

The **Project Description** (Chapter 2) describes the location of the project, existing conditions on the project site, and the nature and location of specific elements of the proposed project, as well as requested project entitlements and/or approvals.

The **Summary** (Chapter 3) presents an overview of the results and conclusions of the environmental evaluation. This section identifies impacts of the proposed project and available mitigation measures.

Land Use Consistency and Compatibility (Chapter 4) addresses the land use and planning implications of the project and discusses consistency and compatibility with adopted land use policies.

The **Environmental Analysis** (Chapter 5) includes a topic-by-topic analysis of impacts that would or could result from implementation of the proposed project or alternatives. Topics discussed are those identified in the Initial Study Checklist as requiring further analysis (see Appendix A). The analysis is organized in nine topical sections. Each section is organized into two major subsections: Environmental Setting and Regulatory Setting (existing conditions), and Impacts and Mitigation Measures, including cumulative impacts and mitigation measures.

Alternatives (Chapter 6) includes a description of the project alternatives. An EIR is required by CEQA to provide adequate information for decision makers to make a reasonable choice between alternatives based on the environmental aspects of the proposed project and alternatives. The impacts of the alternatives are qualitatively compared to those of the proposed project. This chapter also identifies the environmentally superior alternative.

CEQA Considerations (Chapter 7) discusses issues required by CEQA: unavoidable adverse impacts, irreversible environmental changes, growth inducement, and a summary of cumulative impacts.

The **References** (Chapter 8) used throughout the Draft EIR are included in this chapter.

Report Preparation (Chapter 9) includes a list of preparers of the Draft EIR.

The **Appendices** contain a number of reference items providing support and documentation of the analyses performed for this report.

2.0 PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

INTRODUCTION

The proposed Delta Shores project (proposed project) is located on approximately 782-acres in south Sacramento adjacent to the southern boundary of the city limits. The project includes a mix of residential uses with two mixed-use commercial centers, schools, parks, and limited office uses.

PROJECT BACKGROUND

In 1983, the City approved the Delta Shores Planned Unit Development (PUD) which was intended to be comprised of predominately employment-generating uses (i.e., high technology industrial, office, commercial, and retail) with limited residential development.

Although identified for urban uses as part of the 1983 PUD, the project site has remained undeveloped and has been used primarily for agricultural purposes. Tomatoes, sugar beets, wheat, corn, safflower, and alfalfa were all crops grown on the project site. Underground storm drainage and sewer infrastructure is located in the eastern portion of the site including sewer pipelines ranging in size from 8 to 96-inches and drainage pipes from 12 to 78-inches. Although the majority of this infrastructure was never fully utilized for development consistent with the previously granted PUD, a portion of the improvements along the eastern edge of the site currently serve existing development to the north. In addition to overhead utility lines that are adjacent to the northern boundary of the project site, the site is also bisected by twin 66-inch sewer force mains associated with the Sacramento Regional County Sanitation District (SRCSD) Lower Northwest Interceptor Project.

Project Location

The proposed project site is located in the southern portion of the city of Sacramento (see Figure 2-1, Regional Location) on 782 acres. The project site is located adjacent to a developed area southeast of the Interstate 5 (I-5) Meadowview Road/Pocket Road freeway exit. I-5 runs in a north/south direction and bisects the project site into approximately 120 acres west of I-5 (western portion) and 662 acres east of I-5 (eastern portion). The western portion of the project site is bounded by Freeport Boulevard to the west and the Bartley Cavanaugh Golf Course to the south. The eastern portion of the project site is bounded by Morrison Creek and the SRCSD bufferlands to the south, existing residential development to the north, and undeveloped land and the federally-owned (U.S. Department of Labor) Sacramento Job Corps facility to the east, as shown in Figure 2-2.

Project Characteristics

The project site is almost entirely vacant and undeveloped, supporting agricultural cultivation and open space. The elevation of the site ranges from approximately 3 feet on the eastern portion of the site to approximately 15 feet on the western portion of the site. Morrison Creek runs south of the eastern portion of the site and Pacific Gas and Electric Company (PG&E) power lines traverse the northern portion. Existing wastewater infrastructure on the project site includes a 96-inch sewer

pipeline located in the eastern portion of the site, which runs parallel along the east side of I-5. In addition, there are twin 66-inch force mains that bisect the project site in the general alignment of the proposed Cosumnes River Boulevard (a separate approved project). Based on information from the project's wetland delineation report, and verified by the U.S. Army Corps of Engineers, there are approximately 27.5 acres of waters of the U.S., including wetlands, present within the surveyed project area.¹ These waters and wetlands lie adjacent to Morrison Creek and near the Sacramento River.

The area north of the project site and east of I-5, known as the Meadowview neighborhood, has been developed with single family residential units over the last 30 years. Bordering the project site on the northeast is the federally-owned (U.S. Department of Labor) Sacramento Job Corps facility, which supports a heavy equipment training area. To the south of the Job Corps facility, east of the project site, is vacant privately-owned land zoned for residential uses. The western portion of the project site is adjacent to and north of the City-owned Bartley Cavanaugh Golf Course. South and west of the project site is the Town of Freeport, which is within an unincorporated area of Sacramento County. On the western portion of the site there are two uninhabited structures adjacent to Freeport Boulevard that would be removed to accommodate the project. The Sacramento River flows west of Freeport Boulevard. There is also a recently developed three-story office complex adjacent to the northern portion of this site.

Bordering the eastern and southern portions of the project site are approximately 2,500 acres of open space bufferlands owned by the SRCSD. The District's regional wastewater treatment plant is located south of the bufferlands. A recently improved levee along Morrison Creek borders the southern project site boundary in conjunction with the city limits boundary to the east of I-5. The bufferlands have been designed and are managed to support habitat for a variety of plant and animal species. Morrison Creek runs south of the project site and south of the levee, flowing to the west and the south.

Current Land Use Designations and Zoning Classifications

The majority of the project site is currently designated in the City's 1988 General Plan for Industrial-Employee Intensive uses with smaller areas designated for Community/Neighborhood Commercial and Office (CNO), Low Density Residential (LDR), Medium Density Residential (MDR), Regional Commercial and Office (RCO), Parks-Recreation-Open Space (P/OS), and Public/Quasi-Public-Miscellaneous (P/QP) uses. Current zoning classifications for the project site include Agricultural (A), Shopping Center-PUD (SC-PUD), Single Family Alternative Residential-PUD (R-1A-PUD), and Manufacturing, Research & Development-PUD (MRD-PUD). The project site is also located within the existing Airport/Meadowview Community Plan boundaries. The Community Plan designates the project site as high tech Industrial, Commercial, Office, Residential, and General Public Facilities. As such, the City of Sacramento General Plan and Airport/Meadowview Community Plan anticipated Industrial-Employee Intensive and Low Density Residential uses for this area. The City is currently

1 Will Ness, Chief, Sacramento Office, U.S. Department of the Army, U.S. Army Engineer District, Sacramento, Corps of Engineers, wetland verification letter to Joseph Karnes, SunCal Companies, November 7, 2006.

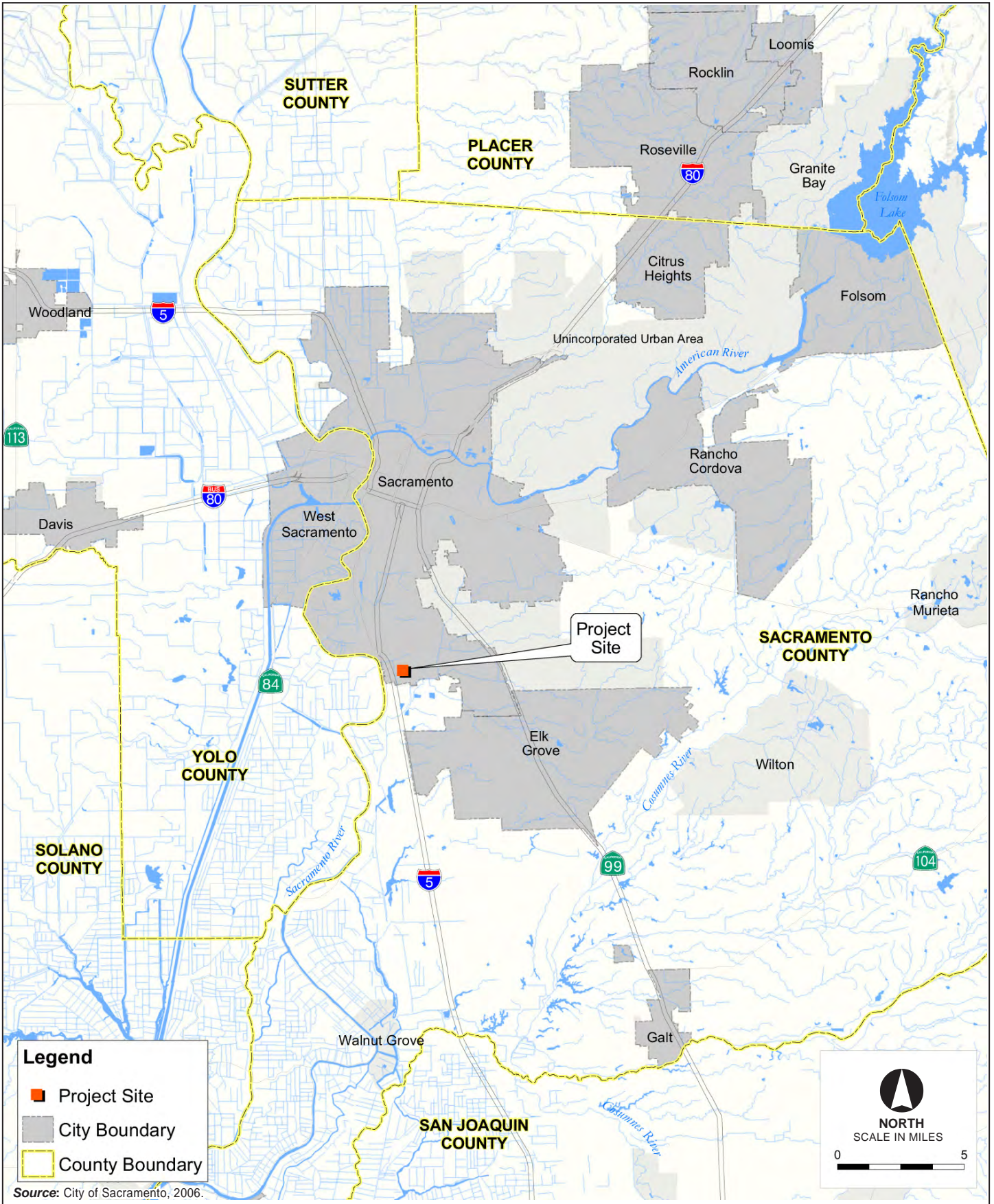


FIGURE 2-1
Regional Location

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Delta Shores



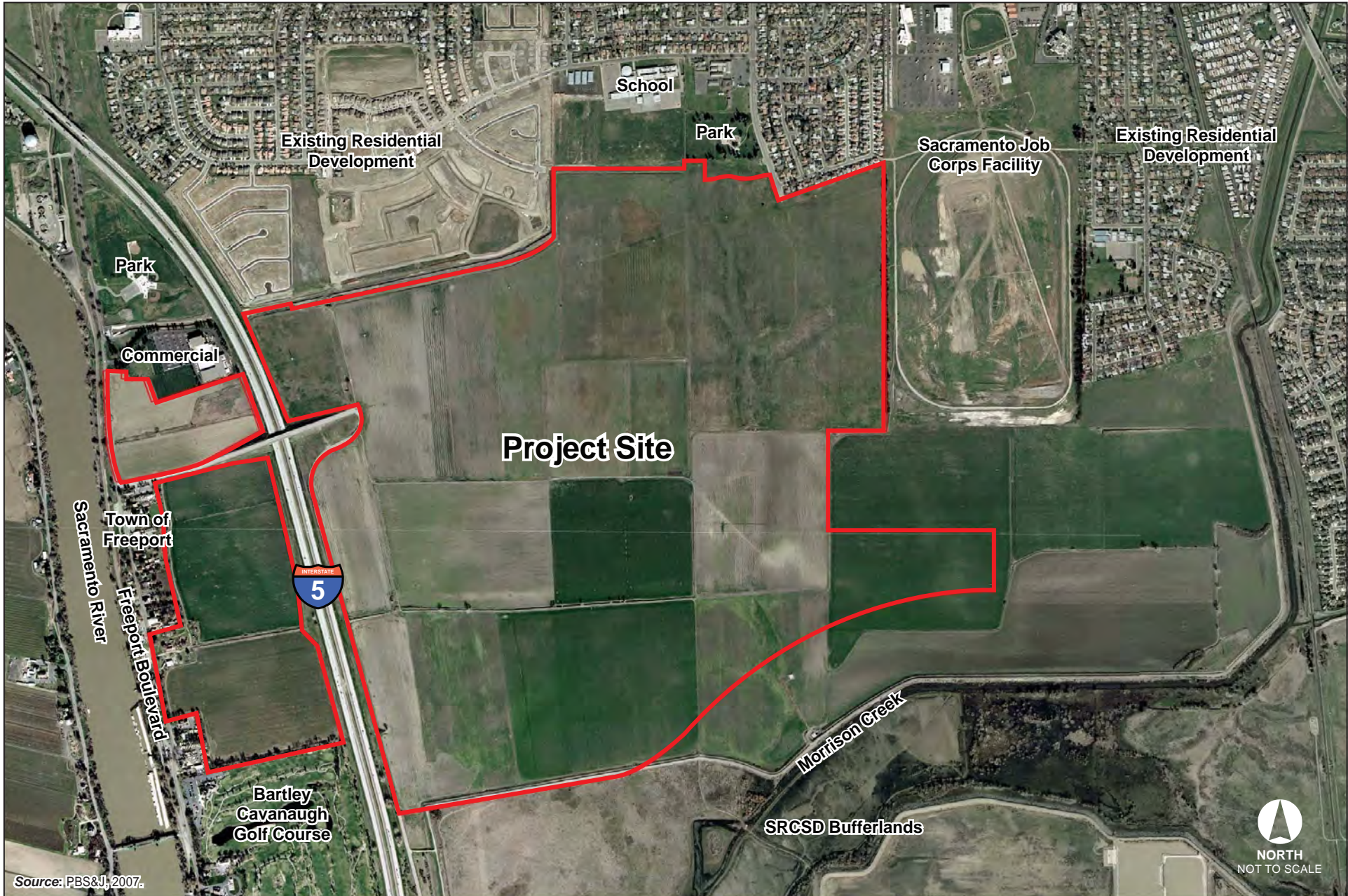


FIGURE 2-2
Surrounding Land Uses

D51311.00



in the process of updating both the City's General Plan and Community Plan. The City anticipates adopting the new 2030 General Plan and South Area Community Plan by the end of 2008/early 2009. The Airport/Meadowview Community Plan is being updated as the South Area Community Plan and will be adopted as part of the new General Plan. The new General Plan designates the project site Planned Development and specific land use designations and zoning districts will be applied to this area once the City has approved the project.

The technical sections of this EIR evaluate consistency with policies from the adopted 1988 General Plan as well as draft policies contained in the 2030 General Plan. The City has not yet adopted the 2030 General Plan, as such, some of the policies may be further refined during the approval process. However, for the purposes of this project the policies contained in the public review draft of the 2030 General Plan are included to allow the public the opportunity to review the project in light of the new General Plan.

Project Description

The proposed project includes the development of a 782-acre master planned community. The Delta Shores project is envisioned as a compact residential community of approximately 5,092 residences with two mixed-use retail centers – a Regional Village Center (Village Center) and a neighborhood-serving residential mixed-use retail area (Residential/Mixed-Use area), as shown on Figure 2-3, Land Use Plan.

The proposed project also includes open space, recreation, and pedestrian and bicycle friendly aspects. The project applicant, M&H (Merlone Geier Partners, LLC) would develop the commercial areas including the Village Center and Residential/Mixed-Use area. The Village Center is anticipated to include up to approximately 1.3 million square feet of retail and commercial uses while the Residential/Mixed-Use area would include a maximum of approximately 161,600 square feet of retail and incorporated office uses.²

The project proposes to subdivide approximately 315 acres into residential lots and approximately 118 acres into parks, trails, open space, and wetland preserve. A total of approximately 147 acres would be designated for commercial development (including the 19.9 acres of mixed-use) with the remaining area set aside for schools, utilities, a private community center, and roadways, including development of internal residential collector streets. Table 2-1 provides a breakdown of land uses and acreage for the proposed project. A breakdown of the residential components of the project is included in Table 2-2. In addition, Table 2-3 includes applicable land uses if the project were considered for approval after the new Sacramento 2030 General Plan is adopted. If the 2030 General Plan is adopted prior to the project it is anticipated that the land uses identified in the table would be applicable to the project.

2 The project is proposing 1.3 msf of regional retail uses. The traffic analysis assumed 1.23 msf. The 70,000 sf difference was determined to not result in any changes to the traffic analysis. See memo prepared by Fehr and Peers in Appendix J.

TABLE 2-1		
DELTA SHORES – LAND USE		
Land Use	Acres	Percent of Total Acreage
Residential		
Low Density Residential (4-7 du/ac)	136.9	17.5%
Medium Density (8-14 du/ac)	178.0	22.8%
High Density (15-27 du/ac)	64.4	8.2%
Subtotal	379.3	
Commercial		
Village/Regional Center	127.4	16.3%
Residential (23-29 du/ac) Mixed-Use	19.9	2.5%
Subtotal	147.3	
Parks/Open Space/Schools		
Community Park	26.64	3.4%
Neighborhood Parks (7 neighborhood Parks)	33.32	4.3%
Mini Parks ¹ (2 mini parks)	1.86	.24%
Detention	26.85	3.4%
Open Space	24.47	3.13%
Trails	3.54	0.45%
Wetland Restoration	27.82	3.6%
Schools (2 Elementary Schools)	19.90	2.5%
Community Center (Private)	2.60	0.3%
Subtotal	167	
Infrastructure/Quasi Public		
Backbone Circulation/roadways	84.44	10.8%
Utility - Water	1.55	0.2%
Utility – Electric Substation	0.52	0.07%
Fire Safety	2.0	0.3%
Subtotal	88.47	
Total	782.1	
Notes:		
1. The City does not have an official "mini park" designation. Therefore, parks one acre or larger are considered "Neighborhood Parks." One of the "mini parks" located on the west side of Interstate 5 will be private and will be operated and maintained by a homeowner's association or similar entity, rather than by the City Parks Department. The mini park on the east side of I-5 will be accepted into the City's Park System and will be maintained by the City Parks and Recreation Department Source: M&H, August 2008.		

TABLE 2-2		
DELTA SHORES – BREAKDOWN OF RESIDENTIAL LAND USES		
Land Use	Number of Units	Acres
Low Density Residential (LDR) ¹	675	137
Medium Density Residential (MDR)	2,492	178
High Density Residential (HDR)	1,738	64
Residential Mixed-Use	187	20
Total	5,092	399
Note:		
1. Includes lot sizes from 5,000 sf to 7,000 sf. Source: M&H, August 2008.		



Source: EDAW, 2008.

FIGURE 2-3
Land Use Plan

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Delta Shores

TABLE 2-3		
DELTA SHORES – NEW 2030 GENERAL PLAN LAND USE DESIGNATIONS		
Land Use	Acres	Percent of Total Acreage
Residential		
Suburban Low Density Residential (3-8 du/ac)	136.9	17.5%
Suburban Medium Density (7-15 du/ac)	178.0	22.8%
Suburban High Density (15-30 du/ac)	64.4	8.2%
Subtotal	379.29	
Commercial		
Regional Commercial Center	127.4	16.3%
Traditional Center (15-36 du/ac)	19.9	2.5%
Subtotal	147.3	
Parks/Open Space/Schools		
Community Park	26.64	3.4%
Neighborhood Parks (7 neighborhood Parks)	33.32	4.3%
Mini Parks ¹ (2 mini parks)	1.86	.24%
Detention	26.85	3.4%
Open Space	24.47	3.13%
Trails	3.54	0.45%
Wetland Restoration	27.82	3.6%
Schools (2 Elementary Schools)	19.90	2.5%
Community Center (Private)	2.60	0.34%
Subtotal	167	
Infrastructure/Quasi Public		
Backbone Circulation/roadways	84.44	10.8%
Utility - Water	1.55	0.2%
Utility – Electric Substation	0.52	0.07%
Fire Safety	2.0	0.3%
Subtotal	88.47	
Total	782.08	
Notes:		
1. The City does not have an official "mini park" designation. Therefore, parks one acre or larger are considered "Neighborhood Parks." One of the "mini parks" located on the west side of Interstate 5 will be private and will be operated and maintained by a homeowner's association or similar entity, rather than by the City Parks Department. The mini park on the east side of I-5 will be accepted into the City's Park System and will be maintained by the City Parks and Recreation Department.		
Source: City of Sacramento draft 2030 General Plan, 2008.		

Residential

The proposed project includes housing for a residential population of approximately 13,086 residents, based on a maximum of 5,092 residential units assuming 2.57³ persons per household. For the purposes of the EIR analysis the following density range is provided. The density of the 675 low density residential units would range from 4 dwelling units/acre (du/ac) to a maximum of 7 du/ac. The density of the 2,492 medium density residential units would range between 8 to 14 du/ac. The density of the 1,738 high density units would range between 15 and 27 du/ac. For the approximately 20 acres of the Residential/Mixed-Use area, the density would develop 187 units with a density ranging between 23 and 29 du/ac. The proposed density of the approximately 384 acres designated for residential uses is 13.6 du/ac. The proposed residential density over the entire 782-acre site is 6.7 du/ac. Table 2-2 provides a break down of the proposed project's residential units by density.

3 U.S. Census Bureau, American Fact Finder, Fact Sheet, Sacramento City, California, <<http://factfinder.census.gov>>, accessed February 6, 2008.

The proposed project would include a total of 15 percent of all residential units designated as affordable consistent with the City's Mixed Income Housing Ordinance. Based on the buildout of 5,092 units a total of 783 units would be designated as affordable.

The applicant proposes low density (R-1-PUD) to include lot sizes that range between 5,000 and 7,200 square feet (sf), medium density (R-1A-PUD) to include lot sizes between 2,300 and 3,000 sf. The proposed high density (R-3-PUD) zoning would include lots dedicated to attached condominiums and multi-family dwelling units.

Residential development would include a mix of one and two-story single family homes along with attached condominiums and other types of multi-family units. The units would be designed to provide a variety of design elements including a mix of roof lines, articulated building facades with exterior balconies, dormer windows, and other design elements. The building materials would include a mix of natural elements such as stone, brick, and wood as well as stucco. The goal is to provide a variety of building materials and colors to add visual interest and character to each neighborhood. The Delta Shores PUD Guidelines (see Appendix C) provides a detailed overview of the various design elements that would be required for all new residential development.

According to the PUD Guidelines prepared for the Delta Shores project, residential units would be encouraged to follow the energy performance standards set forth by the State Energy Standards Model. This would include following standards for energy conservation included in the California Energy Star New Homes Program (CESNHP) and the California Home Energy Efficiency Rating System (CHEER). Building designs would be encouraged to include passive solar (i.e., through building orientation and use of window awnings, etc.) and cooling concepts, solar panels, and energy efficient windows, roofs, insulation, and HVAC systems for heating and cooling. In addition, energy efficient appliances and water conservation features would be considered in future residential development.

Retail/Commercial

The project includes approximately 147 acres slated for neighborhood commercial and regional commercial. The project includes a Residential/Mixed-Use area that would provide a maximum of approximately 161,600 sf of neighborhood-serving retail and office uses (see Figure 2-3). It is anticipated that retail uses could include a small grocery store, drugstore, restaurants, and other neighborhood-serving retail uses as well as professional offices (i.e., law firms, real estate firms, etc.). The Residential/Mixed-Use area is located within a ½ mile walking distance of most of the residential neighborhoods. The Residential Mixed-Use designation would allow high density residential uses, approximately 187 units, above the first floor retail.

The project also includes a larger, regional Village Center that would provide up to a maximum of 1.3 million sf of commercial and retail uses. The Village Center would be located adjacent to I-5 in the eastern portion of the site. It is anticipated that the Village Center could include "big box" development as well as restaurants, movie theatres, book stores, home supply stores, electronics stores, and other types of similar retail and professional office uses.

The building design and materials of the commercial centers would feature earth tones and natural materials such as stone, stucco, and wood. The Delta Shores PUD Guidelines (see Appendix C) include specific standards for building height, massing, landscaping, signage and lighting to ensure the building design complements the adjacent neighborhoods.

The retail/commercial component of the project would be developed by M&H Properties.

Parks and Open Space

Parks

The proposed project includes a mix of parks, open space, recreation, and pedestrian and bicycle paths that serve to enhance the livability and sustainability of the project.

The project includes approximately 25 acres of open space and approximately 65 acres of parks and multi-use trails within the project site. As part of this park acreage, the project site also contains an approximately 27-acre Community Park. The Community Park could potentially include a variety of active recreational uses including soccer, softball, and baseball fields, basketball and tennis courts, a community center, restrooms, and other park amenities.

The project also includes Neighborhood Parks that would range from 3.10 to 8.6 acres. Neighborhood parks could include unlighted soccer fields, tot lots, half court basketball, and other play areas. Two of the Neighborhood Parks are located adjacent to the two elementary schools located in the eastern portion of the project.

The project also includes two mini parks approximately 0.5 and 1.32 acres in size. The City does not have an official "Mini Park" designation. Therefore, parks one acre or larger are considered "Neighborhood Parks." According to the City's Parks Department, the 0.5-acre park would not be accepted for the purposes of meeting parkland dedication requirements. This park would be operated and maintained by a homeowner's association or similar entity, rather than by the City Parks Department. Mini parks are designed as small gathering areas that would potentially include picnic tables, benches, tot lots, or other recreational amenities to serve the immediate residential area.

Open Space and Wetland Restoration

Open space areas are proposed throughout the site. Larger open space areas are located in the northwest portion of the site, on either side of interstate 5, north of the Village Center. Additional open space areas are located in the eastern portion of the site, around the wetland preserve, connected to the parks in the northeast, and north of the northeastern most MDR parcel.

In the eastern portion of the site, there is an existing seasonal wetland drainage swale that flows from the northern boundary of the project site to the southern boundary where it drains off of the property. This feature, as it currently exists, is comprised of ruderal (weedy) vegetation typically found in disturbed wetland areas, and has been historically intensively farmed and cultivated in wheat, safflower, and other dry-farmed grain crops. The preferred drainage system for the project is

proposing to recreate an approximately 28-acre wetland preserve area to be centered in the location of the existing swale. The land bordering the wetland preserve would be excavated to provide detention storage for storm drainage from the project site as well as, storm water which currently drains across the site through pipes from neighboring development located to the north. All water entering the preserve would be subject to either active or passive treatment including the use of storm grates, bio-swales, bio-slopes, water quality basins, and other Low Impact Development strategies incorporated into the project development. The location of the proposed detention basins are shown in Figure 2-3.

Wetland restoration is proposed within the preserve, including the design of wetland swales, seasonal wetland features, emergent marsh, which would operate adjacent to and in concert with the water quality and detention basins. The existing swale feature would be excavated (deepened and widened), and wetland features more closely resembling the typical historic conditions would be created. The restoration may include creation of a low-flow channel, seasonal wetland features in the adjacent floodway, and the creation of wet shelves to accommodate emergent marsh vegetation. Further, the project includes planting and seeding of native vegetation to restore a native riparian corridor centered along the low flow channel, and appropriate native grasses, shrubs, and trees in the adjacent seasonally-flooded upland areas.

The proposed detention basins would become a part of the City's operated drainage system and would accept storm water from the project site, as well as existing development located to the north. This water would initially be discharged into a water quality basin for treatment before flowing into the wetland preserve. It is anticipated that passive treatment in the water quality basins and bio-filtration in the wetland preserve would result in improved water quality. The proposed detention basins to the south of the wetland preserve would include water on a year-round basis which would provide a perennial water feature. The detention basins are described in more detail in the Hydrology and Water Quality section.

The Wetland Preserve would serve to provide open space and adjacent passive recreational use, while providing water treatment through bio-filtration and the storage of floodwater following storm events. The wetland preserve would be maintained by a designated conservancy.

Alternatively, the wetland area would be preserved in its current condition with no additional restoration. Under this scenario, additional detention ponds would be required to prevent any stormwater runoff from the project entering the wetland area after treatment. These ponds are described in more detail below and in the Hydrology and Water Quality section. In addition, this scenario would eliminate 5.78 acres of medium density residential (80 units) and 4.0 acres of parkland. The changes in residential and parkland acreage would not cause an increase in any impacts, and are therefore not analyzed further in this document. This scenario is shown in Figure 2-4, No Wetland Restoration Scenario.



Source: EDAA, 2008.

FIGURE 2-4
No Wetland Restoration Scenario

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Trails, Paseos, and Bikeways

The proposed project would be internally linked through a system of on- and off-street pedestrian paths, shared-use trails, widened sidewalks, and paseos. These paths, trails, and paseos are envisioned as landscaped corridors internally linking destinations within the project site, as well as connecting the project site to surrounding areas. In addition, many of the parks within the proposed project would be located adjacent to these paths, trails, and paseos, maximizing connectivity to residential neighborhoods. Figure 2-5 shows the proposed trail and bicycle connections throughout the project site. A pedestrian bridge is proposed over Cosumnes River Boulevard to ensure pedestrians and bicyclists easy and safe access through the project site.

The proposed trails system is designed to be integrated with the City of Sacramento Bikeways Master Plan. The trails system would include a segment of shared-use trail along the proposed project's eastern perimeter that is intended to provide future connectivity to two trails identified in the City of Sacramento Bikeways Master Plan: the existing North Laguna Parkways Trail, which currently ends at Rexleigh Drive east of the project area, and a proposed rails-to-trails project along the Western Pacific spur, which is also east of the project area. In addition, pedestrian and bicycle access to the Community Park would be available from the Residential/Mixed-Use area and adjacent high-density residential areas via a widened sidewalk leading to the Community Park's western boundary.

A major north/south shared-use trail is planned to run adjacent to the northern wetland swale that would connect neighborhoods north of Cosumnes River Boulevard with the Residential/Mixed-Use area and nearby parks. A pedestrian overpass would enable pedestrians and bicyclists to safely cross Cosumnes River Boulevard.

An existing utility corridor located roughly along the northern boundary of the project site provides an opportunity to connect the larger Village Center with nearby high-density residential neighborhoods and a neighborhood park. The utility corridor paseo would connect to an existing bike trail in the Meadowview neighborhood north of the project site via a neighborhood park, off-street trails, and on-street bike lanes. A widened sidewalk loop has been designed along the high density residential neighborhood that would connect residential areas south of Cosumnes River Boulevard to the Village Center via a pedestrian overpass, continuing along to the Residential/Mixed-Use area and detention basin and finally connecting to the off-street trail in the Community Park.

The Village Center would be connected to the adjacent high-density residential area by a pedestrian overpass. A paseo through the heart of the residential area would connect with on-street bike lanes leading to the residential mixed-use area and neighborhood and community parks.

Public Facilities

The project includes two approximately 10-acre sites designated for elementary schools, a 2-acre site designated for a future fire station, two sites designated for electrical substations, and an approximately 3-acre private Community Center to serve the residents. A water storage tank is also proposed adjacent to the southwest corner of the Job Corps site. The Sacramento City Unified

School District (SCUSD) has indicated that there may not be a need for the elementary school site proposed in the northeastern portion of the site. If the school district determines not to construct a school in this location the applicant has indicated that the area would be developed with low density residential. However, the total number of housing units would not exceed a total of 5,092 units.⁴ The project site is located entirely within the SCUSD.

Circulation

The circulation system within the project site would take advantage of the extension of Cosumnes River Boulevard, which would bisect the project site in an east/west direction, along with local streets and pedestrian/bicyclist connections. The bikeway and trail system is described in more detail under Trails, Paseos, and Bikeways, above.

As shown in Figure 2-6, the extension of Cosumnes River Boulevard from Franklin Boulevard westerly to an interchange with I-5 and eventually to Freeport Boulevard would bisect the project site. A total of four lanes would be provided between Franklin Boulevard and 24th Street increasing to six lanes through the project site from 24th Street to the I-5 interchange connecting to Freeport Boulevard. This major roadway would include a landscaped center median and a total of five signalized intersections between 24th Street and Freeport Boulevard, seven including the signals at Freeport and 24th Street within the project site. Cosumnes River Boulevard would provide access to the proposed light rail stop to be located further east of the project boundary. The extension of Cosumnes River Boulevard is a separate project previously approved by local, state, and federal agencies.

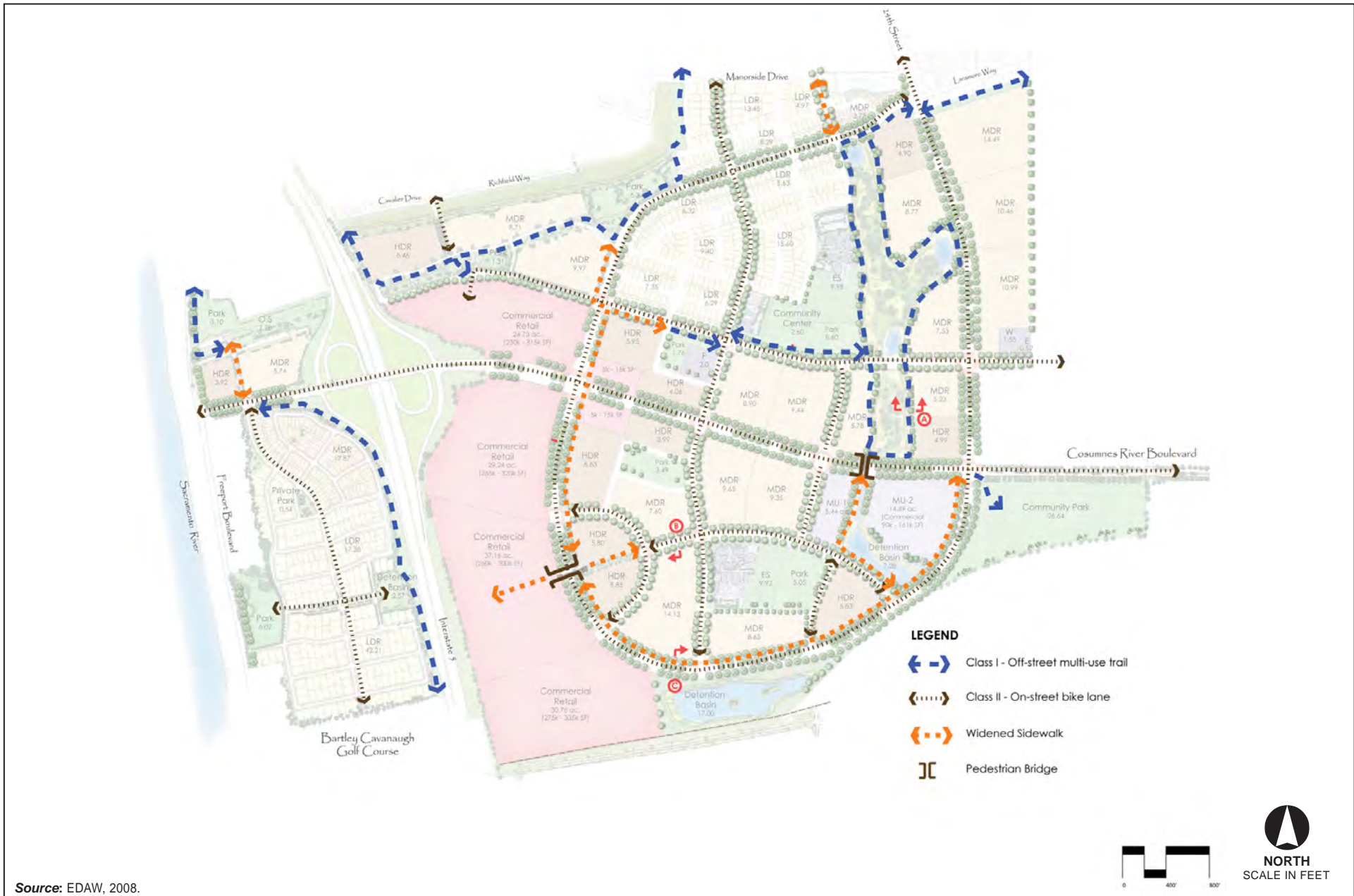
Connections to the adjacent Meadowview neighborhood to the north would be provided via an extension of 24th Street and Manorside Drive, which would both provide connections to Cosumnes River Boulevard through the project site. In addition, a roadway would stub into the Job Corps training facility to the north in the event this land were ever to be developed.

The western portion of the site would have access via Freeport Boulevard and Stone Crest Avenue that would connect to the new I-5 interchange.

All internal roadways would have on-street bicycle access. Sidewalks would be provided along all the residential roadways along with landscaping and street trees to facilitate pedestrian access and safety. A pedestrian bridge is proposed to connect the residential areas to the east of the Village Center.

Parking for the Village Center and Residential/Mixed-Use area would be provided by on-site surface parking lots. Parking facilities include landscaping and trees in compliance with the City's 50 percent shade requirement.

4 For the purposes of the parks analysis (see Section 5.7, Public Services) a maximum of 5,222 units is evaluated.



Source: EDAW, 2008.

**FIGURE 2-5
Parks, Open Space, and Trails Plan**

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Delta Shores

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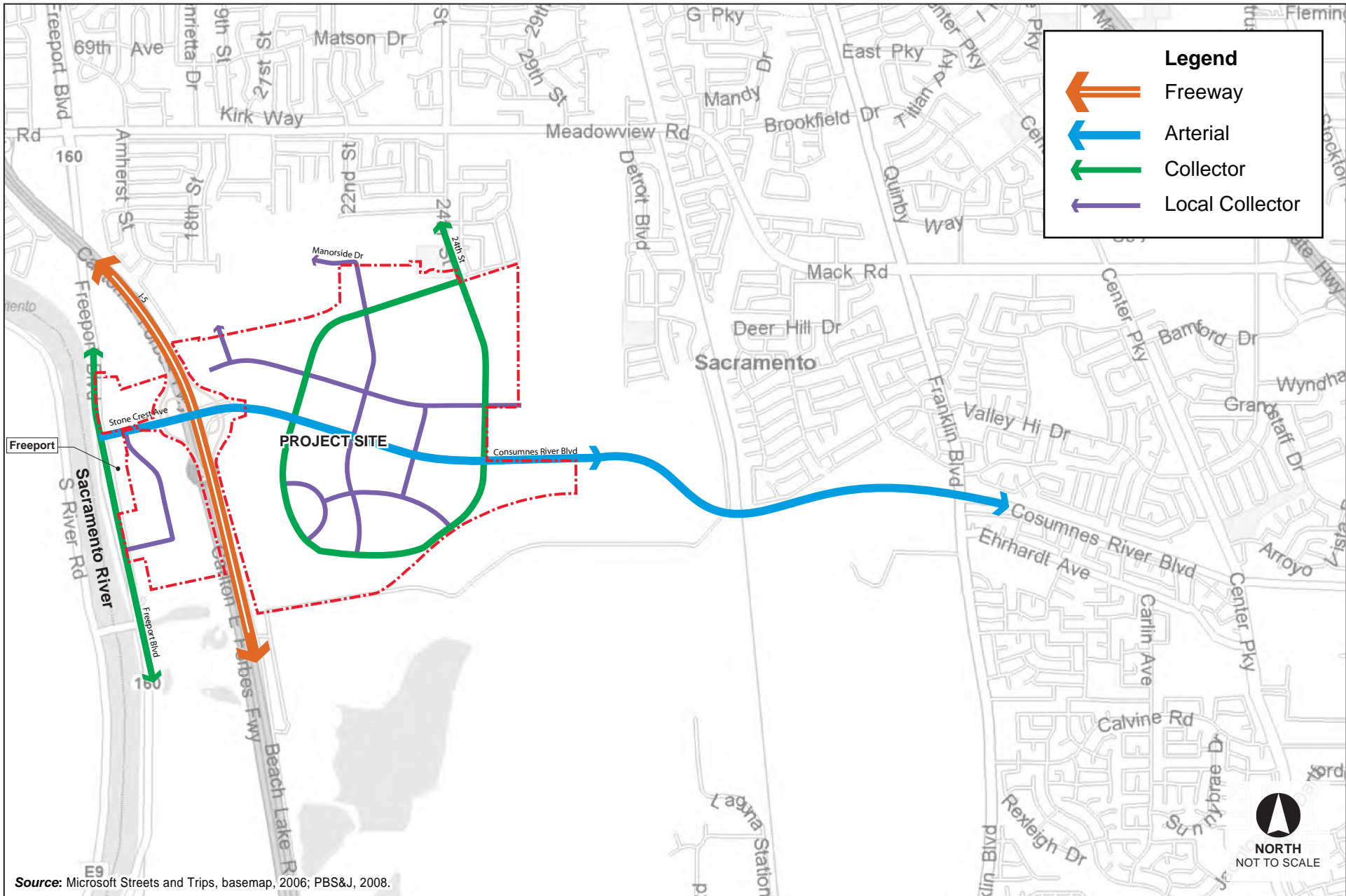


FIGURE 2-6
Circulation Plan

0D5131100

Delta Shores

Public Services

The proposed project provides a variety of infrastructure including water, wastewater, storm drain, electrical service, natural gas, and a site for a proposed fire station.

Water Supply

Water service for the project would be provided by the City of Sacramento through connection to a 24-inch transmission water line extension along Freeport Boulevard and 24th Street. The project would include a looped water system with a series of water lines ranging in size from 8-inches to 24-inches. As part of the Cosumnes River Boulevard Extension project a 24-inch transmission water line is proposed from Freeport Boulevard to Franklin Boulevard through the project site. The applicant has prepared a phased water analysis, per City requirements, that indicates that adequate water pressure is available to meet fire flow requirements. In addition, the City Department of Utilities has requested that a portion of the project site be reserved for water storage facilities. The project is proposing to include an on-site water storage facility.

Wastewater

Wastewater service to the project site would be provided by the City of Sacramento. The project would be served by the Sacramento Regional Wastewater Treatment Plant. The proposed project includes a series of gravity sewer pipes between 8 and 12 inches in the western portion of the project site. The project is served by two sanitary sewer lift stations. One lift station would be constructed west of I-5 and wastewater would be pumped under the freeway to the east side of the project. The other lift station would be constructed on the community park site located near the intersection of Delta Shores Circle South and Street E. Existing and proposed sewer facilities are shown in Figure 5.8-1.

SRCSO has indicated that sewage flows (approximately 0.87 mgd peak) from Phase 1A (the commercial portion east of I-5) and Phase 1B (development west of I-5) could temporarily discharge to the 96-inch City interceptor. In addition, SRCSO indicated that, at buildout, wastewater from the entire site could be pumped from the lift station at the community park site to the Central Interceptor located at the intersection of Cosumnes River Boulevard and Franklin Boulevard.

Storm Drainage

The project site is located in the Basin 89 and G267/Morrison Creek watershed and the Sacramento River watershed. The entire watershed is approximately 1,450 acres and generally drains south/southeast. The Basin 89 watershed drains to Pump Station 89, which is located at the southern boundary of the watershed just south of the project site. Stormwater is then pumped from Pump Station 89 through the levee and into Morrison Creek which discharges into the Sacramento River.

An existing storm drain system was constructed for the project site about 40 years ago. However, much of this infrastructure is no longer adequate for the project with the exception of Pump Station

89 and the existing infrastructure east of the project site. Pump Station 89 would need to be upgraded to current City standards.

The project is proposing a preferred system with a minimum of four water quality/detention basins that would occupy a total of approximately 27 acres minimum. Two of the basins would be filled year-round. The remaining detention basins would only be used during the winter months to reduce peak flows and would be dry the remainder of the year. One of the dry detention basins is located in the western portion of the site, includes a storage capacity of 16.2 acre feet. The larger of the two wet detention basins located in the southern portion of the site would be constructed as part of the first phase of construction and would have a total capacity of 65 acre-feet of storage. A new pipe from this basin would tie directly into Pump Station 89. The second wet detention basin is located just south of the proposed residential mixed-use parcel and includes a storage capacity of 32 acre-feet. The detention basins are designed to handle runoff from the project site for the greater of a 100-year 10-day rainstorm or 100-year 24-hour storm event.⁵ The combined basins are sized to hold a storage volume of approximately 50 acre-feet of lake storage and 200 acre-feet of detention storage includes 50 acre-feet of water quality storage. A total of approximately 500,000 cubic yards of soil would be excavated to construct the detention facilities. The detention basin pipeline would carry the reduced peak flows under I-5, and into the project's drainage facilities located on the east side of the freeway.

Alternatively, if the wetland preserve area is not restored, and would not accept additional flows, additional detention basins would be constructed, as shown in Figure 2-4. One basin would be wet year-round and would total approximately 5.78 acres. If needed, another, approximately 4.0 acre basin, would be constructed in the northeastern portion of the site. This basin would remain dry in the summer, but allow peak flow runoff in the winter months. The total proposed water quality and flood control storage volume in this scenario would be approximately 200 acre-feet.

Electricity and Natural Gas

The project would provide connections to electrical and natural gas systems to serve the project site. Electricity would be provided by the Sacramento Municipal Utility District (SMUD) and natural gas would be provided by PG&E. All new electrical lines would be installed underground in compliance with existing legislation for new development with the exception of temporary above-ground electrical lines for the fire station until surrounding improvements are complete. As part of the project, an existing 21-inch force gas line running along the eastern edge of I-5 would be relocated to the west side of the freeway and would be designed to cross the freeway at the southern edge of the project site. In addition to facilitating project development, this relocation is necessary to accommodate the proposed Cosumnes River Boulevard Interchange and Extension project.

Other Public Services

The project proposes to provide approximately two acres for a future fire station.

5 Barron Caronite, PE, M&H, written communication, July 28, 2008.

Sustainable Project Elements

The proposed project includes a variety of elements designed to promote energy efficiency and minimize dependence on the automobile. The following summarizes some of the sustainable design elements included in the project.

- Consistent with the Sacramento Metropolitan Air Quality Management District (SMAQMD) recommended guidance and with the City of Sacramento's Zoning Code, the Village Center and Residential/Mixed-Use retail areas of the Delta Shores project are designed to include long-term parking bicycle facilities at a ratio 1 bicycle storage space (bike locker) per 20 vehicle parking spaces. In addition, to provide short-term bicycle parking facilities, the Village Center and Residential/Mixed-Use area also include short-term bicycle parking spaces at a ratio of 1 bike space per 20 vehicular parking spaces.
- The Village Center and Residential/Mixed-Use portions of the project are designed to include "end-of-trip" facilities including showers, lockers, and changing areas for employees.
- The project incorporates a comprehensive trails plan that provides an integrated network of both on- and off-street trails for pedestrians and bicyclists. The trails plan has been designed to provide direct pedestrian access to schools, parks, and other community oriented facilities. In most circumstances this access is situated in an off-street trail to further eliminate barriers to pedestrian connectivity. When fully developed, the entire project would be located within ½ mile of an existing Class I or Class II bike lane. In addition to providing access to all portions of the project site, the trail system has been designed to connect to existing off-site facilities located north, east, and west of the project boundaries.
- The project has been designed consistent with the City's "Pedestrian Friendly Street Standards," which includes separated sidewalks on all major and minor roadways with a minimum sidewalk width of five feet with wider sidewalk sections, up to ten feet in width, in many portions of the project including along Cosumnes River Boulevard, which bisects the project east to west. In addition to sidewalk widths, the project roadway design includes vertical curbs and enhanced pedestrian nodes at major intersections.
- The Delta Shores PUD Guidelines include measures to address parking throughout the project's residential components. Consistent with smart growth principles, the PUD Guidelines require single-family garage orientations that deemphasize the garage as the dominant structural element of individual house design through a variety of alternatives including side-on, recessed, or detached garages.
- The Regional Transit Master Plan identifies the South Line Phase II Light Rail extension with construction of an anticipated light rail station on land located immediately adjacent to the project site to the east. Therefore, the project's Residential/Mixed-Use area has been located within a ½ mile of this future light rail station.
- The use of fireplaces or wood burning stoves within the residential portion of the project would be prohibited. However, consistent with SMAQMD guidance, natural gas or electric fireplaces would be allowed within the project.

- The Village Center and Residential/Mixed-Use area portions of the project include the installation of ozone destruction catalyts on air conditioning systems. Although potentially available to the residential portion of the project, this measure is only being applied to the project's commercial areas.
- Buildings within the Village Center and Residential/Mixed-Use area portions of the project would be designed with reflective roofing materials that meet ATSM high emissivity requirements.
- The project has incorporated integrated solar energy systems into parking fields (lots) to provide beneficial shading for employee and customer parking areas. In addition, project design features have been included that limit unobstructed exposure of non-roof surfaces from direct sunlight.
- Consistent with the City's Shade Tree Ordinance, 50% of the project's impervious surfaces would be placed under cover or would be shaded by large canopy shade trees that achieve 50% coverage within 15 years of project occupancy.

Landscaping

The project applicant proposes to landscape the project site, per the Delta Shores PUD Guidelines (see Appendix C). Landscape design guidelines are included in the Guidelines and provide direction for the design and organization of the public spaces on the project site by providing guidance on planting design, street trees, types of plants to be used, irrigation and water conservation, fencing and walls, paving and hardscape, lighting, streetscape furniture, water features, public art, parking and landscape setback buffers. New landscaping would be required to be consistent with the Guidelines and adhere to City standards. The project applicant would coordinate with the City's Urban Forest Service during preparation of all landscaping plans.

Lighting

Exterior lighting would be provided along residential streets, around neighborhood parks, in residential neighborhoods, and in commercial centers. Street lights would be consistent with the City standards for reducing glare and spillover light.

Off-Site Improvements

Off-site improvements, such as sewer lines, would not be required to develop the project. Existing sewer infrastructure is stubbed to the project site so no off-site connections would be required. Information regarding off-site transportation improvements can be found in Section 5.9, Transportation and Circulation.

Project Objectives

The project applicant's objectives for the proposed project include the following:

- 1) Increase the City's housing supply in close proximity to existing transportation corridors and employment centers to minimize trip length for employees.
- 2) Design a residential development that is consistent with the City's land use designations and zoning for the site, and compatible with existing nearby neighborhoods.
- 3) Provide residential uses in an area contiguous to existing development and finance required infrastructure.
- 4) Provide regional and neighborhood serving retail to satisfy the substantial demand for these retail services in the South Sacramento portion of the City.
- 5) Provide services in the proposed retail development to serve the traveling public associated with the project's proximity to I-5.
- 6) Provide circulation and infrastructure improvements consistent with the City's existing General Plan goals and policies while recognizing the inherent constraints of the project site.

Project Schedule and Phasing

The project is anticipated to be developed in four primary phases with initial development occurring on the eastern portion of the site, east of I-5 associated with construction of the Village Center and high density residential uses, as shown in Figure 2-7. Phase one would also include improvements to provide access from the fire station north of Cosumnes River Boulevard. The second phase would include construction of the residential portion west of I-5. The third phase would include residential development north of the future Cosumnes River Boulevard, with the exception of a small area of medium and high density residential. The balance of the project, including the Residential/Mixed-Use area and the remaining residential development south of Cosumnes River Boulevard as well as the medium density residential located adjacent to the eastern boundary of the project site is anticipated to develop as the last phase of the project.

The first aspect of construction, which includes rough grading and installation of backbone infrastructure (roads and utilities), is anticipated to begin in early to mid 2009 and be completed by late 2009 or early 2010 for the first phase of the project. Rough grading and installation of roads and infrastructure for the second phase is anticipated to begin in summer/fall 2010 and be completed by late spring/early summer 2011. The third phase is scheduled to commence in summer/fall 2011 and be completed by late spring/early summer 2013 while the last phase is anticipated to be completed by 2015 at the earliest.

Lead and Responsible Agencies

In conformance with sections 15050 and 15367 of the State CEQA Guidelines, the City of Sacramento has been designated the "lead agency", which is defined as the "public agency which has the principal responsibility for approving or disapproving a project."

Lead Agency Contacts

City of Sacramento Development Services Department

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300 Richards Boulevard, 3rd Floor
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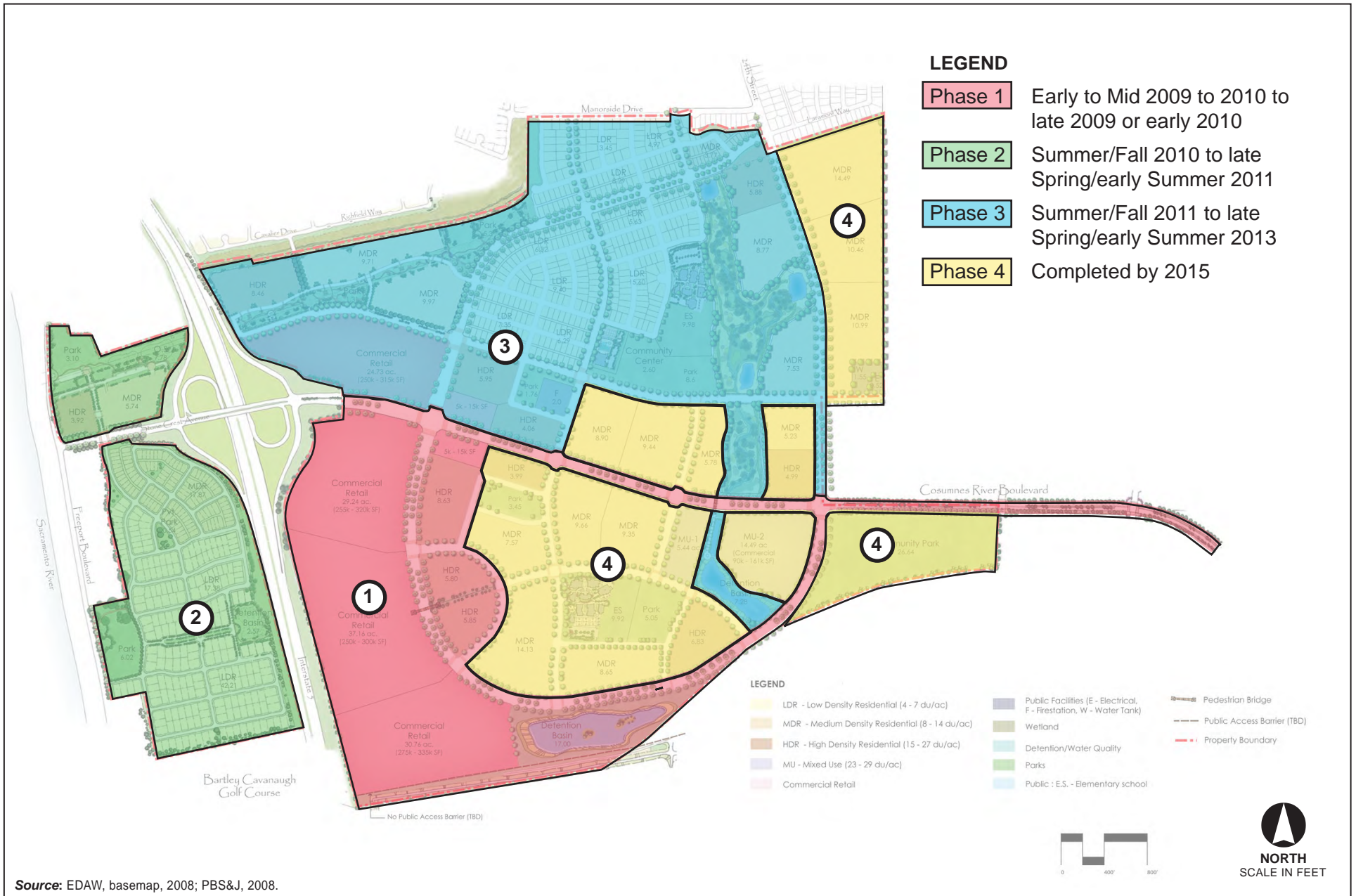
Responsible Agencies

A responsible agency is a public agency with discretionary approval over one or more actions involved with the development of a proposed project. The Responsible Agencies for the proposed project include Sacramento County, the Sacramento Regional County Sanitation District, the California Department of Fish and Game, the U.S. Army Corps of Engineers, and the Regional Water Quality Control Board for the Central Valley Region.

Required Discretionary Actions

The City of Sacramento and other responsible agencies are required to follow through with discretionary actions for project approval. The actions necessary for project approval include, but are not limited to, the following:

- Preparation and certification of an EIR pursuant to the California Environmental Quality Act and associated Guidelines (City of Sacramento);
- Approval of the Water Supply Assessment (City of Sacramento);
- Development Agreement (City of Sacramento);
- General Plan Amendment (City of Sacramento);
- Airport/Meadowview Community Plan Amendment (City of Sacramento);
- Rezone (City of Sacramento);
- Delta Shores PUD Guidelines and Schematic Plan Amendments (City of Sacramento);
- Master Tentative Parcel Map(City of Sacramento);
- Tentative Subdivision Maps (City of Sacramento);
- Inclusionary Housing Plan (City of Sacramento);



Source: EDAW, basemap, 2008; PBS&J, 2008.

FIGURE 2-7
Phasing Plan

0D5131100

Delta Shores

- Section 404 Wetlands Permit (U.S. Army Corps of Engineers);
- Waste Discharge Requirement Permit and Section 401 Certification or Waiver (Regional Water Quality Control Board);
- Bikeways Master Plan Amendment (City of Sacramento).

3.0 SUMMARY OF IMPACTS AND MITIGATION MEASURES

3.0 SUMMARY OF IMPACTS AND MITIGATION MEASURES

PROJECT UNDER REVIEW

The Delta Shores project (proposed project) is a proposed mixed-use development in south Sacramento. The Sacramento Regional County Sanitation District (SRCSD) bufferlands are located directly south of the project site. The site is bisected by Interstate 5 (I-5), with approximately 120 acres located west of I-5, adjacent to the Town of Freeport and the Bartley Cavanaugh Golf Course in unincorporated Sacramento County, with the remaining approximately 662 acres east of the interstate. The proposed project includes the development of approximately 5,092 residential units of varying densities, two mixed-use retail centers – a Regional Village Center and a Residential Mixed-Use area with a maximum of 1.3 million square feet and approximately 161,600 square feet of commercial and retail uses respectively, two elementary schools, a community center, and approximately 90 acres of parks, trails and open space on a total of approximately 782 acres.

The project site is surrounded by a variety of land uses. As mentioned above, the western portion of the site is located adjacent to the Town of Freeport and the Bartley Cavanaugh Golf Course. A small portion of the site is located along Freeport Boulevard, also known as Highway 160, a State-designated scenic highway. The project site is not located directly adjacent to the Sacramento River, but the river is located on the opposite side of Freeport Boulevard. The 662 acres located east of I-5 are bound by Morrison Creek and the SRCSD bufferlands to the south, undeveloped land to the east, the Sacramento Jobs Corps facility near the northeast, and existing single-family residential development to the north. The land uses are described in more detail in Chapter 2, Project Description. Figure 2-3 depicts the land use plan.

SUMMARY OF IMPACTS

Effects Found to be Less Than Significant

As shown in Table 3-1, a number of project impacts identified in the EIR were found to be less than significant, requiring no mitigation. These impacts are found in the following sections: 5.1 (Aesthetics and Visual Resources), 5.2 (Agricultural Resources) 5.3 (Air Quality), 5.4 (Biological Resources), 5.5 (Hydrology and Water Quality), 5.6 (Noise), 5.7 (Public Services), 5.8 (Public Utilities), and 5.9 (Transportation and Circulation). In the course of drafting the EIR for this project, it was determined that numerous other identified impacts could be reduced to a less-than-significant level with implementation of the proposed mitigation measures described herein.

Environmental Impacts and Mitigation

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, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (CEQA Guidelines, section 15382). Implementation of the proposed project would

result in significant impacts to some of these resources, which are fully analyzed in Sections 5.1 through 5.10 of this document and summarized in Table 3-1 (provided at the end of this Chapter).

This EIR discusses mitigation measures that could be implemented by the City and/or the project applicant to reduce potential adverse impacts to a level that is considered less than significant. Such mitigation measures are noted in this document and are found in the following sections: 5.2 (Agricultural Resources), 5.3 (Air Quality), 5.4 (Biological Resources), 5.5 (Noise), 5.6 (Public Services), and 5.9 (Transportation and Circulation). However, even with the application of feasible mitigation measures, some impacts could not be reduced to less-than-significant levels. The significant and unavoidable impacts that were identified for both project-level and cumulative impacts are shown below.

Project-Specific Significant and Unavoidable Impacts

- 5.3-3 Operation of the proposed project would contribute to emissions of ozone precursors.
- 5.6-3 Operation of the proposed project could permanently expose sensitive receptors to increased traffic noise levels from local roadways.
- 5.9-7 Implementation of the project under Baseline plus Project conditions could affect the Meadowview Road/24th Street intersection.
- 5.9-9 Under Baseline Plus Project conditions, the project would have a significant impact on freeway operations.

Cumulative Significant and Unavoidable Impacts

- 5.3-9 Operation of the proposed project, combined with other on-going development in the air basin, would increase cumulative levels of ozone precursors.
- 5.9-13 Under Cumulative plus Project conditions the segment of Cosumnes River Boulevard from I-5 to Delta Shores Circle could be impacted by the project.
- 5.9-14 Under Cumulative plus Project conditions the segment of Detroit Boulevard south of Meadowview Road could be impacted by the project.
- 5.9-16 Under Cumulative plus Project conditions the Meadowview Road/24th Street intersection could be impacted by the project.
- 5.9-20 Under Cumulative plus Project conditions the Cosumnes River Boulevard/Delta Shores Circle (West) intersection could be impacted.
- 5.9-23 Under Cumulative Plus Project conditions, the project would have a significant cumulative impact on freeway operations.

ALTERNATIVES TO THE PROPOSED PROJECT

The EIR analyzes the following alternatives to the proposed project:

- **No Project/No Development Alternative**, which assumes that the proposed project would not be built and there would be no new development of the site. This alternative assumes the existing buildings and uses on the site would remain.
- **No Project/Existing Zoning Alternative**, which assumes that the proposed project site would be developed consistent with currently allowable land uses, zoning, and development intensities.
- **Reduced Density/All Residential Alternative**, which assumes that the regional commercial uses would not be developed and would be replaced by residential uses, while the neighborhood commercial uses would remain. In addition, this alternative would reduce the total number of residential units by 20 percent while using the same footprint. All other uses would remain the same.

Potential Areas of Concern

Responses to the NOP (see Appendix B) were received from several state and local agencies, including the Sacramento Regional County Sanitation District (SRCSD), County Sanitation District 1 (CSD-1), Regional Transit, Sacramento Fire Department, City Preservation Office, California Department of Conservation, California Department of Transportation (Caltrans), California Public Utilities Commission (PUC), Department of Water Resources, California Department of Fish and Game (CDFG), Sacramento Area Council of Governments (SACOG), Delta Protection Commission, and Sacramento Metropolitan Air Quality Management District (SMAQMD), as well as several private citizens. A copy of the NOP and Initial Study are included in Appendix A, responses to the NOP are included in Appendix B in accordance with CEQA. The NOP responses are summarized below.

- A comment letter received from the City's Preservation Office requested that a Records Search be conducted for the project site; all structures to be removed be evaluated by a qualified architectural historian; evaluate the landscape for significance; and, consult with the Native American Commission. These issues were addressed in the IS, please see Appendix A.
- Traffic on Meadowview and through the Town of Freeport along with air quality were concerns raised by residents in the area.
- Loss of agricultural land was a concern raised by the State Department of Conservation.
- Potential encroachment on a flood control plan was a concern raised by the State Department of Water Resources.
- Issues with the project's consistency with SACOG Blueprint Project principles were raised by SACOG.

- Possible capacity issues and discussion of sewage collection and treatment infrastructure were brought up by SCRSD and CSD-1.
- Regional Transit commented addressing future transit service to the project area, including the extension of light rail.
- Comments requesting that the fire station within the project be developed in the first phase of project construction and regarding issues with the need for additional access into the western portion of the project site.
- Potential impacts specific to development within the Secondary Zone of the Delta, as commented on by the Delta Protection Commission.
- SMAQMD made recommendations for ways the project can reduce air quality impacts and suggested that the EIR include a discussion of global climate change impacts.

SUMMARY TABLE

Table 3-1 (Summary of Impacts and Mitigation Measures), has been organized to correspond with the environmental issues discussed in Chapter 5. The summary table is arranged in four columns:

1. Environmental impacts (“Impact”).
2. Level of significance without mitigation (“Significance”).
3. Mitigation measures (“Mitigation Measure”).
4. The level of significance after implementation of mitigation measures (“Residual Significance”).

If an impact is determined to be significant or potentially significant, mitigation measures are identified, where appropriate and feasible. More than one mitigation measure may be required to reduce the impact to a less-than-significant level. This EIR assumes that all applicable plans, policies, and regulations would be implemented, including, but not necessarily limited to, City General Plan Policies, laws, and requirements or recommendations of the City of Sacramento. Applicable plans, policies, and regulations are identified and described in the Regulatory Setting of each issue area and within the relevant impact analysis. A description of the organization of the environmental analysis, as well as key foundational assumptions regarding the approach to the analysis, is provided in Chapter 5, Introduction to the Analysis.

TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.1 Aesthetics and Visual Resources			
5.1-1 Development of the proposed project could have a demonstrable negative aesthetic effect that could substantially degrade the existing visual character or quality of the project site and its surroundings.	LS	None required.	NA
5.1-2 The proposed project could create new sources of light and glare that could adversely affect on-site and adjacent uses.	LS	None required.	NA
5.1-3 The proposed project could affect a scenic vista or adopted view corridor.	LS	None required.	NA
5.1-4 The proposed project, in combination with other development in the City of Sacramento, could result in a demonstrable negative aesthetic effect.	LS	None required.	NA
5.1-5 The proposed project, in combination with cumulative development surrounding the project site, could create new sources of light and glare.	LS	None required.	NA
5.2 Agricultural Resources			
5.2-1 Development of the proposed project would affect agricultural resources or operations (e.g., impacts to soils or farmlands, or impacts from incompatible uses).	LS	None required.	NA
5.2-2 Development of the proposed project could result in incompatible land use with adjacent agricultural operations.	S	5.2-2 The project applicant or developer shall provide all future homeowners with a copy of the Right-to-Farm in California included in the California Code of Regulations (CCR), Title 3, Sections 3482.5 and 3482.6 that outline allowable farming and agricultural operations.	LS
5.2-3 The proposed project, in conjunction with future development in the city and county, would affect agricultural resources or operations (e.g., impacts to soils or farmlands, or impacts from incompatible uses).	LS	None required.	NA

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 NA = Not Applicable

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
<p>5.2-4 The proposed project, in conjunction with future development in the city and county, could result in incompatible land use with adjacent agricultural operations.</p>	<p>S</p>	<p>5.2-4 Implement Mitigation Measure 5.2-2.</p>	<p>LS</p>
<p>5.3 Air Quality</p>			
<p>5.3-1 Construction of the proposed project would generate emissions of ozone precursors.</p>	<p>S</p>	<p>5.3-1</p> <p>a) The project shall provide a plan, for approval by the lead agency in consultation with the SMAQMD, demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, would achieve a project wide fleet-average 20% NO_x reduction and 45% particulate reduction compared to the most recent CARB fleet average at time of construction. The SMAQMD shall make the final decision on the emission control technologies to be used by the project construction equipment; however, acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available;</p> <p>b) The project applicant and/or contractor shall submit to SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that shall be used an aggregate of 40 or more hours during any phase of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project applicant and/or contractor shall provide SMAQMD with the anticipated construction timeline, including start date and name and phone number of the project manager and on-site foreman.</p>	<p>LS</p>

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		c) The project applicant and/or contractor shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly by contractor personnel certified to perform opacity readings, and a monthly summary of the visual survey results shall be submitted to the SMAQMD throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. d) Limit vehicle idling time to five minutes or less. e) In consultation with SMAQMD staff, and prior to the issuance of each grading permit, a construction mitigation fee and appropriate SMAQMD administrative fee shall be calculated and paid to the district based on the number of acres to be graded and the equipment to be used during grading activities. Fees shall be calculated using the Carl Moyer cost effectiveness figure of \$16,000 per ton of NO _x plus the 5% administrative fee, or applicable fee in effect at the time the grading permit is issued.	
5.3-2 Construction of the proposed project would generate emissions of particulate matter.	S	5.3-2 a) The project applicant shall limit the project's maximum acreage graded per day to no more than 15 acres or the project applicant shall model the project using a PM modeling program, such as the BEEST or AERMOD models, to determine the full PM impact of the project under the proposed grading acreages. Upon completion of the PM modeling, the results and recommended mitigation measures to reduce PM emissions below SMAQMD thresholds shall be submitted to the City for their approval. If more than 15 acres will be graded per day, dispersion modeling following SMAQMD procedures shall be completed, and mitigation measures	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>shall be approved by the City prior to the issuance of grading permits. In either case, the project applicant shall implement Mitigation Measures 5.3-2(b) through (m) below and other mitigation measures, deemed appropriate, as a result of the PM modeling to reduce local particulate matter concentrations below 50 µg/m³ per day.</p> <ul style="list-style-type: none"> b) All disturbed areas, including storage piles that are not being actively used for construction purposes, shall be covered or watered with sufficient frequency as to maintain soil moistness; c) All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or a chemical stabilizer or suppressant; d) When materials are transported off-site, they shall be covered, effectively wetted to limit visible dust emissions, or maintained with at least 2 feet of freeboard space from the top of the container; e) All operations shall limit or expeditiously remove the accumulation of project-generated mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring; f) Following the addition of materials to, or the removal of materials from, the surfaces of outdoor storage piles, the storage piles shall be effectively stabilized of fugitive dust emissions using sufficient water or a chemical stabilizer or suppressant; g) On-site vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph); h) Wheel washers shall be installed for all trucks and equipment exiting from unpaved areas or wheels shall be washed manually to remove accumulated dirt prior to leaving the site; i) Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1 percent; 	

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		j) Excavation and grading activities shall be suspended when winds exceed 20 mph; and k) The extent of areas simultaneously subject to excavation and grading shall be limited, wherever possible, to the minimum area feasible. l) The text of this measure shall be included in all construction plans and specifications. m) For all future discretionary projects associated with this project, either this measure shall apply, or additional PM analysis shall be required, which may include BEEST modeling if maximum acreage graded per day exceeds the acreage ranges in Table B.1 of the SMAQMD Guide.	
5.3-3 Operation of the proposed project would contribute to emissions of ozone precursors.	S	5.3-3 The project applicant shall implement the emission reduction strategies contained in the Delta Shores Air Quality Management Plan (AQMP). The AQMP shall be endorsed by the SMAQMD prior to the release of the Draft EIR. Documentation confirming implementation of the AQMP shall be provided to the SMAQMD and the City of Sacramento prior to issuance of occupancy permits as required.	SU
5.3-4 The proposed project would increase traffic volumes that, in turn, would contribute to CO concentrations near roadways and intersections.	LS	None required.	NA
5.3-5 Implementation of the proposed project could result in a substantial increase in exposure of sensitive receptors to toxic air contaminants.	LS	None required.	NA
5.3-6 The proposed project could generate objectionable odors or expose on-site sensitive uses to odors from existing odor sources.	LS	None required.	NA
5.3-7 Construction of the proposed project combined with other development in the air basin would increase cumulative levels of ozone precursors.	S	5.3-7 Implement Mitigation Measures 5.3-1(a) through (e).	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.3-8 Construction of the proposed project combined with any other development in the vicinity of the project site would increase cumulative levels of particulate matter.	S	5.3-8 Implement Mitigation Measures 5.3-2(a) through (m).	LS
5.3-9 Operation of the proposed project combined with other on-going development in the air basin would increase cumulative levels of ozone precursors.	S	5.3-9 Implement Mitigation Measure 5.3-3.	SU
5.3-10 The proposed project, in conjunction with other future development in the project vicinity, would contribute to cumulative CO levels.	LS	None required.	NA
5.3-11 The proposed project could contribute to cumulative increases in TACs within the air basin.	LS	None required.	NA
5.4 Biological Resources			
5.4-1 The proposed project would result in the filling or adverse modification of jurisdictional wetlands, non-jurisdictional wetlands, and other "waters of the U.S."	S	5.4-1 a) The project applicant shall, where feasible, preserve the maximum amount of existing wetlands and establish minimum 250-foot buffers around wetlands with listed species or 50-foot buffers around wetlands without listed species (species presence shall be verified as described in Impact 5.4-3 or assumed). Where wetlands are preserved, a Wetland Avoidance Plan (WAP) shall be prepared by a qualified biologist and submitted to the City for review and approval prior to the issuance of grading permits or any groundbreaking activity. The WAP shall include project designs that shall not cause significant changes to the pre-project hydrology, water quality or water quantity in any wetland that is to be retained on site, and shall include maps and provisions for buffers that will prevent construction equipment, debris and sediment from entering wetland features.	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>b) Where avoidance of existing wetlands and drainages is not feasible, then mitigation measures shall be implemented prior to the approval of grading permits or any groundbreaking activity within 250 feet of wetlands for the project-related loss of any existing wetlands, such that there is no net loss of wetland acreage or habitat value. The required distance can be reduced to 50 feet where determinate surveys have shown no special status species within wetland features.</p> <p>c) Prior to the issuance of grading permits by the City for any work within 250 feet of wetlands, the project applicant shall acquire all applicable wetland permits. The required distance can be reduced to 50 feet where determinate surveys have shown no special status species within wetland features. These permits may include, but would not be limited to, a Section 404 Wetlands Fill Permit from the U.S. Army Corp of Engineers, a Section 401 Water Quality Certification from the Regional Water Quality Control Board, and/or a Section 1601 Streambed Alteration Agreement from the California Department of Fish and Game.</p> <p>d) Wetland mitigation shall be developed as a part of the permitting process(es) as described above. Mitigation shall be provided prior to construction related impacts on the existing wetlands. The exact mitigation ratio is variable, based on the type and value of the wetlands affected by the project, but agency standards typically require a minimum of 1:1 for preservation and 1:1 for restoration. In addition, unless other mitigation is required by permitting processes that would provide similar or greater mitigation, a wetland mitigation and monitoring plan shall be developed that includes the following:</p> <ul style="list-style-type: none"> • Descriptions of the wetland types, and their expected functions and values; • Performance standards and monitoring protocol to ensure the success of the mitigation wetlands over a period of five to ten years; • Engineering plans showing the location, size and configuration of wetlands to be created or restored; 	

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<ul style="list-style-type: none"> • An implementation schedule showing that construction of mitigation areas shall commence prior to or concurrently with the initiation of construction; and • A description of legal protection measures for the preserved wetlands (i.e., dedication of fee title, conservation easement, and/or an endowment held by an approved conservation organization, government agency or mitigation bank). 	
<p>5.4-2 Implementation of the proposed project could result in the disturbance of vernal pool fairy shrimp, vernal pool tadpole shrimp, midvalley tadpole shrimp and California linderiella and their habitat.</p>	<p>PS</p>	<p>5.4-2 a) The project applicant, in consultation with the USFWS, shall either (1) conduct surveys for federally listed branchiopods, <u>or</u> (2) assume presence of federally-listed branchiopods in all affected pools where surveys have not been completed. Surveys shall be conducted by qualified biologists in accordance with the most recent USFWS guidelines or protocols to determine the time of year and survey methodology.</p> <p>The survey(s) and subsequent report(s) shall include at a minimum:</p> <ul style="list-style-type: none"> • A complete list of species observed in the vernal pools and seasonal wetlands. • A detailed description of methodology including dates of field visits, the names of survey personnel with resumes and a list of references cited and persons contacted. • Survey results that include at a minimum: <ul style="list-style-type: none"> - A map showing the location(s) of any federally listed branchiopods species identified within the project site. - A detailed description of any identified federally listed branchiopods or populations including information on the density, distribution and habitat quality relative to typical occurrences of the species in question. - A discussion of the importance of the population(s) with consideration of both nearby populations and total species distribution. - An assessment of significance related to project impacts on any federally listed branchiopods populations identified on the project site. 	<p>LS</p>

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>b) If surveys within the project site reveal no occurrences of federally listed branchiopods, no further mitigation would be required. However, if surveys determine that one or more federally listed branchiopod species occur within the project site, or if the project applicant, in consultation with the USFWS, assumes presence of federally-listed branchiopods in all affected pools, the following measures shall be required. The selected measures may be part of the permitting process.</p> <ul style="list-style-type: none"> • For every acre of habitat impacted, at least one wetland creation credit shall be dedicated within a USFWS-approved mitigation bank, or, based on USFWS evaluation of site-specific conservation values, two acres of wetland habitat shall be created and monitored on the project site as approved by the USFWS. • Wetland habitat and associated upland habitat used as on-site mitigation shall be protected from adverse impacts and managed in perpetuity or until the Corps, the applicant, and the USFWS agree on a process to exchange such areas for credits within a USFWS-approved mitigation banking system. • If habitat is avoided (preserved) on site, a USFWS-approved biologist (monitor) shall inspect any construction-related activities at the proposed project site to ensure that no unnecessary take of listed species or destruction of their habitat occurs. The biologist shall have the authority to stop all activities that the biologist deems may result in such a take or destruction until appropriate corrective measures have been completed. The biologist shall also immediately report any unauthorized impacts to the USFWS and the CDFG. • Adequate fencing shall be placed and maintained around any avoided (preserved) wetland habitat to prevent impacts from vehicles. 	

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		<ul style="list-style-type: none"> The project proponent shall conduct Worker Environmental Awareness Program (WEAP) training for construction crews (primarily crew and construction foreman) and City inspectors before construction activities begin. The WEAP shall include a brief review of the special status species and other sensitive resources that could occur in the proposed project site (including their life history and habitat requirements and what portions of the proposed project area they may be found in) and their legal status and protection. The program shall also cover all mitigation measures, environmental permits and proposed project plans, such as the SWPPP, BMPs, erosion control and sediment plan, and any other required plans. During WEAP training, construction personnel shall be informed of the importance of avoiding ground-disturbing activities outside of the designated work area. The designated biological monitor shall be responsible for ensuring that construction personnel adhere to the guidelines and restrictions. WEAP training sessions shall be conducted as needed for new personnel brought onto the job during the construction period. The project proponent shall ensure that activities that are inconsistent with the maintenance of the suitability of remaining wetland habitat and associated watershed on-site are prohibited. 	
<p>5.4-3 Development of the proposed project could result in the loss of foraging habitat for Swainson's hawk and other raptors.</p>	<p>PS</p>	<p>5.4-3 Prior to the issuance of grading permits, the project applicant shall preserve an equal amount of suitable raptor foraging habitat, at a 1:1 ratio, or a ratio acceptable to CDFG.¹ Suitable foraging habitat includes alfalfa or other low growing row crops. Preservation could occur through the purchase of conservation easements or fee title of lands with suitable foraging habitat. Land and easements shall be approved by the City in consultation with CDFG.</p>	<p>LS</p>

¹ California Department of Fish and Game, Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsonii*) in the Central Valley of California, November 8, 1994.

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<p>5.4-4 Implementation of the proposed project could result in the disturbance of nesting habitat for birds protected by the MBTA.</p>	<p>PS</p>	<p>5.4-4</p> <p>a) Between March 1 and August 1, the project applicant or developer(s) shall have a qualified biologist conduct nest surveys within 30 days prior to any demolition/construction or ground disturbing activities that are within 500 feet of potential nest trees. A pre-construction survey shall be submitted to CDFG and the City of Sacramento that includes, at a minimum: (1) a description of the methodology including dates of field visits, the names of survey personnel with resumes, and a list of references cited and persons contacted; and (2) a map showing the location(s) of raptor and migratory bird nests observed on the project site. If no active nests of MBTA, CDFG or USFWS covered species are identified then no further mitigation is required.</p> <p>b) Should active nests of protected bird species be identified in the survey conducted in accordance with Mitigation Measure 5.4-4(a), the applicant, or developer(s), in consultation with the City of Sacramento and CDFG, shall delay construction in the vicinity of active nest sites during the breeding season (March 1 through August 1) while the nest is occupied with adults and/or young. A qualified biologist shall monitor any occupied nest to determine when the nest is no longer used. If the construction cannot be delayed, avoidance shall include the establishment of a non-disturbance buffer zone around the nest site. The size of the buffer zone shall be determined in consultation with the CDFG, but will be a minimum of 100 feet. The buffer zone shall be delineated with highly visible temporary construction fencing.</p> <p>c) No intensive disturbance (e.g., heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project-related activities that could cause nest abandonment or forced fledging, shall be initiated within the established buffer zone of an active nest between March 1 and August 1.</p>	<p>LS</p>

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		d) If demolition/construction activities are unavoidable within the buffer zone, the project applicant shall retain a qualified biologist to monitor the nest site to determine if construction activities are disturbing the adult or young birds. If abandonment occurs the biologist shall consult with CDFG or USFWS for the appropriate salvage measures. This could include taking any nestlings to a local wildlife rehabilitation center.	
5.4-5 Implementation of the proposed project could result in the disturbance of nesting habitat for Swainson's hawks.	PS	5.4-5 a) Prior to any demolition/construction activities that occur between March 1 and September 15 the applicant or developer(s) shall have a qualified biologist conduct surveys for nesting migratory birds on the project site and within a quarter mile ² of demolition/construction activities. Surveys shall be conducted no more than 30 days prior to the start of any demolition or construction activities. If no active nests are identified on or within a quarter mile of construction activities, a letter report summarizing the survey results shall be sent to the City of Sacramento and no further mitigation is required. b) If active nests are found, measures that will avoid impacts to nesting migratory birds, including measures consistent with the CDFG Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California ³ shall be implemented as follows: 1. Nest trees shall not be removed unless there is no feasible way of avoiding their removal. 2. If there is no feasible alternative to removing a nest tree, a Management Authorization (including conditions to offset the loss of the nest tree) shall be obtained from CDFG with the tree removal period (generally between October 1 and February 1) to be specified in the Management Authorization.	LS

2 Swainson's Hawk Technical Advisory Committee. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, May 31, 2000.
3 California Department of Fish and Game, *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo Swainsoni) in the Central Valley of California*, 1994.

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		<p>3. No intensive disturbances (e.g., heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project-related activities that could cause nest abandonment or forced fledging, shall be initiated within 1,320 feet (¼ mile) or less, as determined by CDFG, (buffer zone as defined in the CDFG Staff Report) of an active Swainson's hawk nest or 500 feet for other nesting migratory birds, between March 1 and September 15 or until August 15 if a Management Authorization or Biological Opinion is obtained from CDFG for the project. The buffer zone may be reduced in consultation with CDFG.</p> <p>4. If demolition/construction activities are unavoidable and are allowed by CDFG within the buffer zone, the project applicant or developer(s) shall retain a qualified biologist to monitor the nest to determine if abandonment occurs. If the nest is abandoned and the nestlings are still alive, the project proponent shall retain the services of a qualified biologist to reintroduce the nestling(s) (recovery and hacking). Prior to implementing, any hacking plan shall be reviewed and approved by the Environmental Services Division and Wildlife Management Division of the CDFG. The CDFG may allow reduction of the recommended buffers, if a qualified biologist is retained for on-site nest observations.</p>	

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<p>5.4-6 Development of the proposed project could result in the loss of active burrowing owl nest burrows.</p>	<p>S</p>	<p>5.4-6</p> <p>a) Prior to the issuance of grading permits, the project applicant shall retain a qualified biologist to conduct a pre-construction burrowing owl survey. If no suitable burrows are found, no further mitigation is required. If suitable burrows are found, but no owls are found, all burrows shall be hand-excavated and collapsed prior to project construction. If nesting owls are found, no disturbance shall be allowed within 160-feet of the active nest burrow between February 1 and August 31. Outside the nesting season, and/or upon confirmation by the qualified biologist, and in consultation with CDFG, that all young have fledged and left an active nest, burrowing owls present in the burrow shall be excluded from the burrow(s) by a qualified biologist through a passive relocation as outlined in the California Burrowing Owl Consortium's April 1993 Burrowing Owl Survey Protocol and Mitigation Guidelines. Once the burrows have been cleared, they must be hand-excavated and collapsed prior to project construction.</p> <p>b) To offset the loss of foraging and burrow habitat on the project site, a minimum of 6.5 acres of foraging habitat (calculated on a 100 m [approx. 300 ft.] foraging radius around the burrow) per pair or unpaired resident bird, shall be acquired and permanently protected. The protected lands shall be adjacent to occupied burrowing owl habitat and at a location acceptable to the CDFG. Protection of additional habitat acreage per pair or unpaired resident bird may be applicable in some instances. The project proponent shall provide funding for long-term management and monitoring of the protected lands. The monitoring plan shall include success criteria, remedial measures, and an annual report to the Department. This mitigation could overlap with mitigation requirements for Swainson's hawk foraging habitat as deemed appropriate by CDFG.</p>	<p>LS</p>

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		c) If destruction of occupied burrows is unavoidable, the project applicant shall coordinate with CDFG to identify existing suitable burrows located on the protected lands site to be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1	
5.4-7 Development of the proposed project could result in the loss of habitat or potential disturbance of valley elderberry longhorn beetle (VELB).	PS	5.4-7 a) The proposed project shall be designed to avoid ground disturbance within 100 feet of the dripline of elderberry shrubs identified in the ECORP VELB Surveys as having stems greater than or equal to one inch in diameter. The 100 foot buffer could be adjusted in consultation with the USFWS. If avoidance is achieved, a letter report confirming avoidance shall be sent to the City of Sacramento and no further mitigation is required. b) If disturbance within 100 feet of the dripline of the elderberry shrub with stems greater than or equal to one inch in diameter is unavoidable, then the project applicant shall retain the services of a qualified biologist to develop a formal VELB mitigation plan in accordance with the most current USFWS mitigation guidelines for unavoidable take of VELB habitat pursuant to either Section 7 or Section 10(a) of the Federal Endangered Species Act. Prior to implementation by the applicant the mitigation plan shall be reviewed and approved by the USFWS. c) If the VELB is delisted by the USFWS prior to the initiation of any ground disturbing, demolition, or construction activities, the project applicant shall proceed consistent with any requirements that accompany the VELB delisting notice.	LS

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<p>5.4-8 Development of the proposed project would include removal of trees that could be protected by the City of Sacramento Tree Preservation Ordinance.</p>	<p>S</p>	<p>5.4-8</p> <p>a) Prior to issuance of any grading permits or any groundbreaking activity, whichever comes first, the applicant shall submit all grading and trenching plans to the Urban Forest Services' (UFS) City Arborist for review to ensure protection of Heritage trees located on site. Along with this plan, a supplemental survey of trees that may be impacted by construction shall be conducted and a report shall be submitted. This survey report shall include the dbh of all potentially impacted trees, which shall be verified by the City Arborist. The City Arborist will provide written verification and additional protection measures not available at this time to the City's Development Services Department prior to issuance of the grading permit.</p> <p>b) Heritage trees identified by the City Arborist, both on- and off-site, are recommended for preservation to the extent feasible without substantially altering the project site plan. If trees should require removal, the applicant/developer shall obtain authorization through a tree removal permit from the City Urban Forest Services. The project applicant/developer shall coordinate with the City of Sacramento Urban Forest Services Division to identify any trees able to be preserved. If trees are identified for preservation, the applicant/developer shall coordinate with the Urban Forest Services Division in preparation of a preservation plan for any and all trees identified for preservation. The preservation plan shall include, but not be limited to the following measures 5.4-8(b)(i) thru 5.4-8(b)(xi) to prevent impacts to the trees during construction of the proposed project:</p>	<p>LS</p>

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<ul style="list-style-type: none"> i. A 6' high cyclone fence shall be installed around each tree at a distance determined adequate by the City Arborist to protect trees from damage. This fencing will define the construction exclusion zone (CEZ) and no vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the CEZ of protected trees. A laminated sign indicating such shall be attached to fencing surrounding trees on-site. Fencing shall be shown on all construction and preservation plans and shall be installed prior to any construction activities. The appropriate CEZ distances for trees 173, 186, 109, 110 and 112 were previously determined by the City Arborist. Tree 173 will require a 20.5' CEZ, tree 186 will require a 17.5' CEZ, tree 109 will require a 16.0' CEZ, tree 110 will require a 19.0' CEZ and tree 112 will require a 23.5' CEZ, if they are able to be preserved. ii. Prior to any pruning of heritage trees, the applicant or contractor shall obtain a heritage tree pruning permit from UFS (808-6345). Any required pruning shall be performed by an International Society of Arboriculture (ISA) certified arborist. The contractor shall contact the City Arborist for a root inspection(s) for trenching activities within the dripline(s) of trees to be saved. iii. If during excavation for the project, tree roots greater than two inches in diameter are encountered, work shall stop immediately until the City Arborist can perform an on site inspection. All roots shall be cut clean and the tree affected may require supplemental irrigation/fertilization and pruning as a result of the root cutting. The contractor will be responsible for any costs incurred. Depending upon the amount of roots encountered and the time of year, wet burlap may be required along the sides of the trench. 	

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		<ul style="list-style-type: none"> iv. The contractor shall be held liable for any damage to existing trees, i.e. trunk wounds, broken limbs, pouring of any deleterious materials, or concrete washout under the dripline of the trees. Damages will be assessed using the "Guide to Plant Appraisal" eighth edition, published by the International Society of Arboriculture. An appraisal report shall be submitted for review by the City Arborist. v. Drainage patterns on the site shall not be modified so that water collects or stands within 8 feet of the trunk of any Heritage tree that is to be preserved. vi. No lawn irrigation system shall be installed within 8 feet of the trunk of any Heritage tree that is to be preserved unless otherwise approved by Urban Forest Services. vii. No planting of landscaping within 6 feet of the trunk of any Heritage tree that is to be preserved unless otherwise approved by Urban Forest Services. viii. No trenching activity within 8 feet of the trunk of any Heritage tree that is to be preserved unless otherwise approved by Urban Forest Services. ix. No grading activity within 8 feet of the trunk of any Heritage tree that is to be preserved unless otherwise approved by Urban Forest Services. In the absence of an approved grading plan, the applicant/developer shall agree to mitigate for the loss of any Heritage tree that the City Arborist determines has been irreparably damaged by grading or other construction activity. x. No impervious surfaces shall be allowed within 8 feet of the trunk of any Heritage tree that is to be preserved unless otherwise approved by Urban Forest Services. xi. City Ordinances 12.56.060 (Protection of trees), 12.64.040 (Protection of Heritage trees during construction activities), and 12.64.050 (Maintenance responsibility – Permits for activities affecting Heritage trees) must be followed at all phases of construction. 	

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		<p>Tree protection methods noted above shall be identified on all construction plans for the project.</p> <p>c) If Heritage Trees 173, 186, 109, 110 and 112, or any other heritage trees are unable to be preserved, prior to removal of these trees, the project applicant/developer shall coordinate with City of Sacramento Urban Forest Services Division to obtain the necessary permits for removal of the trees in accordance with the Heritage Tree Ordinance (City Code 12.64). All trees that fall under this category shall have a supplemental survey report prepared, as specified in mitigation measure 5.4-8(a). All heritage trees removed shall be mitigated. Mitigation for removed trees can be carried out on site through the planting and care of young trees as specified by the City Arborist, or through the payment of in lieu fees to the City of Sacramento Urban Forest Services Division at the currently accepted rate. If in lieu fees are paid, verification of payment shall be provided to the Development Services Department. These fees would be used to provide planting and care of replacement trees. If the applicant can provide on-site mitigation, planting will be subject to the following City of Sacramento Urban Forest Services conditions:</p> <ul style="list-style-type: none"> • preparation of a tree mitigation planting plan prepared for review and approval by Urban Forest Services which shall include the following minimum elements: <ol style="list-style-type: none"> 1) Species, size, and locations of all replacement plantings (the plan shall provide adequate planter and canopy space for trees to grow to maturity). 2) Method of irrigation. 3) A tree planting detail. 4) Planting, irrigation, and maintenance schedules. 5) Identification of the maintenance entity and a written agreement with that entity to provide care and irrigation of the trees. • Inspection of nursery stock (prior to planting) by Urban Forest Services • Post-planting inspection by Urban Forest Services. 	

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<p>5.4-9 Construction of the proposed project could adversely affect special-status bats.</p>	<p>PS</p>	<p>5.4-9</p> <p>a) Prior to demolition and tree removal activities, the project applicant or developer(s) shall retain a qualified biologist to conduct a focused survey for bats and potential roosting sites within the project site. If no roosting sites or bats are found within the project site, a letter report confirming absence shall be sent to the City of Sacramento and no further mitigation is required.</p> <p>b) If bats are found roosting at the site outside of nursery season (May 1st through October 1st), then they shall be evicted as described under (c) below. If bats are found roosting during the nursery or maternity season, then they shall be monitored to determine if the roost site is a maternal roost. This could occur by either visual inspection of the roost bat pups, if possible, or monitoring the roost after the adults leave for the night to listen for bat pups. If the roost is determined to not be a maternal roost, then the bats shall be evicted as described under (c). Because bat pups cannot leave the roost until they are mature enough, eviction of a maternal roost cannot occur during the nursery season. A 250-foot (or as determined in consultation with CDFG) buffer zone shall be established around the roosting site within which no construction shall occur.</p> <p>c) Eviction of bats shall, as specified above, be conducted using bat exclusion techniques, developed by Bat Conservation International (BCI) and in consultation with CDFG, that allow the bats to exit the roosting site but prevent re-entry to the site. This would include but not be limited to the installation of one way exclusion devices. The devices shall remain in place for seven days and then the exclusion points and any other potential entrances shall be sealed. This work shall be completed by a Bat Conservation International recommended exclusion professional.</p>	<p>LS</p>
<p>5.4-10 Development of the proposed project would not result in the loss of individual giant garter snakes and their upland habitat.</p>	<p>LS</p>	<p>None required.</p>	<p>NA</p>

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5.4-11 The proposed project, in combination with buildout of the City's General Plan and regional buildout assumed in the Sacramento Valley, could result in a regional loss of state and/or federally protected wetlands and wetland species.	S	5.4-11 Implement Mitigation Measure 5.4-1.	LS
5.4-12 The proposed project, in combination with buildout of the City's General Plan and regional buildout assumed in the Sacramento Valley, could result in a regional loss of Swainson's hawk foraging habitat and other protected raptors.	S	5.4-12 Implement Mitigation Measure 5.4-3.	LS
5.4-13 The proposed project, in combination with other construction in the City and region, could result in the regional loss and/or disturbance of protected nesting avian species, including Swainson's hawks and other protected raptors.	LS	None required.	NA
5.4-14 The proposed project, in combination with buildout of the City's General Plan, could result in the regional loss and/or disturbance of burrowing owls and their habitat.	S	5.4-14 Implement Mitigation Measure 5.4-5.	LS
5.4-15 The proposed project, in combination with buildout of the City's General Plan and regional buildout assumed in the Sacramento Valley, could result in the regional loss and/or disturbance of VELB and its habitat.	PS	5.4-15 Implement Mitigation Measure 5.4-6(a) through (d).	LS
5.4-16 The proposed project, in combination with buildout of the City's General Plan, could result in the regional loss and/or disturbance of protected bats and their habitat.	PS	5.4-16 Implement Mitigation Measure 5.4-8.	LS
5.5 Hydrology and Water Quality			
5.5-1 Construction and operation of the proposed project could result in the degradation of water quality in local and regional receiving waters.	LS	None required	NA

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5.5-2 Implementation of the proposed project would result in an increase in the rate and amount of stormwater runoff that could exceed the capacity of the existing stormwater collection infrastructure.	LS	None required	NA
5.5-3 Implementation of the proposed project could expose people or property to risk of flooding from failure of a levee.	LS	None required	NA
5.5-4 Implementation of the proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or lowering of the local groundwater table level.	LS	None required	NA
5.5-5 Implementation of the proposed project, in combination with other development within the City, could result in an increase in the rate and amount of surface and/or stormwater runoff discharged to the City's drainage system, which could result in localized flooding.	LS	None required	NA
5.5-6 The proposed project, in combination with other development in the City, could result in the increased discharge of stormwater runoff containing urban pollutants, to local waterways which could adversely affect surface water quality in the lower Sacramento River watershed.	LS	None required	NA
5.5-7 The proposed project, in addition to development within the City, could expose people or property to risk of flooding from failure of a levee.	LS	None required	NA

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5.6 Noise			
<p>5.6-1 Construction of the proposed project could temporarily expose existing sensitive receptors to increased noise levels.</p>	S	<p>5.6-1 The project contractor(s) shall ensure that the following measures are implemented during all phases of project construction:</p> <p>a) Whenever construction occurs on parcels adjacent to existing off-site residential neighborhoods or schools or, when it occurs during later project stages on parcels near residential and other noise-sensitive uses built on-site during earlier project stages, temporary barriers shall be constructed around the construction sites to shield the ground floor and lower stories of the noise-sensitive uses. These barriers shall be of ¾-inch Medium Density Overlay (MDO) plywood sheeting, or other material of equivalent utility and appearance, and shall achieve a Sound Transmission Class of STC-30, or greater, based on certified sound transmission loss data taken according to ASTM Test Method E90. The barrier shall not contain any gaps at its base or face, except for site access and surveying openings. The barrier height shall be designed to break the line-of-sight and provide at least a 5 dBA insertion loss between the noise producing equipment and the upper-most story of the adjacent noise-sensitive uses. If, for practical reasons, which are subject to the review and approval of the City, a barrier cannot be built to provide noise relief to the upper stories of nearby noise-sensitive uses, then it must be built to the tallest feasible height.</p> <p>b) Construction activities shall comply with the City of Sacramento Noise Ordinance, which limits such activity to the hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday, the hours of 9:00 a.m. to 6:00 p.m. on Sunday, prohibits nighttime construction, and requires the use of exhaust and intake silencers for construction equipment engines.</p>	LS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		c) Construction equipment staging areas shall be located as far as possible from residential areas while still serving the needs of construction contractor(s). Prior to the approval of all construction related permits, including grading permits, improvement plans, and building permits, a plan shall be submitted for approval to the City showing the proposed location of all staging areas. This plan may be included with grading permit, improvement plan, and building permit submittals (i.e., it may be included in improvement plans) and can be reviewed and approved concurrently with permits. d) High noise activities, such as jackhammers, drills, impact wrenches and other generators of sporadic high noise peaks, shall be restricted to the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, unless it can be proved to the satisfaction of the City that the allowance of Saturday work on certain onsite parcels (i.e., those as far from noise-sensitive uses as possible) would not adversely affect nearby noise-sensitive receptors. Prior to any such work outside of the specified hours, the applicant shall obtain written approval from the City.	
5.6-2 Ground-borne vibration from construction activity could cause structural damage to nearby buildings.	LS	None required.	NA
5.6-3 Operation of the proposed project could permanently expose sensitive receptors to increased traffic noise levels from local roadways.	PS	5.6-3 At the time of building permits, the project applicant or developer shall be required to comply with the City's adopted General Plan policies that pertain to acceptable noise levels. This may require construction of a soundwall, if appropriate and feasible given the exposure circumstances of the residence(s) along 24 th Street, to minimize traffic noise.	SU

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
<p>5.6-4 Operation of the proposed project could permanently expose sensitive receptors to increased traffic noise levels from Interstate 5.</p>	<p>S</p>	<p>5.6-4 The project applicant shall have a certified acoustical professional prepare a site-specific analysis for all residential uses fronting both sides of I-5 that details how exterior noise levels would achieve exterior noise levels less than 65 dB L_{dn} and interior noise levels less than 45 dB L_{dn}. The results of the analysis shall be submitted to the City of Sacramento for review and approval and appropriate recommended noise reduction measures/design features shall be incorporated into project design. Noise reduction measures/design features shall include, but are not limited to the following:</p> <ul style="list-style-type: none"> a) Prior to final design review, all low-density and medium-density residences west of I-5 and medium-density residential residences east of I-5 (in the 8.62-acre parcel adjacent to I-5) shall be designed and constructed to Title 24 standards which specify that interior noise levels attributable to exterior sources shall not exceed 45 dBA L_{dn} in any habitable room of new dwellings. b) Prior to issuance of occupancy permits, the project applicant shall construct a sound wall west of the southbound lane of traffic along I-5 with a minimum height of 15 feet, that is capable of reducing exterior noise levels below 65 dB L_{dn} outside the closest residential units. The project applicant shall also construct a sound wall for residences proposed north of the interchange (in the 8.62-acre parcel adjacent to I-5) along the east side of the northbound lane of I-5 with a minimum height of 15 feet that is capable of reducing exterior noise levels below 65 dB L_{dn} outside the closest residential units. 	<p>LS</p>
<p>5.6-5 Operation of the proposed project could permanently expose sensitive receptors on the project site to increased noise produced by both on-site and off-site stationary and mobile sources.</p>	<p>S</p>	<p>5.6-5</p> <ul style="list-style-type: none"> a) Prior to the issuance of building permits, the applicant shall submit engineering and acoustical specification for project mechanical HVAC equipment to the Planning Director (or their designee) demonstrating that the equipment design (types, location, enclosure, specifications) would control noise from the equipment to at least 10 dBA below existing ambient noise levels at nearby residential and other noise-sensitive land uses. 	<p>LS</p>

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>b) Garbage storage containers and retail/commercial building loading docks shall be placed to allow adequate separation to shield adjacent residential or other noise-sensitive uses. If the placement of garbage storage containers or loading docks away from adjacent noise-sensitive uses is not feasible, these noise-generating areas shall be enclosed or acoustically shielded to reduce noise-related impacts to these noise-sensitive uses. The location of garbage storage containers and loading docks shall be shown on building plans reviewed by the City. If these noise-generating structures will be located near sensitive uses, a plan shall be submitted to the City for review and approval, demonstrating adequate acoustical shielding to reduce noise-related impacts to an appropriate level.</p> <p>c) Noise generating stationary equipment associated with proposed commercial and/or office uses, including portable generators, compressors, and compactors shall be enclosed or acoustically shielded to reduce noise-related impacts to noise-sensitive residential uses. Such shielding shall be detailed in all plans submitted to the City for approval which include these equipment types.</p> <p>d) Prior to tentative map approval, the project applicant shall have a certified acoustical professional prepare a site-specific analysis for residential uses adjacent to the Sacramento Job Corps facility that details how exterior noise levels would achieve exterior noise levels less than 65 dB L_{dn} and an interior noise level of less than 45 dB L_{dn}. The results of the analysis shall be submitted to the City of Sacramento for review and approval and appropriate recommended noise reduction measures/ design features shall be incorporated into project design and be printed on all construction documents. Noise reduction measures/design features shall include, but are not limited to the following:</p>	

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<ul style="list-style-type: none"> • All residences immediately west of the Sacramento Job Corps facility shall be designed and constructed to Title 24 standards which specify that interior noise levels attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room of new dwellings. • The project applicant shall construct a rear-yard sound wall of adequate height and building specifications, as determined by the acoustical professional, between residential uses located adjacent to the Sacramento Job Corps facility that would reduce exterior noise levels to less than 65 dB L_{dn} and interior noise levels to less than 45 dB L_{dn}. • All prospective buyers shall be informed of the operational activities that occur at the Sacramento Job Corps facility site and the noise levels associated with those activities. All residential contracts shall include a disclosure statement that a purchaser, lessee, or transferee signs at the time of sale, purchase, contract of sale, transfer, or lease of real property. 	
<p>5.6-6 Traffic generated by the proposed project, in conjunction with traffic from planned future development in other surrounding areas of the City and County, could permanently expose sensitive receptors to increased cumulative noise levels from local roadways.</p>	<p>LS</p>	<p>None required</p>	<p>NA</p>
<p>5.6-7 Traffic generated by the proposed project, in conjunction with traffic from planned future development in other surrounding areas of the City and County, could permanently expose sensitive receptors to increased cumulative noise levels from Interstate 5.</p>	<p>LS</p>	<p>5.6-7 Implement Mitigation Measure 5.6-4.</p>	<p>NA</p>

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.7 Public Services			
5.7-1 The proposed project could result in the construction of new, or expansion of existing, police facilities, which could result in adverse environmental impacts.	PS	5.7-1 Prior to the issuance of building permits, the project developer shall enter into a funding agreement with the City of Sacramento Department of Development Services to pay its fair share contribution toward the development of the Sacramento Police Department's new Meadowview Area facility. The fair share contribution for the proposed project has been determined to be \$1,182,000.00, per the City. Implementation of this funding agreement shall be monitored by the City's Planning Department.	LS
5.7-2 The proposed project, in combination with other development in the city, could result in the construction of new, or expansion of existing police facilities, which could result in adverse environmental impacts.	S	5.7-2 Implement Mitigation Measure 5.7-1.	LS
5.7-3 The proposed project could result in the construction of new, or expansion of existing fire facilities, which could result in adverse environmental impacts.	LS	None required.	NA
5.7-4 The proposed project, in combination with other development in the southern portion of the city, could result in the construction of new, or expansion of existing fire facilities, which could result in adverse environmental impacts.	LS	None required	NA
5.7-5 The proposed project would result in the construction of new, or expansion of existing school facilities, which could result in adverse environmental impacts.	LS	None required	NA
5.7-6 The proposed project could contribute to the cumulative need for the construction of new, or expansion of existing, school facilities within the SCUSD service area. The construction or expansion of these facilities could result in adverse environmental impacts.	LS	None required	NA

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.7-7 The proposed project would increase the demand for parks at the project site and in the project vicinity, which could result in the need for additional parks and park facilities, the construction of which could result in adverse environmental impacts.	LS	None required	NA
5.7-8 The proposed project, in combination with other development projects in the Airport/Meadowview Planning Area, would increase the demand for parks, which could result in the need for additional parks and park facilities, the construction of which could result in adverse environmental impacts.	LS	None required	NA
5.7-9 The proposed project could result in the construction of new, or expansion of existing, solid waste facilities, which could result in adverse environmental impacts.	LS	None required	NA
5.7-10 Solid waste generated by the proposed project, in combination with other development in the city, could exceed landfill capacity.	LS	None required	NA
5.8 Public Utilities			
5.8-1 The proposed project would increase wastewater flows that could exceed treatment capacity at the SRWTP and/or wastewater collection infrastructure.	LS	None required	NA
5.8-2 The proposed project, in combination with other development within the SRWTP service area, could increase wastewater flows that could exceed treatment capacity at the SRWTP and/or wastewater collection infrastructure.	LS	None required	NA
5.8-3 The proposed project's demand for potable water could exceed available sources of water supply.	LS	None required	NA

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.8-4 The proposed project could require the construction of new water supply treatment and/or distribution utilities or the expansion of existing treated water and water distribution systems.	LS	None required	NA
5.8-5 The proposed project could contribute to cumulative increases in water demand throughout the city.	LS	None required	NA
5.8-6 The proposed project would contribute to cumulative increases in the need for water supply treatment and/or distribution facilities.	LS	None required	NA
5.8-7 The proposed project would increase the demand for electricity that could require the construction of new electrical production or transmission facilities.	LS	None required	NA
5.8-8 The proposed project would increase the demand for natural gas that could require the construction of new gas production or transmission facilities.	LS	None required	NA
5.8-9 The proposed project, in combination with other development in the city of Sacramento, could exceed the electrical or natural gas supply and transmission capabilities.	LS	None required	NA
5.9 Transportation and Circulation			
5.9-1 Implementation of the proposed project would result in an increase in traffic levels.	S	5.9-1 The project applicant shall be required to develop the Delta Shores Finance Plan for review and approval by the City before project approval. The plan shall identify the financing mechanisms for all feasible transportation improvements defined as mitigation measures including, but not limited to, new roadways, roadway widening, traffic signals and public transit. The project applicant shall coordinate preparation of the finance plan with the City of Sacramento. All mitigation measures with "fair share" contributions would be implemented through the proposed financing mechanisms(s) indicated in the finance plan or by some other mechanism as determined by the City of Sacramento. The City shall adopt the Delta Shores Finance Plan at the time the project is considered for approval.	LS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.9-2 Implementation of the proposed project under Near-Term plus Pre-Interchange Scenario would affect the Meadowview Road/Freeport Boulevard intersection.	S	5.9-2 The project applicant shall construct an exclusive eastbound right turn lane at the intersection of Meadowview Road/Freeport Boulevard. This improvement has to be in place at the time when building permits for 200 dwelling units have been issued.	LS
5.9-3 Implementation of the proposed project under Near-Term plus Pre-Interchange Scenario could affect existing transit operations.	S	5.9-3 The project applicant shall coordinate with Regional Transit to provide transit facilities to serve the project area. The project applicant, in coordination with Regional Transit, shall also identify the specific locations of sheltered transit stops with bus turnouts. The City of Sacramento Development Engineering Division, working in conjunction with Regional Transit, shall approve the location, design, and implementation timing of the sheltered transit stops and bus turnouts prior to the issuance of building permits. Construction of these on-site bus stop facilities shall be phased consistent with the phased development of the project. Once demand for public transit services reaches 50 service requests, the project applicant shall work with Regional Transit to begin to provide transit services and shall increase those services in proportion to the development levels and increased rider ship levels occurring on the project site. Final design and operation of the transit service will be subject to the approval of the City and other proposed operating agencies (e.g., RT).	LS
5.9-4 Implementation of the proposed project under Near-Term plus Pre-Interchange Scenario could affect existing bicycle or pedestrian facilities.	LS	None required	NA
5.9-5 Under Near-Term plus Pre-Interchange Scenario project construction could increase construction-related traffic on existing roadways.	S	5.9-5 Before issuance of grading permits for the project site, the project applicant shall prepare a detailed Traffic Management Plan that would be subject to review and approval by the City Department of Transportation, Caltrans, and local emergency service providers including the City of Sacramento fire and police departments. The plan shall ensure that acceptable operating conditions on local roadways and freeway facilities are maintained. At a minimum, the plan shall include:	LS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<ul style="list-style-type: none"> • The number of truck trips, time, and day of street closures • Time of day of arrival and departure of trucks • Limitations on the size and type of trucks, provision of a staging area with a limitation on the number of trucks that can be waiting • Provision of a truck circulation pattern • Provision of driveway access plan so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas) • Maintain safe and efficient access routes for emergency vehicles • Manual traffic control when necessary • Proper advance warning and posted signage concerning street closures • Provisions for pedestrian safety • A copy of the construction traffic management plan shall be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct roadways. 	
<p>5.9-6 Implementation of the project under Baseline plus Project conditions could affect the Meadowview Road/Freeport Boulevard intersection.</p>	<p>S</p>	<p>5.9-6 The project applicant shall construct an exclusive southbound right turn lane at the intersection of Meadowview Road/Freeport Boulevard before completion of development that would generate 80 percent of the PM peak hour project traffic, assuming construction of the I-5/Cosumnes River Boulevard interchange and the Cosumnes River Boulevard Extension west to Freeport Boulevard.</p>	<p>LS</p>
<p>5.9-7 Implementation of the project under Baseline plus Project conditions could affect the Meadowview Road/24th Street intersection.</p>	<p>S</p>	<p>5.9-7 A second exclusive southbound left-turn lane shall be constructed and retiming of the traffic signal shall be completed to provide an overlap phase for the northbound right-turn/eastbound left-turn movements.</p>	<p>SU</p>

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.9-8 Under Baseline Plus Project conditions, the Meadowview Road/Manorside Drive intersection may exceed the peak hour traffic signal warrant.	S	5.9-8 The project applicant shall install a traffic signal at the Meadowview Road/Manorside Drive intersection before completion of development that would generate 70 percent of the PM peak hour project traffic, assuming construction of the I-5/Cosumnes River Boulevard interchange and the Cosumnes River Boulevard Extension west to Freeport Boulevard.	LS
5.9-9 Under Baseline Plus Project conditions, the project would have a significant impact on freeway operations.	S	5.9-9 The project applicant shall be required to pay a fair share development impact fee towards the I-5/Cosumnes River Boulevard interchange project, as well as the I-5 corridor impact fee that is in effect at the time of issuance of building permits.	SU
5.9-10 Under Baseline Plus Project conditions, the project would have a significant impact on existing transit operations.	S	5.9-10 The project applicant shall coordinate with Regional Transit to provide transit facilities to serve the project area. This may include but not limited to, creating new bus routes or/ add rerouting existing bus services through the project area to connect the project site with the future light rail station at Morrison Creek or to Meadowview station or to downtown Sacramento. The project applicant, in coordination with Regional Transit, shall also identify the specific locations of sheltered transit stops with bus turnouts. The City of Sacramento Development Engineering Division, working in conjunction with Regional Transit, shall approve the location, design, and implementation timing of the sheltered transit stops and bus turnouts prior to the issuance of building permits. Construction of these on-site bus stop facilities shall be phased consistent with the phased development of the project. Once demand for public transit services reaches 50 service requests, the project applicant shall coordinate to begin to provide transit services and shall increase those services in proportion to the development levels and increased rider ship levels occurring on the project site. Final design and operation of the transit service would be subject to the approval of the City and other proposed operating agencies (e.g., RT).	LS
5.9-11 Under Baseline Plus Project conditions, the project would not adversely affect existing bicycle or pedestrian facilities.	LS	None required	NA

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.9-12 Under Baseline Plus Project conditions, the proposed project would have a significant impact on existing roadways based on the routing of construction traffic.	S	5.9-12 Implement Mitigation Measure 5.9-5.	LS
5.9-13 Under Cumulative plus Project conditions the segment of Cosumnes River Boulevard from I-5 to Delta Shores Circle could be impacted by the project.	S	5.9-13 The project applicant shall widen Cosumnes River Boulevard, between I-5 and Delta Shores Circle (west), to eight lanes.	SU
5.9-14 Under Cumulative plus Project conditions the segment of Detroit Boulevard south of Meadowview Road could be impacted by the project.	S	No feasible mitigation available	SU
5.9-15 Under Cumulative plus Project conditions the Meadowview Road/Freeport Boulevard intersection could be impacted by the project.	S	5.9-15 The project applicant shall pay a fair share towards the addition of a second exclusive southbound left turn lane, an exclusive southbound right turn lane, and shall pay a fair share to recover costs for the City's Traffic Operations Center monitoring and retiming of modifications to the traffic signal to provide an overlap phase for the southbound right turn/eastbound left turn movements at the intersection of Meadowview Road/Freeport Boulevard.	LS
5.9-16 Under Cumulative plus Project conditions the Meadowview Road/24 th Street intersection could be impacted by the project.	S	No feasible mitigation available	SU
5.9-17 Under Cumulative plus Project conditions the Mack Road/Franklin Boulevard intersection could be impacted by the project.	S	5.9-17 The project applicant shall pay a fair share to recover costs for the City's Traffic Operations Center monitoring and retiming of the traffic signal to provide an overlap phase for the eastbound right-turn/northbound left-turn movements at the intersection of Mack Road/Franklin Boulevard.	LS
5.9-18 Under Cumulative plus Project conditions the Cosumnes River Boulevard/Franklin Boulevard intersection could be impacted by the project.	S	5.9-18 The project applicant shall pay a fair share towards the addition of a second exclusive northbound left-turn lane at the intersection of Cosumnes River Boulevard/Franklin Boulevard.	LS
5.9-19 Under Cumulative plus Project conditions the Cosumnes River Boulevard/Freeport Boulevard intersection could be impacted by the project.	S	5.9-19 The project applicant shall pay a fair contribution toward the construction of the Cosumnes River Boulevard/Freeport Boulevard intersection as defined in the Delta Shores Finance Plan.	LS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.9-20 Under Cumulative plus Project conditions the Cosumnes River Boulevard/Delta Shores Circle (West) intersection could be impacted.	S	5.9-20 The project applicant shall construct two southbound through lanes and two northbound through lanes on Delta Shores Circle South between Cosumnes River Boulevard and Street D (north). The project applicant shall pay a fair share towards modifying the planned westbound approach of the Cosumnes River Boulevard/I-5 northbound ramps intersection to provide two through lanes and two exclusive right-turn (mixed flow) lanes. This configuration would allow mixed flow vehicles to use both westbound right-turn lanes to enter the northbound on-ramp. This differs from the planned configuration which only allows high occupancy vehicles (HOV) to turn right from a shared through/right-turn lane. The HOV bypass lane would begin just downstream on the northbound on-ramp.	SU
5.9-21 Under Cumulative plus Project conditions the Meadowview Road/Manorside Drive intersection could be impacted by the project.	S	5.9-21 Implement the Mitigation Measure 5.9-8.	LS
5.9-22 Under Cumulative plus Project conditions the I-5 SB Off-Ramp at Cosumnes River Boulevard – queues could be impacted by the project.	S	5.9-22 The project applicant shall pay a fair contribution toward the construction of the interchange as defined in the Delta Shores Finance Plan and the cost of widening the southbound off ramp and I-5 overcrossing additional eastbound lane. Design of the interchange is not finalized at this time and may change during the PS&E approval process.	LS
5.9-23 Under Cumulative Plus Project conditions, the project would have a significant cumulative impact on freeway operations.	S	5.9-23 Implement Mitigation Measure 5.9-9.	SU
5.9-24 Under Cumulative Plus Project conditions, the project would have a significant impact on existing transit operations.	S	5.9-24 Implement Mitigation Measure 5.9-10.	LS
5.9-25 Under Cumulative Plus Project conditions, the project would not adversely affect existing bicycle or pedestrian facilities resulting in a less-than-significant cumulative impact.	LS	None required	NA
5.10 Global Climate Change			
This section does not contain any mitigation measures.			

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4.0 LAND USE CONSISTENCY AND COMPATIBILITY

4.0 LAND USE CONSISTENCY AND COMPATIBILITY

INTRODUCTION

This chapter of the EIR provides an overview of the land use and planning effects that may result from development of the Delta Shores project. This chapter describes existing and planned land uses in and adjacent to the project site, including current land uses, land use designations, and zoning. Section 15125 of the CEQA Guidelines states that the EIR environmental setting shall discuss “any inconsistencies between the proposed project and applicable general plans and regional plans.” Potential inconsistencies between the proposed project and the City of Sacramento 1988 General Plan; the City’s Comprehensive Zoning Ordinance; the South Sacramento Airport/Meadowview Community Plan; and the Land Use and Resource Management Plan for the Primary Zone are all evaluated in this chapter. In addition, the project evaluates consistency with the City’s 2030 General Plan and South Area Community Plan anticipated to be adopted in December 2008/early 2009.

An EIR may provide information regarding social and economic issues, but CEQA does not recognize these issues as direct physical impacts on the environment. More specifically, CEQA Guidelines section 15131 states, “[e]conomic or social effects of a project shall not be treated as significant effects on the environment.” A direct physical change in the environment is a physical change that is caused by and immediately related to the project (CEQA Guidelines section 15064(d) (1)). The CEQA Guidelines do direct that social and economic factors can be used as measures of the magnitude of an impact or may be used to connect the proposed action to an indirect physical environmental effect.¹ Therefore, this chapter does not identify environmental impacts and mitigation measures. Physical impacts on the environment that could result from implementation of the project or project alternatives are addressed in the appropriate technical sections of this EIR.

Two comment letters regarding land use issues were received in response to the Notice of Preparation (NOP). See Appendix B for copies of all the NOP comment letters. The Delta Protection Commission states that the project site is in the Secondary Zone of the Legal Delta and refers to findings, policies, and recommendations in the Land Use and Resource Management Plan for the Primary Zone. The Sacramento Area Council of Governments (SACOG) comment letter notes that the proposed project has significantly higher amounts of retail than the Blueprint conceptual map. These issues are addressed in this chapter.

ENVIRONMENTAL SETTING

The project site is divided north-south by Interstate 5 (I-5). The western portion of the project site consists of approximately 120 acres of active and fallow agricultural land, an abandoned dairy farm,

1 CEQA Guidelines section 15131(a) states: “[a]n EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused, in turn, by the economic or social changes.”

a large storage shed, a demolished Russian embarcadero,² and old farm equipment. Several mature trees, including valley oak, walnut, Fremont's cottonwood, alder, cherry, acacia, Italian cypress, English walnut, mulberry and orange trees, are primarily located in the southern portion of the site adjacent to the project site boundary with the Bartley Cavanaugh Golf Course.³ The west side is bordered by an office complex to the north, I-5 to the east, Bartley Cavanaugh Golf Course to the south, and Freeport Boulevard (Highway 160) and the Town of Freeport to the west.

The eastern portion of the project site encompasses approximately 662 acres and is entirely agricultural in nature, populated with rotating row crops. There is a seasonal swale in the northern portion of the site that runs in a north-south direction. There are few trees on the east side of the site including walnut, valley oak, blue oak, and willow,⁴ including some mature trees along the site boundary with the Sacramento Job Corps site to the east. PG&E overhead electrical lines traverse the northern portion of the site in an east-west direction on both sides of I-5. The eastern portion is bordered by single-family residential homes to the north, the Sacramento Job Corps facility to the northeast, agricultural land to the east, a levee along Morrison Creek and the Sacramento Regional County Sanitation District (SRCSD) open space bufferlands and regional water treatment plant to the south, and I-5 to the west.

The majority of the project site is currently designated in the City's 1988 General Plan for Industrial-Employee Intensive uses with smaller areas designated for Community/Neighborhood Commercial and Office (CNO), Low Density Residential (LDR), Medium Density Residential (MDR), Regional Commercial and Office (RCO), Parks-Recreation-Open Space (P/OS), and Public/Quasi-Public-Miscellaneous (P/QP) uses (see Figure 4-1). In the proposed 2030 General Plan the project site is designated Planned Development on the Preferred Land Use and Urban Form Diagram. Existing zoning classifications for the project site include Agricultural (A), Shopping Center-PUD (SC-PUD), Single Family Alternative Residential-PUD (R-1A-PUD), and Manufacturing, Research & Development-PUD (MRD-PUD) under the City's Zoning Ordinance (see Figure 4-2). The project site is also located within the existing Airport/Meadowview Community Plan boundaries. The Community Plan designates the project site as High Tech Industrial, Commercial, Office, Residential, and General Public Facilities. As such, the City of Sacramento General Plan and Airport/Meadowview Community Plan anticipated Industrial-Employee Intensive and Low Density Residential uses for this area. The South Area Community Plan does not include separate land use designations for the project site different from the 2030 General Plan Preferred Land Use and Urban Form Diagram.

Regulatory Context

Federal

There are no applicable federal agencies, plans, or policies that oversee local planning issues.

2 See the discussion in the Initial Study (Appendix A) that addresses cultural resources starting on page 39.

3 ECORP, *Arborist Survey Report for West Delta Shores*, June 6, 2007.

4 ECORP, *Arborist Survey Report for East Delta Shores*, June 6, 2007.



Source: EDAW, October 2006.

FIGURE 4-1
Existing General Plan Designations



0D5131100

Delta Shores



LEGEND

- A = Agricultural Zone
- MRD-PUD = Manufacturing, Research and Development Zone-Planned Unit Development
- SC-PUD = Shopping Center Zone-Planned Unit Development
- A-PUD = Agricultural Zone-Planned Unit Development
- R1A-PUD = Single Family Alternative Zone-Planned Unit Development
- R2A-PUD = Multi-Family Zone-Planned Unit Development (max 17 du/acre)
- R1A-R-PUD = Single Family Alternative Zone-Review-Planned Unit Development

Source: EDAW, February 2008.



FIGURE 4-2
Existing Zoning

0D5131100

Delta Shores

State

There are no applicable state agencies, plans, or policies that oversee local planning issues.

Local

City of Sacramento 1988 General Plan

The Sacramento General Plan Update (SGPU) was adopted on January 19, 1988. The SGPU replaced the heavily amended 1974 General Plan for Sacramento. The General Plan is a 20-year policy guide for physical, economic, and environmental growth and renewal of the City. A total of nine sections are contained within the SGPU, each of which contains goals and policies intended to guide buildout of the City. Applicable goals and policies from the SGPU are listed below.

RESIDENTIAL LAND USE ELEMENT

Goal A Improve the quality of residential neighborhoods Citywide by protecting, preserving and enhancing their character.

Policies

3. Utilize established Multiple Family Design Guidelines in reviewing multiple family development on a Citywide basis.
6. Prohibit the intrusion of incompatible uses into residential neighborhoods through adequate buffers, screening and zoning practices that do not preclude pedestrian access to arterials that may serve as transit corridors.
8. Support efforts to develop established guidelines for residential development fronting on a major street.

Goal B Provide affordable housing opportunities for all income household categories throughout the City.

Policies

1. Establish methods to provide more balanced housing opportunities in communities that lack a full range of housing opportunities.
2. Support existing programs which provide affordable housing opportunities for lower income households and seek new ways to increase this housing type.

Goal C Develop residential land uses in a manner that is efficient and utilizes existing and planned urban resources.

Policies

1. Identify areas where increased densities, land use changes or mixed uses would help support existing services, transportation facilities, transit, and light rail. Then proceed with necessary General Plan land use changes for property with service capacities adequate to support more intensive residential development.
2. Identify areas of potential change where density development would be appropriate along major thoroughfares, commercial strips and near light rail stations, and modify plans to accommodate this change.
7. Continue to support energy conservation measures incorporated in the subdivision ordinance and during the review of building permits.

Goal D Maintain orderly residential growth in areas where urban services are readily available or can be provided in an efficient cost effective manner.

Policy

2. Approve residential development only where City services are provided in a manner which meets the needs of the proposed development.

Goal E Provide appropriate residential opportunities to meet the City's required fair share of the regions housing needs.

Policies

1. Provide housing opportunities in newly developing communities and in large mixed use developments in an effort to reduce travel time to and from employment centers.
2. Use mixed use housing and employment centers to help meet housing needs and reduce traffic in new development within the City.

COMMERCE AND INDUSTRY LAND USE ELEMENT

Neighborhood/Community Commercial and Office Areas

Goal A Ensure that all areas of the City are adequately served by neighborhood/community shopping districts.

Policies

1. Maintain and strengthen viable shopping districts throughout the City.
3. Regulate shopping center proposals according to the criteria established in the City's adopted shopping center development standards.
4. Strengthen viable strip commercial development and discourage existing marginal strips from being extended.

Goal B Promote mixed use development of neighborhood/community commercial districts through new construction and revitalization.

Policies

1. Allow mixed use development in accordance with the requirements set forth previously in this Section.
2. Promote the development of mixed use local commercial/office and high density residential projects.

CONSERVATION AND OPEN SPACE ELEMENT

Preservation of Natural Resources

Goal A Implement the Master Plan for Parks and Recreation

Policies

1. Continue programs for the planting and maintenance of trees, grass, floral displays, and other public landscapes both in the parks and on other City land such as street medians, public buildings, and grounds.
4. Establish a system of open space, buffers and view sheds that act as neighborhood gateways, and as visual and physical community separators and greenbelts to define the limits of urban growth.

Goal E Establish development standards for water related open space lands throughout the City to enhance the visual amenities of these uses.

Policies

1. Explore ways to reverse degradation and pollution and enhance the beauty and wildlife habitats of creeks and drainage canals.

2. Explore ways to preserve the undeveloped open space areas and wildlife habitats along Dry Creek, Arcade Creek, Magpie Creek, Fisherman's Lake, and the area south of Woodlake Park, Morrison Creek, Elder Creek, Laguna Creek, Beach Lake, and drainage canals.

PUBLIC FACILITIES AND SERVICES ELEMENT

Parks and Recreation Services

Goal A Provide adequate parks and recreational services in all parts of the City, adapted to the needs and desires of each neighborhood and community. Attempt to achieve the Acreage Service Level Goals established in the Parks and Recreation Master Plan.

Policies

1. Encourage private development of recreational facilities that complement and supplement the public recreational system.
3. Encourage joint development of parks with compatible uses such as new schools, libraries and detention basins.
5. Design parks to enhance and preserve natural site characteristics and environmental values.
7. Locate community and regional parks and linear recreational areas on or adjacent to major thoroughfares.
9. Continue the practice of partnering with school districts and the community to provide neighborhood or community serving outdoor recreation facilities on and adjacent to public schools.

The land use designations of the SGPU define the appropriate types, densities, and function of uses for each land use designation. The current SGPU land use designations for the project site are defined below:

Low Density Residential – This designation allows residential uses within densities from 4-15 dwelling units per net acre. Typical development in these areas will consist of single family detached units, duplexes, halfplexes, townhouses, condominiums, zero lot line units and cluster houses. Since General Plan designations include large areas of land, other related neighborhood uses and specific residential densities may be indicated in community plans. The low density residential land use designation in North Natomas allows for densities as low as three dwelling units per net acre. Within the Jacinto Creek Planning Area the Low Density Residential General Plan designation allows residential uses with densities from 4-20 dwelling units per net acre. Minimum average target density within ¼ mile of a light rail transit station is 12 dwelling units per net acre.

Medium Density Residential – This designation will generally consist of multiple family dwellings with densities ranging from 16-29 dwelling units per net acre. Development under this designation will consist of condominiums, garden apartments and light density apartment uses. Some commercial or office use may be located within multiple family districts since an overlap of land uses is expected in higher density residential districts which are located along major streets. Specific land use designations for each parcel may be indicated in community plans. North Natomas areas designated on the General Plan as medium density residential and located within 1/4 mile of a light rail station or bus transit center are allowed to exceed the maximum density range of 29 dwelling units per net acre. Minimum average target density within ¼ mile of a light rail transit station is 22 dwelling units per net acre.

Commerce/Neighborhood Commercial and Office – Includes shopping centers (less than 200,000 square feet), commercial strips, and smaller office developments which offer goods and services for the daily needs of adjacent residential areas. These uses maybe located adjacent to residential areas without significant adverse impacts.

Regional Commercial and Office – Includes larger (regional) shopping centers, the Central Business District, and suburban office parks. A grouping of smaller retail centers or office buildings or a single facility with a regional trade area would also fall into this category. The Central Business District is included in this category because of its regional function as an employment, retail trade, service, and office center.

Industrial-Employee Intensive – Includes lands designated on community plans as Labor Intensive, High-Tech, and MRD (Manufacturing, Research and Development). Office uses up to 50 percent of electronics, research oriented uses, as well as limited non-industrial uses that have high employee intensities (30-45 employees/acre). The Community Plans permit a degree of flexibility in the General Plan standards depending upon specific conditions in the community. The Employee Intensive designation would be appropriate for high activity nodes along transportation corridors and for industrial land in North Natomas.

Parks –A park or facility developed primarily to meet the requirements of a large portion of the City or intended to be used by the people who live nearby. The park could be situated adjacent to an elementary school. Amenities could include a tot lot, an adventure area, a large group picnic area with shade structure, a community garden, a neighborhood/community Skate Park, restroom, on-site parking, bicycle trail, a nature area, a dog park, and unlighted and lighted sport fields or sports courts. Specialized facilities may include: a community center, a water play area and/or a swimming pool. The exact size of the park and amenities included would be determined by the park type, such as Neighborhood Park or Community Park.

Open Space – Open space areas in the Parks and Recreation System are natural areas set aside primarily to enhance environmental amenities. They are developed and managed to enhance or protect their scenic, historic, environmental, cultural and passive recreation value. Many such areas are intended to be part of an interconnected regional system of open space within and between urban growth areas.

The project is proposing to amend the City's General Plan to change the existing land use designations. If the 2030 General Plan is adopted prior to the project, specific land use designations from the new General Plan will be applied to the project (see Table 2-3 in Chapter 2, Project Description, for a list of potential land use designations based on the 2030 General Plan). If the 2030 General Plan is not adopted prior to the project going before the City for review then the following land use designations from the 1988 General Plan will apply: Low Density Residential (LDR), Medium Density Residential (MDR), Residential Mixed Use, Regional Commercial and Office, and Community/Neighborhood Commercial and Office (see Figure 4-3).

Low Density Residential – This designation allows residential uses within densities from 4-15 dwelling units per net acre. Typical development in these areas will consist of single family detached units, duplexes, halfplexes, townhouses, condominiums, zero lot line units and cluster houses. Since General Plan designations include large areas of land, other related neighborhood uses and specific residential densities may be indicated in community plans. The low density residential land use designation in North Natomas allows for densities as low as three dwelling units per net acre. Within the Jacinto Creek Planning Area the Low Density Residential General Plan designation allows residential uses with densities from 4-20 dwelling units per net acre. Minimum average target density within ¼ mile of a light rail transit station is 12 dwelling units per net acre.

Medium Density Residential – This designation will generally consist of multiple family dwellings with densities ranging from 16-29 dwelling units per net acre. Development under this designation will consist of condominiums, garden apartments and light density apartment uses. Some commercial or office use may be located within multiple family districts since an overlap of land uses is expected in higher density residential districts which are located along major streets. Specific land use designations for each parcel may be indicated in community plans. North Natomas areas designated on the General Plan as medium density residential and located within 1/4 mile of a light rail station or bus transit center are allowed to exceed the maximum density range of 29 dwelling units per net acre. Minimum average target density within ¼ mile of a light rail transit station is 22 dwelling units per net acre.

Residential Mixed Use – This designation refers to areas planned for development that consists of a mixture of residential densities, commercial and or office use. This designation is different from the High Density Residential designation which is a residential designation. The Residential Mixed Use designation is intended for Mixed Use development with both Residential and commercial uses. Minimum average target density within ¼ mile of a light rail transit station is 22 dwelling units per net acre.



Source: EDAW, 2008.

FIGURE 4-3
Proposed General Plan Designations

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Delta Shores

Regional Commercial and Office – Includes larger (regional) shopping centers, the Central Business District, and suburban office parks. A grouping of smaller retail centers or office buildings or a single facility with a regional trade area would also fall into this category. The Central Business District is included in this category because of its regional function as an employment, retail trade, service, and office center.

Commerce/Neighborhood Commercial and Office - Includes shopping centers (less than 200,000 square feet), commercial strips, and smaller office developments which offer goods and services for the daily needs of adjacent residential areas. These uses maybe located adjacent to residential areas without significant adverse impacts.

City of Sacramento 2030 General Plan

The City anticipates adopting its new 2030 General Plan in December 2008/early 2009. Adoption of the new General Plan will supersede the 1988 General Plan and Airport/Meadowview Community Plan. Applicable goals and policies from the new Sacramento 2030 General Plan are listed below.

Goal LU 1.1 Growth and Change. Support sustainable growth and change through orderly and well-planned development that provides for the needs of existing and future residents and businesses, ensures the effective and equitable provision of public services, and makes efficient use of land and infrastructure.

Goal LU 2.1 City of Neighborhoods. Maintain a city of diverse, distinct, and well-structured neighborhoods that meet the community's needs for complete, sustainable, and high-quality living environments, from the historic downtown core to well-integrated new growth areas.

Policies

LU 2.1.3 **Complete and Well-Structured Neighborhoods.** The City shall promote the design of complete and well-structured neighborhoods whose physical layout and land use mix promote walking to services, biking, and transit use; foster community pride; enhance neighborhood identity; ensure public safety; are family-friendly and address the needs of all ages and abilities.

LU 2.1.4 **Neighborhood Centers.** The City shall promote the development of strategically located (e.g., accessible to surrounding neighborhoods) mixed-use neighborhood centers that accommodate local-serving commercial, employment, and entertainment uses; provide diverse housing opportunities; are within walking distance of surrounding residents; and are efficiently served by transit.

LU 2.4.1 **Unique Sense of Place.** The City shall promote quality site, architectural and landscape design that incorporates those qualities and characteristics that make Sacramento desirable and memorable including: walkable blocks, distinctive parks and open spaces, tree-lined streets, and varied architectural styles.

LU 2.4.3 **Enhanced City Gateways.** The City shall ensure that public improvements and private development work together to enhance the sense of entry at key gateways to the city.

Goal LU 2.5 City Connected and Accessible. Promote the development of an urban pattern of well-connected, integrated, and accessible neighborhoods corridors, and centers.

Policy

LU 2.5.1 **Connected Neighborhoods, Corridors, and Centers.** The City shall require that new development, both infill and greenfield, maximizes connections and minimizes barriers between neighborhoods, corridors, and centers within the city.

Goal LU 2.6 City Sustained and Renewed. Promote sustainable development and land use practices in both new development and redevelopment that provide for the transformation of Sacramento into a sustainable urban city while preserving choices (e.g., where to live, work, and recreate) for future generations.

Policies

- LU 2.6.1 **Sustainable Development Patterns.** The City shall promote compact development patterns and higher-development intensities that use land efficiently; reduce pollution and automobile dependence and the expenditure of energy and other resources; and facilitate walking, bicycling, and transit use.
- LU 2.7.5 **Development along Freeways.** The City shall promote high-quality development character of buildings along freeway corridors and protect the public from the adverse effects of vehicle-generated air emissions, noise, and vibration, using such techniques as:
- Requiring extensive landscaping and trees along the freeway fronting elevation
 - Establish a consistent building line, articulating and modulating building elevations and heights to create visual interest. Include design elements that reduce noise and provide for proper filtering, ventilation, and exhaust of vehicle air emissions
- LU 2.7.6 **Walkable Blocks.** The City shall require new development and redevelopment projects to create walkable, pedestrian-scaled blocks, publicly accessible mid-block pedestrian routes where appropriate, and sidewalks appropriately scaled for the anticipated pedestrian use.
- LU 2.7.7 **Buildings that Engage the Street.** The City shall require buildings to be oriented to and actively engage and complete the public realm through such features as building orientation, build-to and setback lines, façade articulation, ground-floor transparency, and location of parking.
- LU 2.8.4 **Housing Type Distribution.** The City shall promote an equitable distribution of housing types for all income groups throughout the city and promote mixed-income developments rather than creating concentrations of below-market-rate housing in certain areas.

Goal LU 4.1 Neighborhoods. Promote the development and preservation of neighborhoods that provide a variety of housing types, densities, and designs and a mix of uses and services that address the diverse needs of Sacramento residents of all ages, socio-economic groups, and abilities.

Policies

- LU 4.1.1 **Mixed-use Neighborhoods.** The City shall promote neighborhood design that incorporates a compatible and complementary mix of residential and nonresidential (e.g., retail, parks, schools) uses that address the basic daily needs of residents and employees.
- LU 4.1.2 **Neighborhood Amenities.** The City shall encourage appropriately scaled community-supportive facilities and services within all neighborhoods to enhance neighborhood identity and provide convenient access within walking and biking distance of city residents.
- LU 4.1.3 **Walkable Neighborhoods.** The City shall encourage the design and development of neighborhoods that makes them pedestrian friendly, including features such as short blocks, broad sidewalks (e.g., lighting, landscaping, adequate width), tree-shaded streets, buildings that define and are oriented to adjacent streets and public spaces, limited driveway curb cuts, paseos and pedestrian lanes, alleys, traffic-calming features, and convenient pedestrian street crossings.
- LU 4.1.5 **Connecting Key Destinations.** The City shall promote better connections by all travel modes between residential neighborhoods and key commercial, cultural, recreational, and other community-supportive destinations for all travel modes.
- LU 4.1.6 **Neighborhood Transitions.** The City shall provide for appropriate transitions between different land use and urban form designations along the alignment of alleys or rear lot lines and along street centerlines, in order to maintain consistent scale, form, and character on both sides of public streetscapes.
- LU 4.1.7 **Connections to Open Space.** The City shall ensure that new and existing neighborhoods contain a diverse mix of parks and open spaces that are connected by trails, bikeways, and other open space networks and are within easy walking distance of residents.
- LU 4.1.9 **Residential Diversity.** The City shall avoid concentrations of single-use high-density multifamily residential uses (e.g., apartments and condominiums) in existing or new neighborhoods.

LU 4.1.10 **Balanced Neighborhoods.** The City shall require new major residential development to provide a balanced housing mix that includes a range of housing types and densities.

LU 4.1.12 **Family-Friendly Neighborhoods.** The City shall promote the development of family-friendly neighborhoods throughout the city that provide housing that accommodates families of all sizes and provides safe and convenient access to schools, parks, and other family-oriented amenities and services.

Goal LU 4.2 Suburban Neighborhoods. Encourage the creation of more complete and well-designed suburban neighborhoods that provide a variety of housing choices and mix of uses that encourage walking and biking.

Policy

LU 4.2.1 **Enhanced Walking and Biking.** The City shall pursue opportunities to promote walking and biking in existing suburban neighborhoods through improvements such as:

- Introducing new pedestrian and bicycle connections
- Adding bike lanes and designating and signing bike routes
- Narrowing streets where they are overly wide
- Introducing planting strips and street trees between the curb and sidewalk
- Introducing traffic circles, speed humps, traffic tables, and other appropriate traffic-calming improvements

Goal LU 4.5 New Neighborhoods. Ensure that complete new neighborhoods embody the city's principles of Smart Growth and Sustainability.

Policies

LU 4.5.1 **New Growth Neighborhoods.** The City shall ensure that new residential growth areas include neighborhoods that maintain a mix of residential types and densities, and that the residential mix will provide appropriate transitional features that integrate the area with adjacent existing neighborhoods and development.

LU 4.5.2 **Compact Neighborhoods.** The City shall encourage developers to create new residential neighborhoods that are pedestrian and bicycle friendly, are accessible by transit, and make efficient use of land and infrastructure by being compact with higher average densities.

LU 4.5.3 **Green Neighborhoods.** The City shall encourage new development to build to a green neighborhood rating standard and apply for certification in a green neighborhood system such as LEED-ND (Leadership in Energy and Environmental Design-Neighborhood Development).

LU 4.5.4 **New Neighborhood Core.** The City shall require all parts of new neighborhoods be within ½-mile of a central gathering place that is located on a collector or minor arterial and that includes public space, shopping areas, access to transit, and community-supportive facilities and services.

LU 4.5.5 **Traditional Grid.** The City shall require all new neighborhoods to be designed with traditional grid block sizes ranging from 300 to 400 feet in length.

LU 4.5.6 **Connections to Transit.** The City shall require new neighborhoods to include transit stops that connect to and support a citywide transit system and are within a ½-mile walking distance of all dwellings.

Goal LU 5.1 Centers. Promote the development throughout the city of distinct, well-designed mixed-use centers that are efficiently served by transit, provide higher-density, urban housing opportunities and serve as centers of civic, cultural, and economic life for Sacramento's neighborhoods and the region.

Policies

LU 5.1.1 **Diverse Centers.** The City shall encourage development of local, citywide, and regional mixed-use centers that address different community needs and market sectors, and complement and are well integrated with the surrounding neighborhoods.

LU 5.1.2 **Centers Served by Transit.** The City shall promote the development of commercial mixed-use centers that are located on existing or planned transit lines in order to facilitate and take advantage of transit service, reduce vehicle trips, and enhance community access.

LU 5.1.4 **Major Retail and Office Development.** The City shall work with developers to develop major regional commercial and office projects in centers throughout the city that provide shopping and jobs for all city residents.

LU 5.1.5 **Vertical and Horizontal Mixed-use.** The City shall encourage the vertical and horizontal integration of uses within commercial centers and mixed-use centers, particularly residential and office uses over ground floor retail.

Goal LU 5.2 Suburban Centers. Promote more attractive, pedestrian-friendly suburban centers that serve surrounding neighborhoods and businesses as local gathering places where people shop and socialize.

LU 5.2.3 **Public Space.** The City shall work with suburban centers to integrate pedestrian amenities, traffic-calming features, plazas and public areas, attractive streetscapes, shade trees, lighting, and open spaces within the existing center to create destinations for area residents to shop and gather.

Goal LU 5.3 Traditional Centers. Promote traditional centers where people can shop and socialize within walking distance of surrounding neighborhoods.

Goal LU 5.4 Regional Commercial Centers. Establish major mixed-use activity centers through development and reinvestment in existing regional commercial centers that are vibrant, regionally accessible destinations where people live, work, shop, and congregate in a mix of retail, employment, entertainment, and residential uses.

Policies

LU 5.4.3 **Neighborhood Centers and Destinations.** The City shall encourage greater pedestrian and bicycle connections between mixed-use regional commercial centers and surrounding neighborhoods.

LU 6.1.8 **Sidewalks and Pedestrian Amenities.** The City shall require that sidewalks along mixed-use corridors are wide enough to accommodate significant pedestrian traffic and the integration of public amenities and landscaping.

LU 6.1.10 **Corridor Transit.** The City shall encourage design and development along mixed-use corridors that promotes the use of public transit and pedestrian and bicycle travel and maximizes personal safety through development features such as:

- Safe and convenient access for pedestrians between buildings and transit stops, parking areas, and other buildings and facilities
- Roads designed for automobile use, efficient transit service as well as pedestrian and bicycle travel

LU 6.1.12 **Visual and Physical Character.** The City shall promote development patterns and streetscape improvements that transform the visual and physical character of typical automobile-oriented corridors by:

- Enhancing the definition of the corridor by locating buildings at the back of the sidewalk, and establishing a consistent street wall
- Introducing taller buildings that are in scale with the wide, multi-lane street corridors
- Locating off-street parking behind or between buildings (rather than between building and street)
- Reducing visual clutter by regulating the number, size and design quality of signs
- Removing utility poles and under-grounding overhead wires
- Adding street trees.

LU 6.1.13 **Differentiating the Corridor.** The City shall promote development patterns that break up long, undifferentiated corridors of commercial strip development by establishing distinct activity nodes or centers that are distinguished by features such as their primary tenants, mix of uses, scale and intensity of development, and architectural character.

LU 6.1.14 **Compatibility with Adjoining Uses.** The City shall ensure that the introduction of higher-density mixed-use development along major arterial corridors is compatible with adjacent land uses, particularly residential uses, by requiring such features as:

- Buildings setback from rear or side yard property lines adjoining single-family residential uses.
- Building heights stepped back from sensitive adjoining uses to maintain appropriate transitions in scale and to protect privacy and solar access.
- Landscaped off-street parking areas, loading areas, and service areas screened from adjacent residential areas, to the degree feasible.
- Lighting shielded and directed downward to minimize impacts on adjacent residential uses.

In the event that the proposed project is approved after the approval of the City's 2030 General Plan, the proposed project would propose new general plan land use designations to reflect changes in the new General Plan to the descriptions of new suburban neighborhood residential land use designations (see Table 2-3 in Chapter 2, Project Description). The residential portions of the proposed project would receive new land use designations, which have been updated for the draft 2030 General Plan. These new land use designations are described below.

Suburban Neighborhood Low Density Allowed Uses

This designation provides for low-intensity housing and neighborhood-support uses including the following:

- Single-family detached dwellings
- Single-family attached dwellings (e.g., duplexes, triplexes, townhomes)
- Accessory second units
- Limited neighborhood-serving commercial on lots three acres or less
- Compatible public, quasi-public, and special uses
- Suburban Neighborhood Low Density Development Standards
- Minimum Density: 3.0 Units/Net Acre Maximum Density: 8.0 Units/Net Acre
- Maximum FAR: 1.50 FAR

Suburban Neighborhood Medium Density Allowed Uses

This designation provides for medium-density housing and neighborhood-support uses including the following:

- Small-lot single-family detached dwellings
- Small-lot single-family attached dwellings (e.g., duplexes, triplexes, townhomes)
- Accessory second units
- Multifamily dwellings (e.g., apartments and condominiums)
- Limited neighborhood-serving commercial on lots three acres or less
- Compatible public, quasi-public, and special uses

- Suburban Neighborhood Medium Density Development Standards
- Minimum Density: 7.0 Units/Net Acre Maximum Density: 15.0 Units/Net Acre
- Maximum FAR: 1.50 FAR

Suburban Neighborhood High Density Allowed Uses

This designation provides for single-use multifamily housing and predominantly residential mixed-use development in areas served by major transportation routes and facilities, and near major shopping areas, including the following:

- Multifamily dwellings (e.g., apartments and condominiums)
- Mixed-use neighborhood-serving commercial
- Compatible public, quasi-public, and special uses
- Suburban Neighborhood High Density Development Standards
- Minimum Density: 15.0 Units/Net Acre Maximum Density: 30.0 Units/Net Acre
- Minimum FAR: 0.35 FAR Maximum FAR: 1.50 FAR

City of Sacramento Zoning Ordinance

The City of Sacramento Zoning Ordinance (Sacramento City Code Title 17) is intended to encourage the most appropriate use of land, conserve, stabilize, and improve the value of property, provide adequate open space for recreational, aesthetic, and environmental amenities, and control the distribution of population to promote health, safety, and the general welfare of the population of the City (§17.04.020). To achieve this goal, the Zoning Ordinance regulates the use of land, buildings, or other structures for residences, commerce, industry, and other uses required by the community. The Zoning Ordinance also regulates the location, height, and size of buildings or structures, yards, courts, and other open spaces, the amount of building coverage permitted in each zone, and population density. The Zoning Ordinance divides the City into districts of such shape, size, and number best suited to carry out these regulations, and to provide for their enforcement.

Existing zoning classifications for the project site include Agricultural (A), Shopping Center-PUD (SC-PUD), Single Family Alternative Residential-PUD (R-1A-PUD), and Manufacturing, Research & Development-PUD (MRD-PUD) under the City's Zoning Ordinance.

A—Agricultural Zone. This is an agricultural zone restricting the use of land primarily to agriculture and farming. It is also considered an open space zone. Property in this zone will be considered for reclassification when proposed for urban development which is consistent with the general plan. See Chapter 17.48 for more details.

SC—Shopping Center Zone. This is a general shopping center zone which provides a wide range of goods and services to the community. This zone, however, prohibits general commercial uses which are not compatible with a retail shopping center.

R-1A—Single-Family Alternative Zone. This is a low to medium density residential zone intended to permit the establishment of single-family, individually owned, attached or detached residences where lot sizes, height, area and/or setback requirements vary from standard single-family. This zone is intended to accommodate alternative single-family designs which are determined to be compatible with standard

single-family areas and which might include single-family attached or detached units, townhouses, cluster housing, condominiums, cooperatives or other similar projects. Approximate density for the R-1A zone is ten (10) dwelling units per acre. Maximum density in this zone is fifteen (15) dwelling units per net acre.

MRD—Manufacturing, Research and Development Zone. This zone is intended to protect and preserve prime industrial land for high quality manufacturing, assembly, research and development and related supporting uses. The zone prohibits unrelated and incompatible industrial, commercial, office, residential and other nonindustrial uses. The uses, regulations and the development standards of this zone are to ensure the proper development and use of land and improvements in a manner so as to achieve a high quality, campus-park-like, nuisance free environment for manufacturing, assembly, research and development type land uses in accordance with the policies of the city general plan, community plans, and the PUD development guidelines adopted for the area. The MRD-20 zone allows a maximum of twenty (20) percent office uses and the MRD-50 zone allows a maximum of fifty (50) percent office use. See Chapter 17.36 of this title for more details.

PUD—Planned Unit Development: The purpose of the Planned Unit Development designation is to provide for greater flexibility in the design of integrated developments than is otherwise possible through the strict application of the City's zoning regulations. PUD allows for a variety of land uses in one area to exist through creative and imaginative planning. Properties with a PUD designation are subject to the specific development guidelines of the PUD in which it is located and the Zoning Ordinance section relating to PUDs.

The project is proposing to rezone the project site to be consistent with either the 1988 land use designations or the proposed 2030 land use designations, depending on which are applicable at the time of project approval. The City will update the Zoning Ordinance based on the 2030 General Plan after it is adopted. The proposed zoning designations consistent with the 1988 land use designations include: Low Density Residential – Planned Unit Development (R-1-PUD), Low to Medium Density Residential – Planned Unit Development (R-1A-PUD), High Density Residential – Planned Unit Development (R-3-PUD), Residential Mixed Use – Planned Unit Development (RMX-PUD), General Commercial – Planned Unit Development (C-2-PUD), and Agriculture Open Space – Planned Unit Development (AOS-PUD), which are described as defined in the City's Zoning Ordinance below (see Figure 4-4).

R-1—Standard Single-Family Zone. This is a low density residential zone composed of single-family detached residences on lots a minimum of fifty-two (52) feet by one hundred (100) feet in size. A duplex or halfplex is allowed on a corner lot subject to compliance with specific restrictions. In addition, alternative ownership housing types, such as townhouses, rowhouses, and cluster housing, may be permitted with a special permit to satisfy inclusionary housing requirements. This zone may also include recreational, religious and educational facilities as the basic elements of a balanced neighborhood. Such areas should be clearly defined and without encroachment by uses not performing a neighborhood function. Minimum lot dimensions are fifty-two (52) feet by one hundred (100) feet interior, sixty-two (62) feet by one hundred (100) feet corner. Approximate density for the R-1 zone is six to eight dwelling units per acre.

R-1A—Single-Family Alternative Zone. This is a low to medium density residential zone intended to permit the establishment of single-family, individually owned, attached or detached residences where lot sizes, height, area and/or setback requirements vary from standard single-family. This zone is intended to accommodate alternative single-family designs which are determined to be compatible with standard single-family areas and which might include single-family attached or detached units, townhouses, cluster housing, condominiums, cooperatives or other similar projects. Approximate density for the R-1A zone is ten (10) dwelling units per acre. Maximum density in this zone is fifteen (15) dwelling units per net acre.

R-3—Multi-Family Zone. This is a multi-family residential zone intended for more traditional types of apartments. This zone is located outside the central city serving as a buffer along major streets and shopping centers. Minimum land area per unit is one thousand five hundred (1,500) square feet. Maximum density for the R-3 zone is twenty-nine (29) dwelling units per acre.

RMX—Residential Mixed Use Zone. This is a mixed use zone. The zone permits multiple family residential, office and limited commercial uses in a mixture established for the area through a special planning district or adopted locational standards. Maximum density in the RMX zone is thirty-six (36) dwelling units per acre. See Chapter 17.28 for more details.

C-2—General Commercial Zone. This is a general commercial zone which provides for the sale of commodities, or performance of services, including repair facilities, offices, small wholesale stores or distributors, and limited processing and packaging. Any nonresidential development in the C-2 zone that requires a discretionary entitlement shall also be subject to review for consistency with the commercial corridor design principles adopted pursuant to Section 17.132.035(C) and as they may be amended from time to time.

AOS—Agriculture-Open Space Zone. This is an exclusive agricultural zone designed for the long term preservation of agricultural and open space land. This zone is designated to prevent the premature development of land in this category to urban uses. See Chapter 17.48 for more details.

PUD—Planned Unit Development: The purpose of the Planned Unit Development designation is to provide for greater flexibility in the design of integrated developments than is otherwise possible through the strict application of the City's zoning regulations. PUD allows for a variety of land uses in one area to exist through creative and imaginative planning. Properties with a PUD designation are subject to the specific development guidelines of the PUD in which it is located and the Zoning Ordinance section relating to PUDs.

City of Sacramento - Smart Growth Implementation Strategy

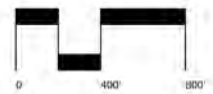
Smart Growth is about changing traditional development patterns that focus on the automobile and single use zoning by supporting development which revitalizes central cities and existing communities, supports public transportation and preserves open space. The City of Sacramento adopted Smart Growth Principles into the General Plan in 2001. The Smart Growth Implementation Strategy contains principles and initiatives to guide development throughout the city with the overall goal of smart growth. The following Smart Growth Principles were adopted:

1. Mix land uses and support vibrant city centers;
2. Take advantage of existing community assets emphasizing joint use of facilities;
3. Create a range of housing opportunities and choices;
4. Foster walkable, close-knit neighborhoods;
5. Promote distinctive, attractive communities with a strong sense of place, including the rehabilitation and use of historic buildings;
6. Preserve open space, farmland, natural beauty, and critical environmental areas;
7. Concentrate new development and target infrastructure investments within the urban core of the region;
8. Provide a variety of transportation choices;
9. Make development decisions predictable, fair, and cost-effective;
10. Encourage citizen & stakeholder participation in development decisions;
11. Promote resource conservation and energy efficiency;
12. Create a Smart Growth Regional Vision and Plan;
13. Support high quality education and quality schools;
14. Support land use, transportation management, infrastructure and environmental planning programs that reduce vehicle emissions and improve air quality; and



LEGEND

- R1A-PUD = Single Family Alternative-Planned Unit Development
- R1-PUD = Standard Single Family Zone-Planned Unit Development
- R3-PUD = Multi-Family Zone-Planned Unit Development (max 29 du/acre)
- RMX-PUD = Residential Mixed Use Zone-Planned Unit Development
- C2-PUD = General Commercial Zone-Planned Unit Development
- Ag-OS-PUD = Agricultural-Open Space Zone-Planned Unit Development



Source: EDAW, 2008.



FIGURE 4-4
Proposed Zoning

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Delta Shores

15. Policies adopted by regional decision-making bodies should discourage urban sprawl, promote infill development and the concentration of development.

Airport/Meadowview Community Plan

The Airport/Meadowview Community Plan was adopted by the Sacramento City Council in 1984. The Plan establishes goals and policies to guide growth and development within the community plan area. The community plan designations for the project site are: Agriculture, Residential (4-8 dwelling units per net acre), Residential (7-15 dwelling units per net acre), Commercial, Office, High Tech Industrial, and General Public Facilities. The following land use goals and policies are applicable to the proposed project.

Goal To provide for a mix of land uses in the community which lead to a more attractive, healthy living environment.

Policy

- 1a. New residential development within existing developed areas should be compatible in density and design with surrounding areas.

South Area Community Plan

The City is anticipating adopting the South Area Community Plan along with the 2030 General plan, by the end of 2008/beginning of 2009. The project site will be located within this Community Plan; therefore, applicable policies from the plan are listed below.

LAND USE AND URBAN DESIGN

- SA.LU 1.1 **High-End Development Projects.** The City shall encourage new move-up housing and higher-end housing (including new or re-use single-family, multi-family, or mixed-use projects) to be paired with higher-value new or redeveloped retail spaces to act as a catalyst for attracting the South Area's next signature subdivision or commercial center.
- SA.LU 1.2 **Delta Shores Development.** The City shall ensure that Delta Shores accommodates sufficient office, retail, and commercial park development (adjacent to I-5/Cosumnes River Boulevard) that meets the need for a regional employment center; new residential development will accommodate the need for a diverse range of housing types and affordability and include supporting community services like a library, community center, fire station, and parks.
- SA.LU 1.13 **Delta Shores' Connectivity to South Area.** The City shall require that new neighborhoods, commercial sites, and public amenities in Delta Shores are well-connected to older, established neighborhoods adjoining the new development.
- SA.LU 1.17 **Multi-family Housing Concentration.** The City shall avoid concentrating multi-family housing in any particular neighborhood or along a single street except in transit-oriented developments.

ECONOMIC DEVELOPMENT

- SA.ED 1.5 **Retail Leakage and Mixed-Use Development.** The City shall support the development of mixed-use projects (retail, office, and housing) and non-residential uses (e.g. major hotels, Research and Development) in opportunity areas such as Florin Road, Franklin Boulevard, 47th Avenue LRT Station, and Delta Shores in order to address retail leakage and stimulate job growth in the South Area.
- SA.ED 1.8 **Delta Shores Employment.** In an effort to improve the jobs-housing balance, enhance ridership on the Blue Line LRT, and reduce congestion on the region's roadway network, the City shall strongly encourage and support development of a variety of employment-generating land uses in Delta Shores.

MOBILITY

- SA.M 1.3 **Regional Transit Bus Service Expansion and Retention.** The City shall encourage Regional Transit to expand bus service in the community to increase the number of routes, frequency of service, and hours of operation, and other areas of service deficiency.
- SA.M 1.4 **Cosumnes River Boulevard.** The City shall prioritize, in the city's Capital Improvement Program, the construction of a new interchange at I-5/Cosumnes River Boulevard and a new Cosumnes River Boulevard connector that includes a light rail right-of-way and attractive landscaping and streetscape. (MPSP/FB)
- SA.M 1.5 **Connectivity to Delta Shores Development.** The City shall require street connections between the Delta Shores development and the Meadowview neighborhoods to the north.

EDUCATION, RECREATION, CULTURE

- SA.ERC 1.2 **Park and Recreation Facility Deficiencies.** The City shall develop park and recreation facilities to remedy the deficiencies in the South Area identified by the Parks and Recreation Master Plan such as: neighborhood parks, community parks, baseball fields, dog parks, basketball courts, playgrounds, and play pools/waterspray features. (MPSP)
- SA.ERC 1.3 **Regional Park.** The City shall provide for development of a new regional park in Delta Shores that is designed to take advantage of the existing environmental features. The City shall work with the Sacramento Regional Sanitation District in connecting it with the Regional Sanitation bufferlands. (RDR/MPSP)
- SA.ERC 1.4 **Connecting Trail System.** The City shall create a trail system that connects the regional park in Delta Shores with other neighborhood, community, and regional parks in the South Area and in the region as well as existing bicycle and pedestrian trails. (

ENVIRONMENTAL RESOURCES

- SA.ER 1.1 **Delta Shores Regional Park.** The City shall integrate wildlife habitat protection into features of the new regional park in Delta Shores.

Land Use and Resource Management Plan for the Primary Zone

The Delta Protection Act was passed into law in 1992. The Act includes mandates for the designation of primary and secondary zones within the legal Delta, creation of a Delta Protection Commission, and completion of a Land Use and Resource Management Plan for the Primary Zone. As called for in the Act, a Land Use and Resource Management Plan for the Primary Zone of the Delta was prepared and adopted by the Commission in 1995 and revised in 2002. The Management Plan sets out findings, policies, and recommendations resulting from background studies in the areas of environment, utilities and infrastructure, land use, agriculture, water, recreation and access, levees, and marine patrol/boater education/safety programs.

A small portion of the project site is located within the Secondary Zone of the Delta (see Figure 4-5). Although no formal policies exist for development in the Secondary Zone, any potential impacts to resources of the Primary Zone resulting in activities in the Secondary Zone should be identified. The following Management Plan policies and recommendations are applicable to the proposed project.

LAND USEPolicy

3. New residential, recreational, commercial, or industrial development shall ensure that appropriate buffer areas are provided by those proposing new development to prevent conflicts between any proposed use and existing agricultural use. Buffers shall adequately protect integrity of land for existing and future agricultural uses. Buffers may include berms and vegetation, as well as setbacks of 500 to 1,000 feet.

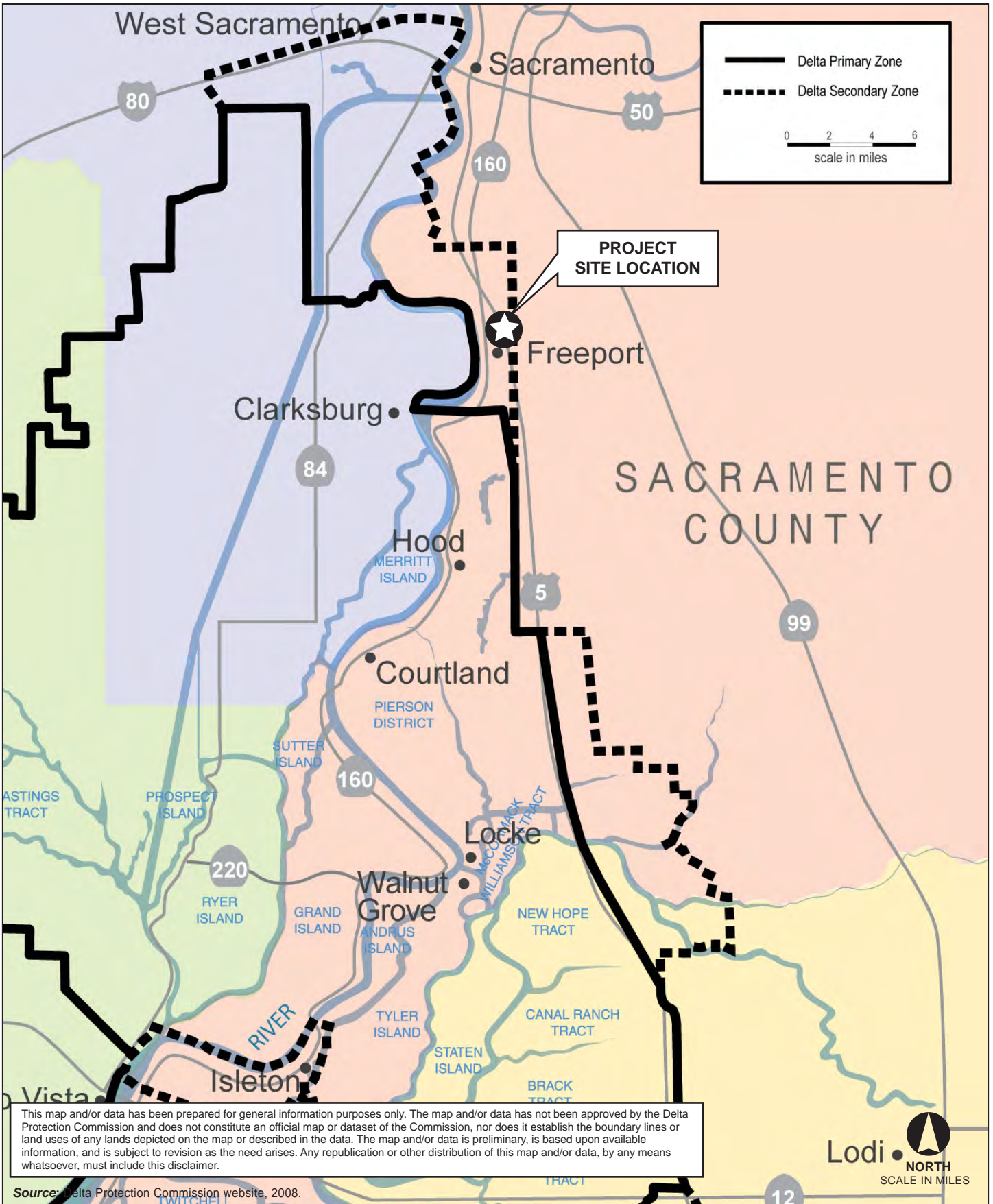


FIGURE 4-5
Delta Protection Zones

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Delta Shores



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Recommendation

5. To the extent possible, any development in the Secondary Zone should include an appropriate buffer zone to prevent impacts of such development on the lands in the Primary Zone. Local governments should consider needs of agriculture in determining such a buffer.

Delta Shores Planned Unit Development Guidelines

The project is also preparing the Delta Shores Planned Unit Development (PUD) Guidelines to establish specific design, signage, and landscaping parameters for development of the site (see Appendix C). The Guidelines are formulated in a flexible manner to provide creative solutions to various design opportunities. The Guidelines are consistent with direction provided by the 1988 General Plan, the draft Sacramento 2030 General Plan, the Airport/Meadowview Community Plan, and the South Area Community Plan.

The Guidelines include both mandatory standards and recommendations to provide a systematic development framework for Delta Shores. The Guidelines and the City's review process will ensure that development projects within the site implement the City's goals, objectives, and policies. The Guidelines influence the community's visual character and integrity by establishing standards for site planning, architecture, and landscape design for new construction.

The Guidelines will be used in the planning and design of new projects on the Delta Shores site.

Land Use Evaluation

This section evaluates the proposed project for compatibility with existing and planned adjacent land uses and for consistency with adopted plans, policies, and zoning designations. Physical environmental impacts resulting from the proposed project are discussed in the applicable technical sections in this EIR. This section differs from impact discussions in that only compatibility and consistency issues are discussed, as opposed to environmental impacts and mitigation measures. This discussion complies with section 15125(d) of the CEQA Guidelines, which requires EIRs to discuss inconsistencies with general plans and regional plans as part of the environmental setting.

This consistency analysis will provide the reader with a general overview of the City's goals and policies, from both the adopted 1988 General Plan as well as the proposed draft 2030 General Plan, and explain whether the project is essentially in harmony with the overall intent of the goal or policy. It is within the City's purview to decide if the proposed project is consistent or inconsistent with any applicable city goals or policies.

Compatibility with Existing and Planned Adjacent Land Uses**Western Portion**

Existing land uses surrounding the approximately 120 acres located in the western portion of the project site include an office complex to the north, I-5 to the east, Bartley Cavanaugh Golf Course to the south, and Freeport Boulevard and the Town of Freeport, in unincorporated Sacramento County, to the west. As shown in Figure 2-3, the project proposes residential and park uses in this portion of the project site. Placing housing near an employment source such as the office complex

immediately north of the project site provides opportunities for employees to live close to their workplace. Including a variety of housing densities along with parks and open space uses in this portion of the project site would mix well with the existing character of the area and the Town of Freeport. Additional housing that has a similar design to existing residences in the Town of Freeport would enhance the area and provide for a seamless transition from the mix of residences and local businesses in the Town of Freeport to a residential neighborhood. A more detailed discussion of architectural compatibility between uses in the Freeport area is provided in Section 2.6 Freeport Area Design Guidelines in the Delta Shores PUD Guidelines (see Appendix C). A low-density residential neighborhood adjacent to the golf course is also considered a compatible use. Appropriate sound barriers between the residential uses and I-5 along the eastern boundary of this portion of the site would help to ensure that traffic noise associated with I-5 would be minimized in the adjacent neighborhood. Sound barriers would also be constructed along Stone Creek Avenue, the western extension of Cosumnes River Boulevard, which would be a 4-lane roadway. For further discussion regarding noise, see Section 5.6 Noise.

Eastern Portion

Surrounding land uses adjacent to the eastern portion of the project site include single-family residential homes to the north in the North Delta Shores and Meadowview neighborhoods, the Sacramento Job Corps facility to the northeast, agricultural land to the east, a levee along Morrison Creek and the SRCSD open space bufferlands and regional water treatment plant to the south, and I-5 to the west.

As shown in Figure 2-3, the project includes a mix of low-, medium-, and high-density housing and parks and open space along the northern edge of the site that would provide a continuation of the existing residential units in the North Delta Shores and Meadowview neighborhoods. Two public schools, a middle school and a newly-constructed elementary school, are located immediately north of the project site. St. Anne Catholic School is located adjacent to the middle school to the east. These schools consist of various buildings used for classrooms, administration, and gymnasiums. The residential and open space uses proposed in this part of the project site would be compatible and consistent with the existing neighborhood uses to the north. Three north-south streets, including 24th Street, would extend from neighborhoods in the north onto the project site. For further discussion regarding transportation, see Section 5.9 Transportation and Circulation.

Proposed uses along the eastern boundary of the project site include medium- and high-density residential, public facilities, and parks. The Sacramento Job Corps facility and agricultural land border the site to the east. Training exercises at the Job Corps facility would occur only during the day and are not anticipated to impinge on proposed residential uses. It appears as though this facility has not been used in quite some time for any type of training exercise. However, training exercises do occur in this area and may create noise and dust for adjacent residences. The City received an application to develop the adjacent 126-acre site to the east of the project site with a mix of uses including residential, commercial, and parks. However, that development application was put on hold in 2007 and has since been withdrawn. As a result, agricultural land to the east of the project site would not be developed in the immediate future, but is expected to occur within the

buildout period of the 2030 General Plan. For a more detailed discussion of compatibility with agricultural land uses, see Section 5.2 Agricultural Resources. A proposed community park would also be located along the eastern boundary of the project site. Active recreational activities at the park would not disrupt adjacent agricultural operations.

An existing levee and open space wildlife preserve is located to the south of the project site in the SRCSD bufferlands. As shown in the proposed land use plan (see Figure 2-3), the project proposes commercial and retail uses, high-density residential, a detention basin, and park uses along the southern border of the project site. The proposed high-density residential and commercial uses located adjacent to the levee could provide the opportunity for human intrusion into the SRCSD bufferlands and Upper Beach Lake open space preserve to the south. However, there is a levee between the proposed project site and the open space preserve, providing a noise barrier, visual break, and obstacle to the biologically-sensitive open space area. The project would also install a “no public access” barrier or fence with signs clearly stating this area is closed to prevent people from entering the open space preserve from the project site. For further discussion regarding aesthetics, biological resources, and noise, see Sections 5.1 Aesthetics and Visual Resources, 5.4 Biological Resources, and 5.6 Noise.

The western edge of the project site is adjacent to I-5. As shown in the proposed land use plan, a regional commercial/retail center (Village Center) is proposed adjacent to I-5 that would enable easy freeway access for regional shoppers and would help to shield internal residential uses from freeway noise. A total of approximately 1.3 million square feet of regional retail uses are proposed in buildings that would be a maximum height of 45 feet, as described in the Delta Shores PUD Guidelines. Signage for the commercial area would be accommodated along the I-5 corridor. It is anticipated that the commercial uses would incorporate nighttime lighting of the buildings and the parking areas. While there may be some security lighting along the backside of the commercial center, light spillover from the shopping center parking lot onto I-5 would not be anticipated because the buildings would block most of the light. In the northern portion of the site a small amount of medium-density residential would be adjacent to I-5. However, the provision of a sound wall along the residential area would help to reduce highway noise for the residences. In addition, primary site access to the residential area would be away from the highway, therefore, no traffic conflicts are anticipated. For further discussion regarding lighting, noise, and traffic see Sections 5.1 Aesthetics and Visual Resources, 5.6 Noise, and 5.9 Transportation and Circulation.

Construction and Operation

The project is anticipated to be constructed in four primary phases with initial development occurring on the eastern portion of the site, east of I-5 with construction of the regional commercial or Village Center. The second phase would include development of the residential portion west of I-5. The third phase includes the area north of Cosumnes River Boulevard with the balance of the project, including the neighborhood-serving retail and residential mixed-use south of Cosumnes River Boulevard anticipated to develop as the last phase of the project. Dust, odors, construction traffic, and noise could be created during project construction. These impacts could affect existing residences and schools to the west and north of the project site as well as new residential areas that

are constructed in the earlier phases of the project. However, these nuisances would be temporary and limited to the construction of the project. For further discussion regarding dust, odors, construction traffic, and noise, see Sections 5.3 Air Quality, 5.6 Noise, and 5.9 Transportation and Circulation.

It is not anticipated that operation of the proposed project would generate excessive noise, light, dust, odors, or hazardous emissions that could be considered incompatible with existing or planned adjacent land uses. Therefore, it is not anticipated that any land use incompatibility with existing and planned adjacent land uses would occur. For further discussion regarding noise, light, dust and odors, see Sections 5.3 Air Quality and 5.6 Noise.

Compatibility Internal to the Project Site

Western Portion

Proposed uses in the western portion of the project site include a mix of low-, medium-, and high - density residential uses with two small parks, a seasonal detention basin, a mini-park and an open space buffer along the north side. The majority of the area is low density residential mixed with medium density residential, which is common in neighborhoods and is a compatible mix of land uses. The only high-density use is proposed north of Cosumnes River Boulevard adjacent to Freeport Boulevard and the proposed medium-density residential uses. Parks incorporated with residential areas provide a place for residents to gather, visual breaks in the neighborhood, and opportunities for recreation. The park areas would not include overhead lights, and therefore would not cause light spillover to potentially disturb nearby residences to the west in the Town of Freeport. In this portion of the site, there are no land uses proposed that would be considered internally incompatible.

Eastern Portion

In the eastern portion of the project site, many land uses are proposed including a mix of low, medium, and high-density residential, parks and open space, commercial and retail centers, schools, and public facilities. Near the commercial areas, there could be light and noise impacts on nearby residents during the evening hours. Medium- and high-density residential uses are adjacent to the commercial uses and could be affected by lighting, noise, or traffic produced by the commercial uses. For further discussion of lighting, noise, and traffic see Sections 5.1 Aesthetics and Visual Resources, 5.6 Noise, and 5.9 Transportation and Circulation.

A fire station is proposed just north of Cosumnes River Boulevard near the center of the project site in an area surrounded by low-, medium-, and high-density residential uses, as well as directly adjacent to a park. A fire station placed near residential uses is considered compatible, but may result in some effects on nearby residences including noise from fire trucks and 24-hour operation of the facility. For further information regarding noise, see Section 5.6 Noise.

Two elementary schools adjoining public parks are proposed for the site. One school would be adjacent to low-density residential and the open space swale area, and the other adjacent to medium-density residential. The provision of elementary schools in residential neighborhoods is

common throughout Sacramento and is considered a compatible land use. School operations could cause increased traffic and noise during school hours; however, increased traffic and noise would be mostly confined to school hours, school drop-off and pick-up times, and special events at the schools. For further discussion regarding noise and traffic, see Sections 5.6 Noise and 5.9 Transportation and Circulation.

There is one community park, several neighborhood parks, and open space areas proposed for the project. The open space areas and neighborhood parks would not be lit at night, and therefore would not be used during the nighttime hours. However, it is expected that the community park would have lighting for the purposes of evening team sport activities. Evening games at the community park could produce lighting issues, noise, and traffic that could affect nearby proposed residential areas. However, no residential uses are proposed immediately adjacent to the community park. Parks incorporated with residential areas provide a place for residents to gather, visual breaks in the neighborhood, and opportunities for recreation and would be considered compatible with the proposed surrounding uses. For further discussion of lighting, noise and traffic see Sections 5.1 Aesthetics and Visual Resources, 5.6 Noise, and 5.9 Transportation and Circulation.

Cosumnes River Boulevard would be constructed east-west through the project site, connecting Freeport Boulevard on the west to Franklin Boulevard on the east. The Cosumnes River Boulevard project would also construct an interchange on I-5. East of I-5 to 24th Street, Cosumnes River Boulevard would be a 6-lane arterial with a median. Between 24th Street and Franklin Boulevard, the street would be a 4-lane arterial. Although this street would bisect the project site, it would be the main access point to the project site and provide a major transportation route for Delta Shores residents and other area residents. Crosswalks would be provided at major intersections and a pedestrian bridge is proposed over Cosumnes River Boulevard to connect the linear open space feature to the north, to the Residential/Mixed-Use area on the south. The width of the street may be a deterrent for pedestrian activity along that corridor. However, the size of the street would be appropriate for the character of the area and would be adjacent to commercial uses, medium- and high-density residential uses, a mixed use commercial area, and a community park. It would not be adjacent to any low density residential uses or schools. Cosumnes River Boulevard would be compatible with the surrounding proposed uses. For further discussion of traffic and circulation, see Section 5.9, Transportation and Circulation.

Consistency with Adopted Plans, Policies, and Zoning

As previously mentioned, the City of Sacramento is currently in the process of updating its 1988 General Plan. Adoption of the new 2030 General Plan is anticipated to occur in late 2008. This may occur prior to the adoption of the proposed project, in which case, the EIR would be required to include an analysis of the proposed project's consistency and compatibility with the new General Plan goals and policies. However, since that plan is not yet adopted, but is anticipated to be adopted prior to the proposed project this analysis evaluates the proposed project's compatibility with the goals and policies from both the 1988 General Plan and the draft Sacramento 2030 General

Plan. This ensures that plan and policy consistency are evaluated adequately no matter when the proposed project is approved.

City of Sacramento 1988 General Plan

The City of Sacramento 1988 General Plan land use diagram designates the project site as Industrial-Employee Intensive uses with smaller areas designated for Community/Neighborhood Commercial and Office, LDR, MDR, Regional Commercial and Office (RCO), Parks-Recreation-Open Space (P/OS), and Public/Quasi-Public-Miscellaneous (P/QP). As discussed previously, the proposed project would change the land use designations to LDR, MDR, Community/Neighborhood Commercial and Office (CNO), RCO, Residential Mixed Use (RMU), and P/OS and would require a General Plan Amendment to incorporate these new designations. Under the 2030 General Plan the project site is designated Planned Development and specific land use designations will be applied to this area once the City has approved the project. A review of the project and applicable policies from the 1988 General Plan is included below followed by a review of applicable policies from the draft 2030 General Plan.

The 1988 General Plan includes specific goals and policies designed to support a balanced system of residential, office, and retail facilities throughout the city. The project includes Guidelines to guide future development of the residential and commercial areas in order to be internally consistent as well as consistent with surrounding areas, consistent with Policies 3, 6, 7, and 8 under Goal A of the Residential Land Use Element. The proposed project also proposes to set aside 15 percent of its residential units as affordable housing, as well as provide a range of housing types, consistent with Policies 1 and 2 under Goal B of the Residential Land Use Element. Development of adjacent supporting land use types, such as high-density residential located near commercial uses, helps foster and support development along major roadways and infill development by providing further economic and land use development, consistent with Policies 1, 2, and 4 under Goal C, Policy 4 under Goal C, and Policies 1 and 2 under Goal E of the Residential Land Use Element.

The project includes two commercial areas: a Village Center and a Residential/Mixed-Use area that would meet the intent of Policy 1 under Goal A of the Commerce and Industry Land Uses Element – Neighborhood/Community Commercial and Office Areas, by providing additional retail opportunities throughout the City. Incorporating residential mixed use into the Residential/Mixed-Use area and high-density residential areas near shopping and employment opportunities is also consistent with Policies 1 and 2 under Goal B of the Commerce and Industry Land Uses Element – Neighborhood/Community Commercial and Office Areas.

The provision of active parks, natural walking trails, and open space areas throughout the project site provides opportunities for landscaping consistent with Policy 1 under Goal A of the Conservation and Open Space Element – Preservation of Natural Resources. The project includes a meandering open space area and a trail system in the northeast portion of the project site adjacent to the natural drainage swale that would allow a connection to the southern portion of the site. This open space area allows for a natural separation of the project site from areas to the south, provides an area for wildlife habitat, and preserves open space near Morrison Creek, consistent with Policy 4 under Goal

A and Policies 1 and 2 under Goal E of the Conservation and Open Space Element – Preservation of Natural Resources.

The provision of active and passive recreational areas throughout the site would enhance and supplement the public recreation system while preserving natural site characteristics, consistent with Policies 1 and 5 under Goal A of the Public Facilities and Services Element – Parks and Recreation Services. The project includes placing two neighborhood parks adjacent to two elementary schools which would provide opportunities for joint-use agreements, consistent with Policies 3 and 8 under Goal A of the Public Facilities and Services Element – Parks and Recreation Services. The proposed community park would be adjacent to the new Cosumnes River Parkway, a major east-west thoroughfare, consistent with Policy 9 under Goal A of the Public Facilities and Services Element – Parks and Recreation Services.

As discussed above, the proposed project has been designed generally consistent with the City's General Plan land use goals and policies pertaining to the provision of residential, retail, parks, and open space facilities. However, the Planning Commission and City Council would determine if the project is consistent with the City's General Plan and with the vision of the City.

Draft City of Sacramento 2030 General Plan

The draft Sacramento 2030 General Plan land use and urban form diagram designates the site as Planned Development. This designation has been applied to five areas throughout the city that are currently in the review process, including Delta Shores. According to the draft 2030 General Plan, specific land use and urban form designations would be applied to these areas once the City approves their development.

The draft 2030 General Plan includes goals and policies that are aimed at more sustainable growth and development practices, including compact growth and development that reduces dependency on automobiles and focuses more on use of other modes of transit. Other goals and policies focus on the creation of diverse neighborhoods that promote alternative modes of transportation and create a sense of place while integrating mixed uses and housing types for all socioeconomic levels. The draft 2030 General Plan aims to create visually-stimulating neighborhoods and commercial centers and corridors that center around pedestrian activity and create a sense of place.

The proposed project's PUD Schematic Land Use plan and Guidelines were developed, in part, to ensure internal compatibility between various land uses, as well as meet the new 2030 General Plan goals and policies. Specifically, the proposed project includes a large regional commercial center (Village Center) that would create a gateway into the city along I-5, which would shield residences from this traffic corridor as well as place a mix of commercial uses in proximity to residential areas as well as create a gathering place for those residents, consistent with draft policies LU 2.1.3, 2.1.4, 2.4.3, 2.7.5, 5.1.1, 5.1.2, 5.1.4, 6.1.13, 6.1.14, and goals LU 5.3 and 5.4. The proposed project would also create a mixture of different housing types in a variety of well-connected but distinct neighborhoods with individualized senses of place in proximity to neighborhood services and transit corridors, consistent with goals LU 2.1, 2.5, 4.1, 4.2, and 5.1, and their associated policies, as well as additional policies LU 2.4.1, 2.7.6, 2.7.7, 2.8.4, 4.5.1, 4.5.2, 4.5.3, 5.4.3, and 6.1.8. The proposed

project also includes elements of sustainable development designs and practices, including the efficient use of land, consistent with goals LU 2.1, 2.6, 4.2, and 4.5 and their associated policies.

The proposed project has been designed to incorporate more sustainable planning practices and smart growth elements, similar to the ideals of the draft 2030 General Plan. Based on this information, the proposed project is generally consistent with the City's draft 2030 General Plan land use goals and policies pertaining to the provision of residential, retail, parks, and open space facilities. However, the Planning Commission and City Council would make the final determination of whether or not the project is consistent with the City's General Plan and with the vision of the City.

City of Sacramento Zoning Ordinance

Under the current Zoning Ordinance, the proposed project would rezone the site from Agricultural (A), Shopping Center-PUD (SC-PUD), Single Family Alternative Residential-PUD (R-1A-PUD), and Manufacturing, Research & Development-PUD (MRD-PUD) to Low Density Residential – Planned Unit Development (R-1-PUD), Medium Density Residential – Planned Unit Development (R-1A-PUD), High Density Residential – Planned Unit Development (R-3-PUD), Residential Mixed Use – Planned Unit Development (RMX-PUD), General Commercial – Planned Unit Development (C-2-PUD), and Agriculture Open Space – Planned Unit Development (AOS-PUD). Once the draft 2030 General Plan is adopted the City would update the Zoning Ordinance to be consistent with the new General Plan. The new General Plan designates the project site Planned Development, so new zoning districts would be applied to this area if the City approves the project. This would allow the City to ensure that the new zoning districts are compatible with the new 2030 General Plan.

The PUD designation allows for more flexibility in the design of the project than is otherwise allowable through strict application of the City's zoning regulations. The Delta Shores PUD Guidelines would serve to guide detailed development of the project site to provide general consistency with the City's General Plan while allowing some flexibility in the densities developed on the project site. This flexibility would also apply to zoning districts that would be changed after the adoption of the draft 2030 General Plan. The PUD Guidelines identify densities that vary from those identified in the City's Zoning Ordinance; however these density ranges are within the density ranges defined by the Zoning Ordinance, and therefore are consistent.

The R-1 designation allows for low density residential development in the form of single-family detached residences. The proposed project would develop 675 low density residential units on approximately 137 acres. These uses would be located in the western portion of the project site and in the north-central part of the eastern portion of the project site, as shown in Figure 2-3. The R-1 designation has an approximate density of 6 to 8 dwelling units per acre (du/ac). However, the proposed project would develop these uses from 4 du/ac to a maximum of 7 du/ac. The zoning ordinance specifies minimum lot sizes of 52 feet by 100 feet (5,200 square feet [sf]) for interior lots and 62 feet by 100 feet (6,200 sf) for corner lots. The proposed project would have R-1 lot sizes ranging from 5,000 sf to 7,200 sf.

The R-1A designation is a low- to medium-density residential zone which can include attached or detached residential units that vary from standard single-family residential. Housing types could

include attached or detached units, townhouses, cluster housing, condominiums, cooperatives, or other similar projects. The allowable density range for the R-1A zone is 8 du/ac to 15 du/ac with a target of 10 du/ac, as per code. The proposed project would develop 2,492 medium density units on approximately 178 acres throughout the project site with a density of 8 to 14 du/ac.

As currently proposed, the project's R-1 density would not be consistent with the density restrictions under current zoning. However, the creation of a PUD zoning overlay would be required to provide flexibility in project design and would establish guidelines for allowable building heights, densities, etc. However, the density for R-1 would not exceed 8 du/ac. The PUD guidelines, if approved by the City, would rectify any conflicts with the City Zoning Ordinance, and no amendments would be necessary. In addition, it is anticipated that the city will rezone the site consistent with the new land use designations proposed under the 2030 General Plan.

The R-3 designation is a multi-family zone intended for apartments. This zone typically is used as a buffer along major streets and shopping centers. The minimum area per unit is 1,500 sf, and the maximum density is 29 du/ac. The proposed project would develop 1,738 high-density units on 64 acres in areas along major streets, near the Village Center and Residential/Mixed-Use area, and in three other areas near the northwest, northeast, and southeast corners of the project site with a density of 15 to 27 du/ac.

The RMX designation allows for mixed use development including residential, office, and limited commercial uses. The proposed project would develop residential and ground-floor retail in the Residential/Mixed-Use area and would be consistent with the RMX designation. The maximum allowable density is 36 du/ac. The project would develop 187 units on approximately 20 acres, with densities ranging between 23 to 29 du/ac, which is below the zoning ordinance's threshold.

The C-2 designation is designed to provide areas for the sale of commodities or services, and includes a wide range of the types of commodities and services that can be sold. The proposed project would develop a large Village Center that would serve as a major shopping center along I-5 in the eastern part of the project site. It is likely to include "big box" development in the form of a strip center.

The A-OS designation is designed to preserve agricultural uses and open space. The proposed project would develop active and passive recreation parks, public plazas, and open spaces. The project would develop approximately 118 acres of active and passive recreation space. Active recreation parks could include uses such as playgrounds, picnic areas, soccer facilities, softball and baseball fields, basketball and tennis courts, a community center and other park amenities. A 27-acre Community Park would be located at the southern end of the project site, adjacent to a large open space area. Another open space area in the northern part of the project site would be a wetland preserve area.

City of Sacramento - Smart Growth Principles

The Smart Growth Implementation Strategy was adopted as part of the General Plan in 2001. Development of the proposed project within the city limits and near existing transportation corridors,

such as I-5 and Highway 160, supports Principles 2, 7, 14, and 15. An extension of light rail is currently proposed to the east of the project site. Development of the proposed project near an anticipated light rail line supports Principle 14 by providing alternative modes of transportation and reducing vehicle emissions and reducing air quality impacts. The proposed project includes a Village Center and a Residential/Mixed-Use area which would serve as community centerpieces surrounded and supported by multiple land uses, meeting guidelines set forth by Principles 1, 5 and 15. The development of low-, medium-, and high-density residential and residential mixed use near other uses such as retail supports Principles 3 and 4. Linking residential and commercial uses through active parks, walking trails, and open space corridors supports Principles 4, 6, 8, and 14. Developing two elementary schools with adjoining joint-use parks supports Principles 2 and 13. By meeting many of the smart growth principles, the project would be consistent with the City's Smart Growth Implementation Strategy.

Airport/Meadowview Community Plan

The adopted Airport/Meadowview Community Plan is intended to guide development in the community in conjunction with the City's General Plan. The proposed project would develop several land uses including residential with varying densities, commercial, mixed use, parks, and open space. This mix of uses would provide for a balanced neighborhood, consistent with the Land Use goal. The variety of housing densities that would be provided by the proposed project would be compatible with the surrounding existing housing types, including low density to the north and west. This is consistent with Policy 1a under the Land Use Element. By meeting the relevant land use goals and policies, the project would be consistent with the Airport/Meadowview Community Plan.

South Area Community Plan

The draft South Area Community Plan includes the project site. The City anticipates adopting this plan by the end of 2008, along with the 2030 General Plan. Therefore, the project's consistency with this plan is included in the analysis. The South Area Community Plan, similar to the Airport/Meadowview Community Plan is intended to guide development in conjunction with the City's 2030 General Plan (once adopted). The draft South Area Community Plan contains many policies specific to the development of Delta Shores, in particular for the development of the Delta Shores areas to include mixed-use residential, commercial, retail, and park uses with diverse housing options and connectivity to other areas within the community plan area through both transit and bikeways (policies SA.LU 1.2, SA.LU 1.13, SA.ED 1.5, SA.ED 1.8, SA.M 1.5, SA.ERC 1.3, SA.ERC 1.4 and SA.ER 1.1). The proposed project contains these elements, consistent with the plan. Additional policies from the South Area Community Plan that are not specific to the Delta Shores development include providing a mixture of housing types, including the development of higher-end housing, as well as increased availability of retail, commercial, employment opportunities, and community services in the South Area. The plan also includes policies to increase connectivity of areas within the South Area to other areas, as well as improve internal connectivity within the plan area. The proposed project includes these elements, and as such, is considered to be consistent with the general intent of the South Area Community Plan.

Land Use and Resource Management Plan for the Primary Zone

The Land Use and Resource Management Plan for the Primary Zone outlines policies and recommendations specifically for areas within the Primary Zone of the Delta. The project site is located within the Secondary Zone of the Delta and, therefore, is not expressly subject to the policies outlined in the Management Plan. However, even though the project is not within the Primary zone the activities of the project are not anticipated to adversely affect the Primary Zone. Land Use Policy 3 says that new development shall ensure that appropriate buffer areas are provided to prevent conflicts between any proposed use and existing agricultural use. The area surrounding the project site is mostly developed except for a small area to the east of the project site, which is active agriculture, and the open space area to the south of the site in the SRCD bufferlands. The agricultural area to the east would be buffered by the recreational and open space areas proposed in the eastern portion of the project site. Areas to the south of the project site would be buffered by an existing levee. Provision of open space and use of the levee as a buffer to surrounding agricultural uses would adhere to Land Use Recommendation 5. Therefore, the proposed project would be generally compatible with the Land Use and Resource Management Plan for the Primary Zone.

Delta Shores Planned Unit Development Guidelines

The intent of the Delta Shores PUD Guidelines is to ensure that buildout of the proposed project is implemented in a consistent manner and that design of the project's features are compatible both internally and with surrounding existing uses. As a condition of approval, the proposed project would be required to adhere to the recommendations set forth in the Guidelines. Because the proposed project would be required to comply with the guidelines outlines, the project would be consistent with the Guidelines.

5. ENVIRONMENTAL ANALYSIS

5.0 INTRODUCTION TO THE ANALYSIS

5.0 INTRODUCTION TO THE ANALYSIS

SCOPE OF THE EIR ANALYSIS

The Environmental Analysis chapter of this Draft EIR discusses the environmental and regulatory setting, impacts, and mitigation measures for each of the following technical issue areas (Sections 5.1 through 5.10):

- 5.1 Aesthetics and Visual Resources
- 5.2 Agricultural Resources
- 5.3 Air Quality
- 5.4 Biological Resources
- 5.5 Hydrology and Water Quality
- 5.6 Noise
- 5.7 Public Services
- 5.8 Public Utilities
- 5.9 Transportation and Circulation
- 5.10 Global Climate Change

SECTION FORMAT

Chapter 5 is divided into technical sections (e.g., 5.1 Aesthetics and Visual Resources) that present for each environmental issue area a description of the project site's existing condition or environmental setting followed by the regulatory setting, standards of significance, and a discussion of the impacts and mitigation measures as it pertains to a particular issue. The environmental setting provides a point of reference, or a baseline from which to assess the environmental impacts of the proposed project and project alternatives. The environmental and regulatory setting description in each section is followed by an impacts and mitigation measures discussion. The impact and mitigation measures portion of each section includes impact statements, which are 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. The degree to which the identified mitigation measure(s) would reduce the impact is also described.

An analysis of cumulative impacts follows the project-specific impacts and mitigation measures evaluation in each section. As defined in CEQA Guidelines section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other past, present and reasonably foreseeable projects causing related impacts. An introductory statement that defines the cumulative analysis methodology and the cumulative context being analyzed for respective sections (e.g., the Sacramento Valley Air Basin, build out of

the City's General Plan) is included at the beginning of the cumulative discussion. In some instances a project-specific impact may be considered less than significant, but would be considered potentially significant in combination with development of the surrounding area. In some instances, a potentially significant impact may result on a project level but would not result in a cumulatively considerable impact. The cumulative impacts analysis is formatted the same as the project-specific impacts, as shown above.

A "significant effect" is defined by section 15382 of the CEQA Guidelines 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, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment...[but] may be considered in determining whether the physical change is significant."

The analysis of environmental impacts considers both the construction and operational phases associated with implementation of the proposed project. As required by section 15126.2(a) of the CEQA Guidelines, direct, indirect, short-term, long-term, on-site, and/or off-site impacts are addressed, as appropriate, for the environmental issue area being analyzed. This EIR assumes compliance with applicable laws and other regulations.

Each section also includes Standards of Significance, which identify the City of Sacramento standards used to evaluate impacts of the analyzed project. The Standards of Significance used for this project were derived from the City of Sacramento's established significance standards. Where applicable, local responsible agency thresholds were incorporated into the Standards of Significance.

An example of the section format is shown below.

5.X-X Statement of impact for the proposed project in bold type.

The discussion of impacts for the proposed project is presented in paragraph form and a determination of the impact's significance (prior to mitigation) is identified. If no mitigation is required, the determination of significance is stated in **bold, italic type**. If mitigation is required, the determination of significant prior to mitigation is stated in *italic type*.

Mitigation Measure

Description of the level of significance of the impact after mitigation is identified in **bold, italic type**.

5.X-X *Statement of what, if any, mitigation measures are required.*

TERMINOLOGY USED IN THE EIR

This Draft EIR uses the following terminology to describe environmental effects of the proposed project:

Standards of Significance: A set of criteria used by the lead agency to determine at what level or “threshold” an impact would be considered significant. Standards of Significance used in this EIR are the standards of significance used by the City of Sacramento. If additional standards were determined to be necessary to amplify City standards, then questions from Appendix G of the CEQA Guidelines were included.

Less-than-Significant Impact: A project impact is considered less than significant if it does not reach, or trip, the standard of significance and would therefore cause no substantial change in the environment (no mitigation required).

Potentially Significant Impact: A potentially significant impact is an environmental effect that may cause a substantial adverse change in the environment; however, additional information is needed regarding the extent of the impact to make the determination of significance. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.

Significant Impact: A project impact is considered significant if it results in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project effects in the context of specified significance criteria. Mitigation measures and/or project alternatives are identified to reduce these effects to the environment, where feasible.

Significant and Unavoidable Impact: A project impact is considered significant and unavoidable if it would result in a substantial adverse change in the environment that cannot be feasibly avoided or mitigated to a less-than-significant level if the project is implemented. Findings of Overriding Considerations must be adopted by the lead agency if impacts cannot be mitigated.

Cumulative Impacts: According to CEQA, “cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines, Section 15355). CEQA requires that cumulative impacts be discussed when the “project’s incremental effect is cumulatively considerable” (CEQA Guidelines, section 15130 (a)).

Mitigation Measures: The CEQA Guidelines (section 15370) define mitigation as:

- a) Avoiding the impact altogether by not taking a certain action or parts of an action;
- b) Minimizing impacts by limiting the degree of magnitude of the action and its implementation;
- c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- e) Compensating for the impact by replacing or providing substitute resources or environments.

5.1 AESTHETICS AND VISUAL RESOURCES

5.1 AESTHETICS AND VISUAL RESOURCES

INTRODUCTION

This section provides a description of existing visual conditions in the vicinity of the proposed project site and describes the changes to those conditions that would result from implementation of the project. The analysis focuses on the change in visual resources, effects on views, compatibility with the visual characteristics of surrounding uses, and the potential that sensitive receptors (e.g., adjacent residential uses) could be disturbed by light and glare generated or reflected by new development within the project site.

No comments related to aesthetics and visual resources were received in response to the Notice of Preparation (see Appendix B).

Information to prepare this section was obtained from a site visit in March 2007, review of the City of Sacramento (1988) General Plan and draft 2030 General Plan, the Sacramento City Code, the Draft Delta Shores Planned Unit Development (PUD) Guidelines (August 2008) (see Appendix C), the *Scenic Highway Guidelines* from Caltrans, Sacramento County Zoning Code, as well as project-specific material provided by the project applicant.

ENVIRONMENTAL SETTING

Regional Setting

The proposed project site is located in the southern portion of the City of Sacramento adjacent to Interstate 5 (I-5). The city limits make up the project's southern boundary. The project site is one of the last large tracts of undeveloped land within the city. Residential and urban development has occurred north and east of the project while the site itself has remained in various forms of agricultural production. There are existing single-family neighborhoods located to the north and east; the Town of Freeport, in unincorporated Sacramento County, is located west of the project site along the Sacramento River; the Sacramento Regional County Sanitation District (SRCSD) bufferlands that surround the SRCSD Regional Wastewater Treatment Plant (RWWTP) are located south of the project site; and existing residential and commercial uses are located further south along I-5 in the city of Elk Grove.

Site Characteristics

The approximately 782-acre project site is almost entirely vacant and undeveloped, supporting agricultural cultivation and undeveloped land. The project site is bisected by I-5 with approximately 662 acres located east of I-5 and the remaining 120 acres located west of I-5 (see Figure 2-2 in Chapter 2, Project Description). The topography of the project site is essentially flat with an elevation ranging from approximately 3 feet on the eastern portion of the site to approximately 15 feet on the western portion of the site. Historically, tomatoes, sugar beets, wheat, corn, safflower, and alfalfa were grown on the project site. Current crops include wheat, safflower, and alfalfa. In the winter and spring, the project site contains areas with varying heights of grasses and/or areas

where the soil has been tilled, depending on agricultural activity. In the summer and fall months, grasses tend to turn brown and dry due to a lack of rain.

Morrison Creek runs south of the project site adjacent to the SRCSD bufferlands east of I-5, but is not within the project site boundaries. A recently improved levee north of Morrison Creek makes up the southern boundary of the project site. There are approximately 27.51 acres of waters of the U.S., including wetlands, present within the project site. Only a limited number of trees are present on the site. West of I-5 includes the majority of trees including oaks, walnut trees, and some cottonwoods along the western boundary and lining the edge of the golf course on the southern boundary.¹ East of I-5 there are primarily cottonwoods and oaks scattered throughout the site. Overhead PG&E power lines traverse the northern portion of the site from east to west.²

In the western portion of the project site, immediately east of Highway 160,³ is an area that contains several buildings associated with an abandoned dairy farm and various pieces of farm equipment. Only three structures remain standing (the dairy barn, creamery, and water tank house) and would be removed as part of the proposed project. See the Cultural Resources discussion in the NOP/IS (Appendix A) for impacts related to the removal of these structures.

Figure 5.1-1 shows an aerial of the project site with 12 viewpoint locations. Figures 5.1-2 through 5.1-7 include photographs from these viewpoints taken during a site visit in March 2007. These photos show the existing conditions on the project site.

Views of the Project Site

The project site encompasses a large area in south Sacramento. Because the project site is flat and very few trees are present, all portions of the site, east and west of I-5 are visible to drivers from the northbound and southbound lanes of I-5. Highway 160 runs along the westernmost boundary of the project site through the Town of Freeport. Because Highway 160 is bounded by residential and commercial uses, only the western portion of the project site west of I-5 is visible from this highway.

Bartley Cavanaugh Golf Course is located south of the project site and west of I-5. A dense grouping of trees is located between the golf course and the portion of the project site immediately to its north (see Viewpoint 1 of Figure 5.1-2). The trees block any views from the golf course onto the site. However, the southern portion of the project site, east of I-5, is visible from the northern portion of the golf course. The project site would also be visible from the 3-story office building (Verizon) located north of the project site and west of I-5. An existing park, the Bill Conlin Regional Youth Sports Complex, immediately north of the office building has limited views of the northern portion of the project site east of I-5.

1 ECORP Consulting, Inc., *Arborist Survey Report for West Delta Shores*, June 12, 2007, pages 3 and 5.
2 ECORP Consulting, Inc., *Arborist Survey Report for East Delta Shores*, June 15, 2006, page 3.
3 Freeport Boulevard turns into Highway 160 at the intersection with Meadowview Road.



FIGURE 5.1-1
Viewpoint Location Map

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Delta Shores



Viewpoint 1: View looking southeast at I-5 and Bartley Cavanaugh Golf Course



Viewpoint 2: View looking northeast toward I-5 and the future Cosumnes River interchange

Source: PBS&J, 2007.



FIGURE 5.1-2
Views from the West Portion of the Project Site, West of I-5

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Delta Shores



Viewpoint 3: View looking east across the project site



Viewpoint 4: View looking southeast across the project site

Source: PBS&J, 2007.



FIGURE 5.1-3
Views from the Future Cosumnes River Interchange, East of I-5

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Delta Shores



Viewpoint 5: View looking east toward the levee at the southern boundary of the project site



Viewpoint 6: View looking northwest toward I-5

Source: PBS&J, 2007.



FIGURE 5.1-4
Views from the Southwest Portion of the Project Site, East of I-5

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Delta Shores



Viewpoint 7: Views looking north across the project site



Viewpoint 8: Views looking east toward the Sacramento Regional County Sanitation District bufferlands

Source: PBS&J, 2007.



FIGURE 5.1-5
Views from the South Central Portion of the Project Site, East of I-5

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Delta Shores



Viewpoint 9: Views looking southeast across the project site



Viewpoint 10: Views looking southwest across the project site

Source: PBS&J, March 2007.



FIGURE 5.1-6
Views from the North Central Portion of the Project Site, East of I-5

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Delta Shores



Viewpoint 11: Views looking southwest across the project site



Viewpoint 12: Views looking southwest toward the Sacramento Job Corps facility

Source: PBS&J, 2007.



FIGURE 5.1-7
Views from the South End of 24th Street

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Delta Shores

The existing Meadowview neighborhood is located immediately north of the project site. This neighborhood consists of single-family homes that have been built over the last 30 years. Homes immediately adjacent to the project site can easily view the site. However, the site becomes less visible from homes that are farther north because their view is blocked by other homes.

The project site would be visible from the Sacramento Job Corps (Corps) facility located northeast of the project site. The Job Corps facility is enclosed with a chain-link fence. A majority of this facility consists of relatively flat open space which is used as a heavy equipment training area. There is an existing line of trees that borders the facility on its west side (see Figure 5.1-1). This tree coverage helps to obstruct direct views from the facility onto the project site.

Existing neighborhoods further east of the Corps facility are able to view the project site; however, there is an existing piece of agricultural land between the project site and these neighborhoods that was at one time proposed for future residential development. The application for the development of that site has been withdrawn, and while there are currently no other plans to develop that site at this time, it is designated for development and could potentially be developed in the future. Current views of the project site are a significant distance away and people from the neighborhood view the project site in the background, as opposed to the agricultural land, which is in the middleground and foreground.

Bordering the eastern and southern portions of the project site are open space bufferlands owned by SRCSD. The SRCSD owns approximately 2,500 acres that surround the SRWTP, which extends more than one mile south of the project boundary. Residential homes that are located south of the treatment plant in the city of Elk Grove have no direct views of the project site.

Surrounding Area Characteristics

The area surrounding the project site consists of built-up land with a mix of agricultural land and open space. Views from the project site vary between planned residential neighborhoods to the north and east and agricultural lands and open space and rural residential to the west and south. The characteristics of the surrounding uses are discussed in detail below.

Residential Uses

The Meadowview neighborhood borders the project site to the north and consists of one- to two-story single-family homes. This neighborhood is a part of a larger network of subdivisions that have been developed in south Sacramento over the past 30 years. Homes located closest to the northern boundary of the project site have been constructed within the past 5 to 10 years. The Town of Freeport, located west of the project site along the east bank of the Sacramento River, is characterized by a mix of architectural styles and rural characteristics. Residential, commercial, and agricultural buildings are located along Highway 160 which is the main access road through town. The building arrangement along the street is varied with many buildings set back while others are built to the property line. Building architecture includes one-story commercial stores with flat roofs and two-story residential homes.

Public Uses

A K-8 school, the John Still Center, is located immediately north of the project site, east of I-5. St. Anne Catholic School is located adjacent to the John Still Center to the east. These schools consist of various buildings used for classrooms, administration, and gymnasiums. A new elementary school was recently constructed adjacent to the John Still Center on the west. North of the project site and west of I-5 is the Bill Conlin Regional Youth Sports Complex. The park is approximately 20 acres and contains three baseball fields, one regulation size soccer field, two bantam (smaller than regulation) soccer fields, and picnic areas with barbeques, restrooms, and a concession stand. The Bartley Cavanaugh Golf Course is located south of the project site, west of I-5. The Sacramento Job Corps (Corps) facility is located adjacent to the project site to northeast. The Job Corps facility is enclosed with a chain-link fence and a majority of this facility consists of relatively flat open space used as a heavy equipment training area. There is an existing line of trees that borders the facility on its west side.

Bufferlands

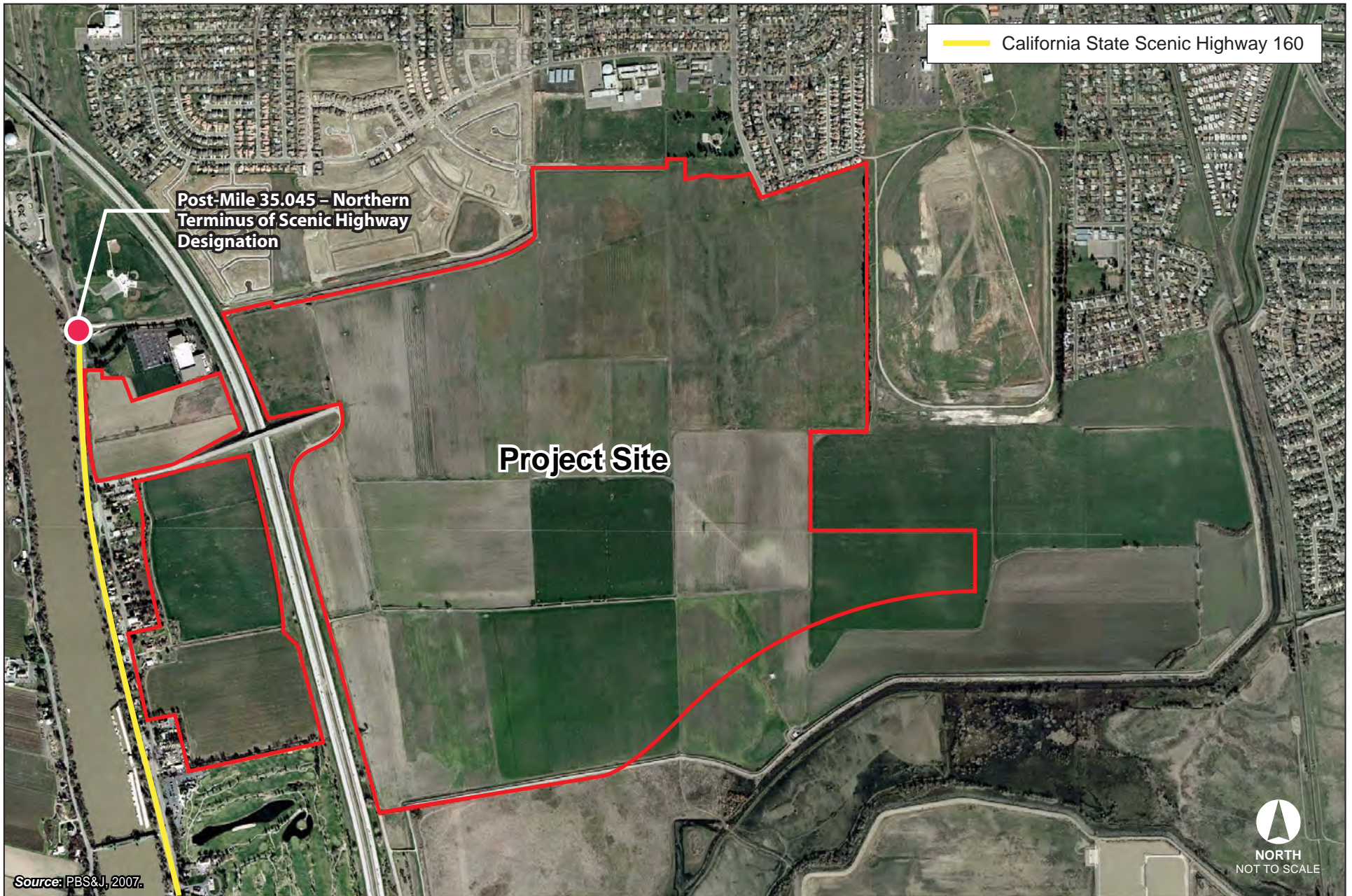
SRCSO owns approximately 2,500 acres located around the SRWTP referred to as the bufferlands, which were designated by SRCSO to remain a buffer area between the treatment plant and the surrounding area. The bufferlands consist of undeveloped fields and large bodies of water including the Upper Beach Lake Wildlife Area; the Laguna Wetlands which adjoins Laguna Creek with a permanent lake and both natural and constructed seasonal pools; and constructed wetlands. The bufferlands border the project site on its southern and southeastern boundaries.

Freeways

Interstate 5 (I-5) is a major north-south freeway through the State of California and provides direct access from the project site into the city of Sacramento. The portion of I-5 located within the project site is a four-lane freeway with a large median separating the north and southbound lanes. There is an existing overpass along I-5 in the middle of the project site that connects Stone Creek Avenue west of I-5 to a levee access road east of I-5. This overpass is proposed to connect to the future Cosumnes River Boulevard extension that would bisect the project site.

Highway 160, also known as Freeport Boulevard, is designated as a California State Scenic highway from the Contra Costa County line to the southern city limits of Sacramento. The majority of the highway runs on the top of levees along the Sacramento River. The state scenic highway designation continues through the Town of Freeport along the western edge of the project site and ends where the city limits cross over Highway 160 at Post Mile 35.045 (see Figure 5.1-8).⁴

4 Dennis Cadd, State Scenic Highway Coordinator, Landscape Architecture Program, Caltrans, written communication, April 2, 2007.



Source: PBS&J, 2007.

FIGURE 5.1-8
Scenic Highways in the Project Vicinity



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Delta Shores

Light and Glare

Light that falls beyond the intended area of illumination is referred to as light trespass. Types of light trespass include spillover light and glare. Spillover light, which is light that illuminates surfaces beyond the area intended, is typically caused by artificial lighting sources, such as from building security lighting, signage, parking lot lighting, roadway lighting, and stadium lighting on playing fields. Because light dissipates as it moves farther from its source, the light intensity of the lighting source is often increased to compensate for this dissipated light, which can further increase the amount of light that illuminates adjacent uses. Spillover light can adversely affect light sensitive uses, such as residential neighborhoods at nighttime. However, nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments. Depending on the proposed use, well-designed energy-efficient fixtures that face downward, use cutoff type fixtures or shielded light fixtures, emit the correct intensity of light for the use, and incorporate energy timers would be less obtrusive and more efficient features. Minimizing this form of obtrusive light is an important environmental consideration.

The second type of light trespass is glare, which can result from sunlight or from artificial light sources reflecting off of building exteriors, such as glass windows or other highly reflective surface materials. Glare results when a light source in the field of vision is brighter than the eye can comfortably accept. Squinting or turning away from a light source is an indication of glare. The presence of a bright light in an otherwise dark setting may be distracting or annoying, referred to as discomfort glare, or it may diminish the ability to see other objects in the darkened environment, referred to as disability glare. Glare is particularly associated with high light intensity, as measured in candelas, emitted at angles near horizontal (75 to 90 degrees from straight down). Glare can be reduced by design features that block direct line of sight to the light source and that direct light downward, with little or no light emitted at high (near horizontal) angles, since this light would travel long distances. Cutoff-type light fixtures minimize glare because they emit relatively low intensity light at these angles. Glare resulting from sunlight reflecting off building exteriors can be reduced with design features that use low-reflective glass and exterior materials and colors that absorb instead of reflect light.

Existing Light and Glare Conditions

As discussed above, the project site is almost entirely vacant and undeveloped, supporting agricultural cultivation and open space. There are no significant light sources located on the project site. There are also no structures on the site that would create a significant hazard due to glare from reflective materials. The only structures on the project site are the abandoned dairy farm structures east of Highway 160. These structures have cement walls and rusted tin roofs that do not create a source of glare.

Adjacent uses, such as the Town of Freeport west of the proposed project site contain various lighting sources for building security and minimal street lighting for nighttime security. The Meadowview neighborhood north of the project site contains residential lighting as well as street lighting for safety. The Sacramento Job Corps facility, the Bill Conlin Regional Youth Sports Complex, and the Bartley Cavanaugh Golf Course do not contain large stadium lights. The buildings

associated with these uses (e.g., the golf course club house, the park concession area, and restrooms) use minimal building lighting for security purposes at night.

Regulatory Context

Federal

There are no federal regulations regarding aesthetics and visual resources that are applicable to the proposed project.

State

California State Scenic Highway Program

The California State Scenic Highway Program was created by the Legislature in 1963 and is administered by the California Department of Transportation (Caltrans). Its purpose is to preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to highways. Highways are evaluated on how much of the natural landscape a passing motorist sees and the extent to which visual intrusions (e.g., buildings, noise barriers) affect the scenic corridor. The program includes a list of highways that are either designated or eligible for designation as scenic highways. Highway 160, also known as River Road or Freeport Boulevard, is designated as a State Scenic Highway from the Contra Costa County line to the southern limits of the City of Sacramento. Caltrans describes Highway 160 in Sacramento County as a road that meanders through historic Delta agricultural areas and small towns along the Sacramento River.⁵ Highway 160 is designated as a State Scenic Highway throughout its length in Sacramento County. The state scenic highway designation continues through the Town of Freeport along the western edge of the project site and ends where the City of Sacramento city limits cross over Highway 160 at Post Mile 35.045, northwest of the project site.

Local

City of Sacramento 1988 General Plan

The City of Sacramento 1988 General Plan is currently being updated and is anticipated to be adopted in late 2008 or early 2009. Below is a list of goals and policies that relate to the protection of visual resources from the 1988 General Plan as well as proposed applicable goals and policies from the 2030 General Plan. The project's consistency with policies from the adopted 1988 General Plan as well as the proposed 2030 General Plan is included in the analysis.

RESIDENTIAL LAND USE ELEMENT

Overall Goal A Maintain and improve the quality and character of residential neighborhoods in the City.

Goal A Improve the quality of residential neighborhoods Citywide by protecting, preserving and enhancing their character.

5 California Department of Transportation, California Scenic Highway Mapping System, <www.dot.ca.gov>, accessed March 22, 2007.

HOUSING ELEMENT**Goal 5 Housing Quality and Neighborhood Improvement**Policies

- 5.A The City shall expand the design review program to encourage residential development of high architectural and structural quality which is compatible with neighboring land uses.
- 5.B The City shall continue to work with neighborhood residents in ensuring that all our neighborhoods are safe, decent and pleasant places to live and work. This includes working with schools, community oriented policing, addressing problem properties, and ensuring new development is compatible with existing neighborhoods.

CONSERVATION AND OPEN SPACE ELEMENT

Overall Goal Achieve and maintain a balance among the conservation, development and utilization of planned open space and natural resources.

Goal B Retain the riparian woodlands and grassland vegetation along the waterways and floodways in North Natomas and South Sacramento insofar as possible.

Policy

1. Protect the wooded areas along the waterways and drainage canals insofar as possible.

Goal E Establish development standards for water related open space lands throughout the City to enhance the visual amenities of these uses.

Policies

2. Explore ways to preserve the undeveloped open space areas and wildlife habitats along Dry Creek, Arcade Creek, Magpie Creek, the East Drainage Canal, the area south of Woodlake Park, Morrison Creek, Elder Creek, Laguna Creek, Sacramento Drainage Canal, and Beach Lake.
4. Establish a system of open space, buffers and view sheds that act as neighborhood gateways, and as visual and physical community separators and greenbelts to define the limits of urban growth.

City of Sacramento 2030 General Plan

The City anticipates adopting its new 2030 General Plan by the end of 2008. Therefore, applicable policies from the 2030 General Plan are included below.

LAND USE AND URBAN DESIGN (LU)

Goal LU 2.4 City of Distinctive and Memorable Places. Promote community design that produces a distinctive, high-quality built environment whose forms and character reflect Sacramento's unique historic, environmental, and architectural context, and create memorable places that enrich community life.

Policies

- LU 2.4.1 **Unique Sense of Place.** The City shall promote quality site, architectural and landscape design that incorporates those qualities and characteristics that make Sacramento desirable and memorable including walkable blocks, distinctive parks and open spaces, tree-lined streets, and varied architectural styles.
- LU 2.4.2 **Responsiveness to Context.** The City shall promote building design that respects and responds to the local context, including use of local materials, responsiveness to Sacramento's climate, and consideration of cultural and historic context of Sacramento's neighborhoods and centers.
- LU 2.4.3 **Enhanced City Gateways.** The City shall ensure that public improvements and private development work together to enhance the sense of entry at key gateways to the city.

Goal LU 4.1 Neighborhoods. Promote the development and preservation of neighborhoods that provide a variety of housing types, densities, and designs and a mix of uses and services that address the diverse needs of Sacramento residents of all ages, socio-economic groups, and abilities

Policies

LU 4.1.1 **Mixed-use Neighborhoods.** The City shall promote neighborhood design that incorporates a compatible and complementary mix of residential and non-residential (e.g., retail, parks, schools) uses that address the basic daily needs of residents and employees.

LU 4.1.2 **Neighborhood Amenities.** The City shall encourage appropriately-scaled community-supportive facilities and services within all neighborhoods to enhance neighborhood identity and provide convenient access within walking and biking distance of city residents.

LU 4.1.3 **Walkable Neighborhoods.** The City shall encourage the design and development of neighborhoods that makes them pedestrian-friendly including features such as short blocks; broad sidewalks (e.g., lighting, landscaping, adequate width); tree-shaded streets; buildings that define and are oriented to adjacent streets and public spaces; limited driveway curb cuts; paseos and pedestrian lanes; alleys, traffic-calming features; and convenient pedestrian street crossings.

Goal LU 4.2 Suburban Neighborhoods. Encourage the creation of more complete and well-designed suburban neighborhoods that provide a variety of housing choices and mix of uses that encourage walking and biking.

Goal LU 5.2 Suburban Centers. Promote more attractive, pedestrian-friendly suburban centers that serve surrounding neighborhoods and businesses as local gathering places where people shop and socialize.

Policies

LU 5.2.2 **Enhanced Design Character.** The City shall encourage renovation, infill, and redevelopment of existing suburban centers that reduces the visual prominence of parking lots, makes the centers more pedestrian friendly, reduces visual clutter associated with signage, and enhances the definition and character of the street frontage and associated streetscape.

LU 5.2.3 **Public Space.** The City shall work with suburban centers to integrate pedestrian amenities, traffic-calming features, plazas and public areas, attractive streetscapes, shade trees, lighting, and open spaces within the existing center to create destinations for area residents to shop and gather.

Goal LU 5.4 Regional Commercial Centers. Establish major mixed use activity centers through development and reinvestment in regional commercial centers that are vibrant, regionally-accessible destinations where people live, work, shop, and congregate in a mix of retail, employment, entertainment, and residential uses.

ENVIRONMENTAL RESOURCES (ER)

Goal ER 7.1 Visual Resource Preservation. Maintain and protect significant visual resources and aesthetics that define Sacramento.

Policies

ER 7.1.2 **Landscaping.** The City shall require new development be located and designed to visually complement the natural environment/setting when near the Sacramento and American rivers, and along streams.

ER 7.1.3 **Minimize Removal of Existing Resources.** The City shall require new commercial, industrial, and residential development to minimize the removal of mature trees, and other significant visual resources present on the site.

ER 7.1.4 **Standards for New Development.** The City shall seek to ensure that new development does not significantly impact Sacramento's natural and urban landscapes.

ER 7.1.5 **Lighting.** The City shall minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary.

ER 7.1.6 **Glare.** The City shall require that new development avoid the creation of incompatible glare through development design features.

Airport/Meadowview Community Plan

As part of the Sacramento 2030 General Plan process, the Airport/Meadowview Community Plan will also be updated and incorporated into the General Plan. The Sacramento 2030 General Plan may not be completed prior to the completion of this document (the anticipated completion date is late 2008 or early 2009), so the 1988 General Plan and Airport/Meadowview Community Plan policies are also being used in this policy review.

LAND USE

Goal A **To provide for a mix of land uses in the community which lead to a more attractive, healthy living environment.**

South Area Community Plan

The City anticipates adopting the South Area Community Plan as part of the 2030 General Plan. However, the plan does not contain any policies relevant to aesthetics or visual resources at the project site.

Sacramento County

Highway 160 is within Sacramento County, just outside of the city of Sacramento city limits. Because Highway 160, which is designated as a scenic corridor, is located immediately adjacent to the western portion of the project site, the Sacramento County Zoning Code regulations for scenic corridors are reviewed for this project. As defined in Sacramento County Zoning Code Section 130-151, a scenic corridor is a strip of land on each side of a stream or roadway which is generally visible to the public traveling on such a route. The scenic corridor for a freeway includes the horizontal distance of 1,000 feet from the center of the freeway. The scenic corridor for a scenic highway or scenic country route includes a horizontal distance of 500 feet on each side of the center line with a minimum distance of 300 feet beyond the right-of-way or the edge of the stream.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

A description of the proposed project site was prepared based on a site visit in March 2007. The site plan, the Delta Shores PUD Guidelines, and photographs of the site were all used to evaluate the potential effects of project development on the visual character of the project site and the nearby area. The analysis focuses on the manner in which development could change the visual elements or features that exist on the proposed project site.

The visual impacts of the proposed project are analyzed in relation to the change from the existing undeveloped rural character of the site to the developed suburban character at project buildout. It should be noted that the positive or negative value attached to changes in visual character is largely subjective. Rather than placing a judgment that change is positive or negative, the visual impacts of the proposed project are analyzed in relation to existing conditions, which consist of the

undeveloped project site that contains fallow agricultural lands, the surrounding residential neighborhoods, the Town of Freeport, and the adjacent open space south of the project site which is part of the SRCSD Bufferlands. Sensitive receptors (i.e., those most affected by changes to the visual character of the project site) include residents in adjacent neighborhoods and travelers on scenic Highway 160 west of the project site.

Because the perception of visual change is subjective, this analysis does not include a discussion of the positive or negative aspects of specific design elements of the project.

The visual effects of construction activities are not evaluated in this section because they would be intermittent and temporary.

The City of Sacramento has not established any policies that guide the analysis of scenic resources. Because Highway 160 is located within Sacramento County but adjacent to the western boundary of the project site, the Sacramento County guidelines are used to determine impacts from an increased potential to affect motorists traveling on this state designated Scenic Highway.

Standards of Significance

For the purposes of this EIR, impacts on aesthetics and visual resources are considered significant if the proposed project would:

- have a demonstrable negative aesthetic affect that would substantially degrade the existing visual character or quality of the project site and its surroundings;
- create a new source of substantial light or glare that would adversely affect day or nighttime views;
- cast light onto oncoming traffic or residential uses; or
- affect a scenic vista or adopted view corridor.

The perception of a visual impact is personal and subjective; what one person may perceive as a negative impact another may find visually pleasing. Even those experienced in urban design principles and architecture can have differing opinions on the visual “quality” of a particular project. Therefore, because of the subjective nature of interpreting visual impacts, this analysis does not rely on opinion to make a determination as to the significance of impacts. Rather, the analysis relies upon the judgment of the reviewing bodies of the City of Sacramento to apply the City’s adopted design goals and policies and on the Delta Shores PUD Guidelines (see Appendix C). It is assumed that compliance with the Guidelines prepared for the project along with adopted plans, as deemed appropriate by the City, would ensure that a project would be substantially consistent with the direction of future development within the city, and, as a result, would not create significant negative aesthetic effects.

Project-Specific Impacts and Mitigation Measures

5.1-1 Development of the proposed project could have a demonstrable negative aesthetic effect that could substantially degrade the existing visual character or quality of the project site and its surroundings.

Proposed Project Characteristics

The proposed project includes the development of an approximately 782-acre master planned community which would integrate residential, retail, commercial, and recreational opportunities with parks, schools, and open space (see Figure 2-3, Land Use Plan, in Chapter 2, Project Description).

The project would be designed to contain several communities of neighborhoods with distinct characteristics. These neighborhoods would accommodate standard single-family homes, single-family attached and detached units, townhouses, condominiums, and apartments. The project would also accommodate new housing types, such as small-lot homes, detached townhomes, zipper lots, zero-lot-line homes, detached cluster homes, and a variety of attached residential for-sale and rental units. The neighborhoods would be connected through a grid of streets and interconnected pedestrian paths and bike trails. All streets would provide landscaped public spaces that encourage pedestrian traffic. A mixture of naturalistic materials, such as stone, brick, wood, and stucco, would be used for the exterior of the proposed residential units. Building and roof colors would also be designed to include earth tones with low reflectivity. Highly reflective glass would be prohibited for use in windows, glazed doors, skylights, or other exterior applications.⁶

The park and open space system includes a variety of recreational options, including informal gatherings in urban plazas at the commercial centers; organized sports and informal play activities in the playgrounds and sports fields of the community, neighborhood, and mini parks; and options for nature viewing spaces adjacent to wetland preserve. These areas would be linked by trail corridors and pathways.

Existing Views of and Around the Project Site

As shown in Figures 5.1-2 through 5.1-7, the project site is characterized as a large open space area with fallow agricultural lands on both sides of I-5. The project site has remained undeveloped and has historically been used to grow tomatoes, sugar beets, wheat, corn, safflower, and alfalfa. The site is located adjacent to the southern edge of the city of Sacramento city limits, and is one of the largest remaining undeveloped tracts of land in the city. Residential development in this portion of the city continues from the downtown area south and currently ends with the Meadowview neighborhood, located immediately north of the project site. Immediately south of the city limits and the proposed project site, are the SRCSD open space bufferlands which are owned and maintained by SRCSD. The project site boundary and the bufferlands are separated by a levee. The bufferlands include the Upper Beach Lake Wildlife Area, the Laguna Wetlands which adjoins Laguna Creek with a permanent lake, natural and constructed seasonal pools, and constructed wetlands.

6 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 2-31.

Immediately east of the project site is the Sacramento Job Corps facility, which is an open space area enclosed by a chain-link fence that is used for heavy equipment and vehicle training. The open space area is generally covered with grasses, but there are also portions that contain exposed soil. The northern portion of the job corps facility site contains associated buildings for administration, maintenance, and training. These buildings are typical commercial warehouse style buildings. Further east, beyond the job corps facility are additional residential neighborhoods within the city. These well-established neighborhoods contain one- to two-story single-family homes. Southeast of the job corps facility there are also undeveloped agricultural lands which are similar to the project site. West of the project site is the existing Town of Freeport with a mix of residential, commercial, and agricultural buildings. The building arrangement along the street is varied with many buildings set back while others are built to the property line. Building architecture includes one-story commercial stores with flat roofs and two-story residential homes. On the west side of I-5, the Bartley Cavanaugh Golf Course is located south of the project site and the Bill Conlin Regional Youth Sports Complex is located north of the project site. The park is approximately 20 acres and contains three baseball fields, one regulation size soccer field, two bantam (smaller than regulation) soccer fields, and picnic areas with barbeques, restrooms, and a concession stand.

Sensitive receptors include residents in the adjacent Meadowview and Freeport neighborhoods to the north and west, respectively, and motorists on scenic Highway 160 west of the project site. People traveling north and south on I-5 would be able to view the project site from both sides of the freeway and would experience a change in visual character associated with changing the current undeveloped nature of the site to a developed environment. Potential impacts on drivers along I-5 are discussed under this impact, while impacts to the views from Highway 160, a State Designated Scenic Highway, are discussed below in Impact 5.1-3.

Views from I-5

Vehicles traveling along I-5 would experience a change in visual character from an undeveloped agricultural area to a suburban, built-up environment. West of I-5 the proposed project would consist of low-density one and two-story residential neighborhoods along with multi-story medium and high-density units, street trees, and landscaping consistent with this type of development. East of I-5, the proposed project includes additional low-density, medium-density, and high-density residential uses, one large regional commercial center (the Village Center), a second smaller mixed-use retail area (Residential/Mixed-Use area), and parks/open space. The project proposes to subdivide approximately 379 acres into residential lots with building heights for medium- and low-density residential uses at a maximum of 35 feet.⁷ Approximately 145 acres would be dedicated to parks, open space, trails, a wetland preserve area, and detention facilities. The retained open space would exist in an altered condition within an urban setting. A total of approximately 147 acres would be designated for commercial development with the remaining area set aside for schools, utilities, a private community center, and roadways, including development of internal residential collector streets. Building heights for commercial buildings and high-density residential uses could be a

7 EDAW, *Delta Shores PUD Guidelines*, August 2008, Table 2.2, page 2-13.

maximum of 45 feet.⁸ The size and scale of the proposed development, if constructed to its maximum height and density, would be a considerable change when compared to the existing site visual character.

It should be noted that the proposed project would serve as a visual gateway to the city of Sacramento. Major signage oriented toward I-5 to identify Delta Shores as a gateway into the city would include two large signs up to 75-feet in height adjacent to the Village Center and an entry monument at the southwest corner of the Village Center that would define the project site as such. Interstate 5 is a major freeway that passes through the project site. The western portion of the project site would be visible to vehicles traveling on I-5. Their views would consist of one- to two-story residential neighborhoods with a 2.6-acre grassy area and associated landscaping. The eastern portion of the project site would also be visible to vehicles traveling on I-5. Their views would consist of the back side of commercial buildings up to 45-feet tall, which would be part of the Village Center, along with associated signs designed to coordinate with commercial building façades. The buildings' façades would be facing east, toward the retail/commercial area parking lots. Thus, vehicles from I-5 would have views of the back of these buildings which would be designed to match the front of the building along with landscaping to help soften views. Commercial buildings would use colors and high-quality materials to emphasize earth tones and natural materials such as stone, stucco, and wood. Commercial lighting would be designed to avoid directing unwanted glare offsite and bulbs and reflectors used for external illumination would be shielded to reduce glare. Flashing, pulsating, rotating, or otherwise moving light fixtures would be prohibited.

Views from the North

From the adjacent North Delta Shores neighborhood, views of the project site as an undeveloped agricultural area would be replaced with views of medium-density residential uses (8-14 du/ac). The medium-density units would be characterized as single-family attached and detached units in lot sizes ranging from garden clusters (2,300 sf) to micro-lot homes (3,000 sf) to entry-level single-family homes (4,000 sf). The maximum height for the medium-density units would be 35 feet. Views of other uses within the project site would be obstructed by the residential units closest to the North Delta Shores neighborhood. There would also be an open space buffer south of Centerline Drive and Richfield Way along the existing powerline easement with the medium-density residential units and park located to the south.

Although no predetermined architectural styles have been selected for the residential uses, varied and articulated elevation designs that provide a high level of visual interest are encouraged. The Delta Shores PUD Guidelines (see Appendix C) encourage avoiding monotonous, "cookie-cutter" subdivisions. A series of interlocking volumes rather than monolithic blocks are proposed to create more "human-scale" architecture.⁹ No more than two of the same model with the same architectural style would be used on a single block face.¹⁰ Forward-facing living spaces would visually dominate

8 EDAW, *Delta Shores PUD Guidelines*, August 2008, Table 2.2, page 2-13.

9 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 2-22.

10 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 2-19.

the street.¹¹ The following architectural detailing elements may be included in the design of homes: wood or wrought iron railing or accent designs; wood or stucco trim surrounds, headers, and sills; decorative ceramic or clay tiles and pipe vents to match the color palette of the home; exterior wall- and building-mounted light fixtures that are integrated into the architectural concept of the house; and/or other authentic details specific to the architectural style.¹² In addition, a mixture of naturalistic materials, such as stone, brick, wood, and stucco, would be used for residential buildings. Building and roof colors would also be designed to include earth tones with low reflectivity.

From the existing Meadowview neighborhood east of 24th Street, views would consist of medium-density residential units similar to those described above. The existing homes south of Laramore Way would be separated from the medium-density residential with a landscaped open space buffer. Views would include residential units which would be characterized by townhomes, condominiums, and apartments. As discussed above for medium-density residential units, the Delta Shores PUD Guidelines encourage a broad mix of architectural styles to create diversity within neighborhoods. High-density residential units would be designed to ensure building variation remains within the context of the overall design theme for the planned area.

A portion of the project site, west of 24th Street, extends farther north and includes low-density residential units. These units would be directly south of the existing schools (the John Still Center, St. Anne Catholic School, and the recently constructed new elementary school) and Meadowview Park. The low-density residential units would be characterized by standard single-family homes on lot sizes ranging between 5,000 and 7,200 sf and densities between 4 and 7 du/ac. Heights would not exceed 35 feet in residential areas. Similar to the medium- and high-density residential uses, specific architectural styles have not yet been determined for Delta Shores; however, guidelines have been established to ensure consistent design quality and character of housing types. The design of homes in Delta Shores would emphasize simple, rectilinear architectural forms and massing. While the architecture would create variety between individual homes, it should also establish a distinctive neighborhood identity. Specific to single-family homes, residential units along the same street would use a complementary and coordinated “family” of styles. Variation of architectural styles along the same street is appropriate if the overall massing, form, and setbacks of the homes are similar. Complementary colors, materials, and landscape treatments would provide a cohesive identity to the neighborhood.

Views from the West

From the Town of Freeport, views to the east would change from an existing undeveloped agricultural area to a developed neighborhood containing low-, medium and high-density residential units. Because the Town of Freeport contains a variety of building styles and characters, ranging from century-old residential styles to more contemporary commercial styles, architectural styles for the proposed residential neighborhood adjacent to Freeport Boulevard would contain a number of different styles to improve compatibility with the existing development. Styles would include Italianate, Victorian, Queen Anne, Craftsman styles, California bungalow, Spanish Colonial, Tudor,

11 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 2-22.

12 EDAW, *Delta Shores PUD Guidelines*, August 2008, pages 2-30 to 2-31.

English and French County homes and cottages, and American Four Square styles. A landscaped buffer would be provided along Highway 160 in the western portion of the project site, along the western and southern edges of the proposed low-density residences. A 6-acre park surrounded by existing and new trees would be adjacent to Highway 160 and would be visible from uses along this highway.

Conclusion

The project would substantially change views to nearby sensitive receptors because the undeveloped, agricultural character of the project site would be eliminated and replaced with residential and commercial buildings as high as 55 feet in residential mixed-use buildings within the project site. However, the proposed project includes a number of landscaped and open space setback buffers between existing uses and the project to create compatibility and reduce potential conflicts between uses. The scale and density of site development would be a significant change from existing conditions, and would substantially change the visual character of the views to and from the site. However, project development would comply with standards set forth in the Delta Shores PUD Guidelines (see Appendix C), which would define the character of the project, and would be subject to review and approval by the City, which includes review by staff, the Planning Commission and the City Council. The reviewing bodies would use the criteria listed in the City's adopted planning documents in analyzing the proposed project design. Specifically, the Delta Shores PUD Guidelines contain design characteristics and styles to maintain the existing character of the Town of Freeport. The Guidelines also contain design principles that ensure compatibility with the existing Meadowview and North Delta Shores neighborhoods immediately adjacent to the project site to the north. In addition, as discussed in Chapter 4.0, Land Use, the proposed project would be generally consistent with the City's current 1988 General Plan and draft 2030 General Plan and adopted Airport/Meadowview Community Plan and draft South Area Community Plan policies.

Although the proposed project would result in a significant change in existing visual character, the project would be required to comply with the Delta Shores PUD Guidelines. Compliance with applicable Guidelines would make certain that any changes to visual character in the project vicinity would be reduced through compatible design and appropriate landscape and open space buffers. Therefore, the proposed project would not substantially degrade the existing visual character or quality of the site or its surroundings and this impact would be ***less than significant***.

Mitigation Measure

None required.

5.1-2 The proposed project could create new sources of light and glare that could adversely affect on-site and adjacent uses.

The approximately 782-acre project site has previously been used for agricultural purposes and does not contain any artificial lighting (i.e., building or street lights). The project site does not contribute any measurable amount of light or glare to the area. A majority of ambient nighttime light emanates from the Meadowview and North Delta Shores neighborhoods north of the project site

and, on a larger scale, the entire city of Sacramento. The project site is one of the last remaining areas of the city that does not experience this type of urban ambient night lighting.

There are no existing structures on-site that would create a significant hazard due to glare from reflective materials. The only structures on the project site are the vacant dairy farm buildings east of Highway 160. They have cement walls and rusted tin roofs that do not create any glare, and these structures would be removed as part of the proposed project.

Adjacent uses, such as the Town of Freeport, the Meadowview neighborhood, and the North Delta Shores neighborhood contain various lighting sources for the security of residential and commercial buildings and minimal street lighting for nighttime safety. The Sacramento Job Corps facility, the Bill Conlin Regional Youth Sports Complex, and the Bartley Cavanaugh Golf Course only contain minimal lighting sources (e.g., the golf course club house, park concession area, and restrooms) which are primarily used for security purposes at night.

Residential

As discussed in the Delta Shores PUD Guidelines, a mixture of naturalistic materials, such as stone, brick, wood, and stucco, would be used for residential buildings. Building and roof colors would also be designed to include earth tones with low reflectivity. Highly reflective glass would be prohibited for use in windows, glazed doors, skylights, or other exterior applications.¹³ The lighting in residential neighborhoods would include street lighting and lighting on buildings for safety and security, similar to the existing residential neighborhoods north and west of the project site. Landscaped buffers would provide a physical and visual separation between non-compatible land uses to screen light.¹⁴ According to the Guidelines, residential lighting and street lighting should avoid light spillage onto adjoining uses.¹⁵ Front porch lighting would consist of down lights or recessed porch ceiling lighting with appropriately shielded fixtures.¹⁶

Commercial

The commercial areas of the proposed project would be designed to serve both the Delta Shores community and the larger south Sacramento regional area. The project includes commercial areas; the Village Center and the Residential/Mixed-Use area. As shown in Figure 2-3 in Chapter 2, Project Description, both retail areas include surface parking lots that would need to be lit in the evening. Colors and high-quality materials would be used to emphasize earth tones and natural materials such as stone, stucco, and wood. Commercial lighting would be designed to avoid directing unwanted glare offsite and bulbs and reflectors used for external illumination would be shielded to reduce glare. Flashing, pulsating, rotating, or otherwise moving light fixtures would be prohibited.¹⁷ According to the PUD Guidelines, all lighting fixtures should relate to the style and character of lighting for the entire commercial area. Distinctive accent lighting would be used on

13 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 2-31.

14 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 2-17.

15 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 2-17.

16 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 2-45.

17 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 3-20.

buildings to highlight individual tenants, provided that the lighting is complementary to the lighting style of the whole commercial area. Indirect “wall washing” is also encouraged for buildings along I-5 and major adjacent streets.¹⁸ Signage would be designed to enhance individual buildings as well as the overall character of the commercial area. Signage materials could include: sculpted wood, metal, or signfoam forms; screens, grids, or mesh; cut or fabricated steel; dimensional letterforms with seamless edges; and opaque acrylic materials with matte finishes.¹⁹ Signs would be designed to minimize light intrusion and glare. Pedestrian areas would not be lighted by pole fixtures more than 14 feet in height or bollard-type fixtures no more than 3 feet in height. Parking lot lighting would not exceed 40 feet in height. Specialized pedestrian-scale lighting would be provided along pedestrian walkways within commercial parking lots. In addition, landscape uplights would be selected to minimize glare.²⁰ Down lighting and other specialized fixtures that reduce glare would also be used.²¹

Parks

The Community Park, proposed in the southeastern portion of the project site, also has the potential to create a new source of light that could adversely affect on-site uses. There could be a number of large turf areas that could have lighted sports fields and/or tennis courts. In addition, lighting along pedestrian pathways and other pedestrian amenities (i.e., restrooms, signage, drinking fountains, and trash/recycling receptacles) would be provided in the park. Neighborhood Parks, which would be distributed throughout the plan area, would not include lights for nighttime use to prevent light spillage to surrounding residential neighborhoods. Any lighting that could be provided in Neighborhood Parks is described in the Guidelines.²² For parks less than one acre in size, the Guidelines state that lighting should be carefully designed to provide safety during night but prevent light spillage to surrounding residential neighborhoods.²³

The PUD Guidelines contains specific building material requirements for the residential, commercial, and park land uses within the proposed project to minimize glare on adjacent uses (i.e., the use of naturalistic materials on building exteriors). The Guidelines also contain specific lighting designs for the residential, commercial, and park land uses to minimize spill light on adjacent uses (i.e., downlighting and shielding). Although parking lot lighting and street lighting, the source most likely to interfere with nighttime views both due to the brightness of the lights and the height of the standards or light poles, could result in increased sky glow, the project would be appropriately designed to reduce sky glow and light spill through lighting restrictions discussed above. Reflective surfaces would be minimized to the extent possible to reduce glare introduced to the area as a result of the project. Because the proposed project would be required to follow the Guidelines, lighting and glare impacts would be reduced through project design resulting in a **less-than-significant impact**.

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- 18 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 3-20.
 19 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 3-29
 20 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 3-20.
 21 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 4-19.
 22 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 5-8.
 23 EDAW, *Delta Shores PUD Guidelines*, August 2008, page 5-13.

Mitigation Measure

None required.

5.1-3 The proposed project could affect a scenic vista or adopted view corridor.

The proposed project is bordered by Highway 160, a designated scenic highway on its western boundary; therefore, changes to the visual character of the project site have an increased potential to affect views for those individuals traveling along this highway. The City of Sacramento has not established any policies that guide the analysis of scenic resources. Highway 160 is located within Sacramento County, but adjacent to the western boundary of the project site. Because the City has not adopted any guidelines for view corridors, the Sacramento County guidelines are used to discuss effects on views associated with implementation of the project.

The Sacramento County Zoning Code defines a scenic corridor as a strip of land on each side of a stream or roadway which is generally visible to the public traveling on such a route. The scenic corridor for a freeway includes the horizontal distance of 1,000 feet from the center of the freeway. The scenic corridor for a scenic highway or scenic country route includes a horizontal distance of 500 feet on each side of the center line with a minimum distance of 300 feet beyond the right-of-way or the edge of the stream. According to the County's definition, the scenic corridor for Highway 160 is considered to be the horizontal distance of 500 feet from the center of the highway. This is approximately half the distance from Highway 160 to I-5 to the east. Because the Sacramento River levee bounds the Town of Freeport to the west, the only views to the west are of the few residences and retail stores that back up to the levee along the Sacramento River.

To maintain the consistency and integrity of the California Scenic Highway Program, Caltrans, in conjunction with the Departmental Transportation Advisory Committee (DTAC), conducts a monitoring program in which the appropriate local jurisdiction is asked to attest to continued enforcement of the approved corridor protection measures once every five years. The District Scenic Highway Coordinator inspects the scenic highway to confirm compliance. Caltrans describes Highway 160 in Sacramento County as a road that meanders through historic Delta agricultural areas and small towns along the Sacramento River.²⁴ Caltrans, with the advice of DTAC, is authorized by statute to revoke official scenic highway designations if the scenic corridor protection program has ceased to be enforced or if it is determined that the scenic appearance of the corridor has not been protected.

The *Scenic Highway Guidelines* from Caltrans contains examples of visual intrusions along scenic corridors. Visual intrusions are considered minor, moderate, or major as shown below. When more

24 California Department of Transportation, California Scenic Highway Mapping System, <www.dot.ca.gov>, accessed March 22, 2007.

than one example is listed, only one example need be applicable for an intrusion to occur. For residential and commercial development:²⁵

- Minor intrusion: Widely dispersed buildings. Natural landscape dominates. Wide setbacks and buildings screened from roadway. Exterior colors and materials are compatible with environment. Buildings have cultural or historical significance.
- Moderate intrusion: Increased number of buildings, but these are complimentary to the landscape. Smaller setbacks and lack of roadway screening. Buildings *do not* degrade or obstruct scenic view.
- Major intrusion: Dense and continuous development. Highly reflective surfaces. Buildings poorly maintained. Visible blight. Development along ridge lines. Buildings *degrade or obstruct* scenic view.

As discussed above, Highway 160 follows the Sacramento River through small river towns in the historic Delta area including Isleton, Walnut Grove, Courtland, Hood, and Freeport. Views to the west from Highway 160 through the Town of Freeport consist of residential and commercial homes built as early as the 1920s, and the earthen wall of the levee that runs adjacent to the Sacramento River. Views to the east from Highway 160 consist of residential and commercial businesses, as well as agricultural land. There are no views of the project site that would be considered a visual intrusion, per the City or guidance included in the County Guidelines.

Views of the project site from Highway 160, north of the Bartley Cavanaugh Golf Course to the south of the proposed I-5 interchange, would be altered because of the project's development of new low-density and medium-density residential units, as well as approximately 20 acres of parks/open space in the area west of I-5. The construction of new buildings would result in a more significant visual intrusion than existing residential and commercial buildings along Highway 160; however, the new residential units would be constructed behind the existing residences and small commercial uses located directly adjacent to Highway 160 and would not be directly visible from the scenic highway. There would also be a landscape buffer between the proposed residential units and the rear of the existing residential and commercial buildings located along Highway 160. A 6-acre park would be located adjacent to Highway 160 and would also assist in shielding views of the residential neighborhoods. Medium and high-density residential uses would be constructed north of Stone Crest Avenue, along with a 3-acre park and nearly 8-acre open space area. The high density residential area, park, and open space would be located directly adjacent to Highway 160. Residential uses with smaller setbacks and lack of roadway screening is considered a moderate visual intrusion if the buildings do not degrade or obstruct a scenic view. Because the buildings would be compatible with the Delta Shores PUD Guidelines and the Freeport Area Design Guidelines (Section 2.6 of the Delta Shores PUD Guidelines), the buildings are not assumed to degrade the character of the Town of Freeport. Views beyond I-5 would be obstructed by existing buildings and new residential buildings; however, there is a potential for vehicles traveling along

25 California Department of Transportation, Scenic Highway Guidelines, <www.dot.ca.gov/hq/LandArch/scenic/guidelines/scenic_hwy_guidelines.pdf>, accessed February 12, 2008, Appendix E, Examples of Visual Intrusions Along Scenic Corridors.

Highway 160 to view the large commercial buildings proposed adjacent to I-5 to the east. The maximum height of the commercial buildings would be 45 feet; however, because trees and other landscaping is proposed, it is anticipated that any views of these buildings would be screened from vehicles traveling on Highway 160 it is likely that the commercial uses would result in a moderate visual intrusion. In addition, views of the commercial buildings would be outside of the 500-foot scenic corridor, established by the Sacramento County General Plan.

The proposed project would result in moderate visual intrusions along scenic Highway 160, but would not result in any major visual intrusions. As discussed above, the introduction of residential uses and parks that would be shielded from most vehicles would not result in visual intrusions greater than what is currently experienced by travelers on Highway 160. Therefore, this is considered a *less-than-significant-impact*.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

The cumulative context for the evaluation of cumulative impacts on aesthetics addresses the effects of the proposed project in combination with other development in the City of Sacramento immediately adjacent to the site. The cumulative context for light and glare would be other development that could affect the same sites that would be affected by light or glare generated by the project. There is no additive or cumulative effect associated with scenic vistas or viewsheds; therefore this issue is not addressed in the cumulative analysis.

5.1-4 The proposed project, in combination with other development in the City of Sacramento, could result in a demonstrable negative aesthetic effect.

The proposed project is located adjacent to the southern boundary of the city of Sacramento city limits and is one of the last remaining large areas of undeveloped land in the city. The City's urban area currently extends from downtown Sacramento and ends with the North Delta Shores and Meadowview neighborhoods immediately north of the project site. Implementation of the proposed project would extend the City's urban area all the way to the city limits. The project site is restrained by the SRCSD's bufferlands to the south, where development is not likely to occur. The city is also restrained from development to the west by the Sacramento River and the existing community of Freeport. Because this area of south Sacramento currently consists of a developed urban environment with a mix of commercial and residential uses, future construction in this area would most likely consist of on-going City of Sacramento redevelopment and roadway projects. One of the last remaining possible greenfield projects in the south Sacramento area includes the 126-acre site adjacent to the eastern portion of the project site. An application to develop this site was filed with the city but has since been withdrawn, but the site is designated for development and is expected to be developed prior to buildout of the new general plan. It is anticipated that any future projects in the city would be generally consistent with the community design pattern established in the City's new 2030 General Plan and embodied in the South Area Community Plan. The Zoning Code would also

ensure that the proposed project and other cumulative projects would develop consistent with the General Plan and the future development's surroundings, in terms of design, massing, and building heights. Future development, including the proposed project, would also be subject to design review, which would consider the types and placement of planned development in the city. The project's contribution is not considerable. Therefore, cumulative development would not have a demonstrable negative aesthetic effect and the cumulative change in visual character of the areas surrounding the project site would be *less than significant*.

Mitigation Measure

None required.

5.1-5 The proposed project, in combination with cumulative development surrounding the project site, could create new sources of light and glare.

The project site currently consists of a previously undeveloped, fallow agricultural area surrounded by existing residential neighborhoods to the north and the Town of Freeport to the west. Agricultural land is located immediately east of the project site and the SRCSD's bufferlands are located immediately south. Currently, there are no light sources located on the project site. Sources of night lighting emanate from the existing neighborhoods north and west of the project site and from traffic traveling on I-5. The project would include exterior lighting for parking, security, and signage. New light sources associated with proposed project development would be designed to reduce impacts of glare and spill light on adjacent non-compatible uses. The proposed project would contribute to the existing ambient light that currently exists in the developed neighborhoods immediately north of the project site; however, the project's contribution to new light sources and glare that could create hazards would not be considerable.

Because the project's contribution to existing ambient nighttime lighting would not be considerable, this impact is considered *cumulatively less than significant*.

Mitigation Measure

None required.

5.2 AGRICULTURAL RESOURCES

5.2 AGRICULTURAL RESOURCES

INTRODUCTION

This section of the EIR provides an overview of the effect on agricultural resources that could result from implementation of the proposed project. Issues specifically evaluated in this section with regards to agricultural resources include the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance to urban uses; Williamson Act contracts, potential conflicts with nearby agricultural uses; and potential conflicts with City of Sacramento General Plan policies adopted to protect agricultural resources.

One comment letter was received in response to the NOP regarding agricultural resources (see Appendix B). The comment, from the California Department of Conservation (CDC), notes that the project site would convert active agricultural land to non-agricultural uses. The letter requests that the EIR assess the impacts of the proposed project on agricultural uses, and suggests mitigation measures to reduce any impacts. This issue is addressed in this section.

Information was obtained from project plans and graphic renderings, the City of Sacramento 1988 General Plan, draft City of Sacramento 2030 General Plan, the City of Sacramento Zoning Ordinance, CDC – Farmland Mapping and Monitoring Program (FMMP), and other environmental documentation prepared for the project area.

ENVIRONMENTAL SETTING

Existing Agriculture

Beginning in 1867, agriculture rather than gold mining became the primary producer of local exports. The Sacramento River was of key importance, providing easy and cheap transportation for the agricultural wealth of the valley to either a processing plant or export facility. The Sacramento Valley became one of the world's most important grain producing regions.

The city of Sacramento was built on some of the most fertile soil found anywhere. Although much of the city's agricultural lands have been consumed by urbanization, there is some fertile land still under cultivation in the North Natomas Community and adjacent county lands. Likewise, the area south of Sacramento and extending into the Delta; and the area west of Sacramento and extending towards Davis and beyond are high producing agricultural lands. The land to the east of Sacramento becomes less and less fertile for row crops, and is better suited for grazing livestock.

As the population of Sacramento County has grown, the trend to convert agricultural lands to non-agricultural uses has increased. The city of Sacramento is mostly urbanized, with relatively small pockets of active agricultural areas remaining.

A large portion of the project site is currently in active agricultural production, primarily planted with oat hay (March 2007).¹ Previous plantings included tomatoes, sugar beets, wheat, corn, safflower, and alfalfa.

California Department of Conservation Important Farmland Classifications

The FMMP combines technical soil ratings and current land use information to create an inventory of Important Farmland. Information on soils is primarily taken from the U.S. Department of Agriculture soil surveys. The CDC divides Important Farmland into four categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. See Table 5.2-1 for detailed definitions for each designation.

The most recent FMMP data for Sacramento County (2006) inventoried 372,090 acres of agricultural land in the county in 2006.² The County contains 106,667 acres of Prime Farmland, 51,214 acres of Farmland of Statewide Importance, 15,268 acres of Unique Farmland, and 41,961 acres of Farmland of Local Importance, totaling 215,113 acres of Important Farmland.³ The survey also inventoried 156,997 acres of Grazing Land, 175,523 acres of Urban and Built-up Land, and 70,242 acres of Other Land.⁴ Between 2004 and 2006, 12,564 net acres of agricultural land in Sacramento County were converted to nonagricultural use.⁵

The FMMP designates the project site as Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, Urban/Built Up, and Other (see Figure 5.2-1 and Table 5.2-2).⁶ Note that the table shows the gross acreage of the site of approximately 800 acres, which includes land for the Cosumnes River Boulevard and the new interchange project. To be conservative, this gross acreage was determined to be appropriate for the analysis of the loss of farmland. Definitions of those land types are identified below.⁷ The 18-acre differential between the gross acreage (farmland) and net acreage (project site) is attributable to land occupied by the proposed I-5 Interchange and Consumnes River Boulevard project.

1 PBS&J, site visit, March 2, 2007.

2 California Department of Conservation, Farmland Mapping and Monitoring Program, *Sacramento County 2004-2006 Land Use Conversion*, Table A-24, <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2004-2006/conversion_tables/saccon06.xls>, accessed July 28, 2008.

3 California Department of Conservation, Farmland Mapping and Monitoring Program, *Sacramento County 2004-2006 Land Use Conversion*, Table A-24, <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2004-2006/conversion_tables/saccon06.xls>, accessed July 28, 2008.

4 California Department of Conservation, Farmland Mapping and Monitoring Program, *Sacramento County 2004-2006 Land Use Conversion*, Table A-24, <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2004-2006/conversion_tables/saccon06.xls>, accessed July 28, 2008.

5 California Department of Conservation, Farmland Mapping and Monitoring Program, *Sacramento County 2004-2006 Land Use Conversion*, Table A-24, <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2004-2006/conversion_tables/saccon06.xls>, accessed July 28, 2008.

6 California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, <www.consrv.ca.gov>, 2006.

7 California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, <www.consrv.ca.gov>, accessed July 9, 2007.

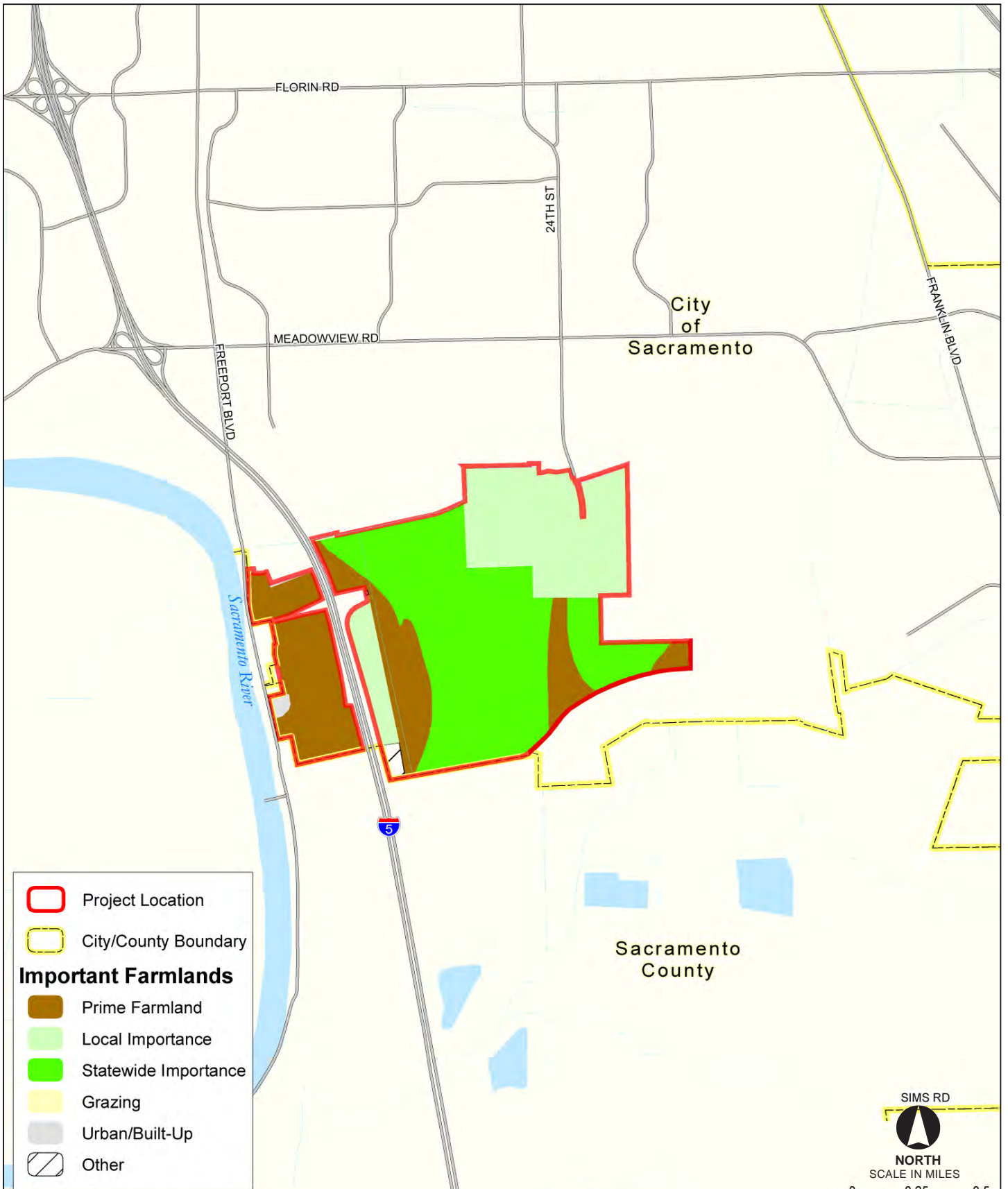


FIGURE 5.2-1
Important Farmlands

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TABLE 5.2-1

FARMLAND MAPPING AND MONITORING PROGRAM FARMLAND CLASSIFICATIONS

Land Classification	Definition
Prime Farmland	Land with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. The 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 prior to the mapping date to be classified as prime. Prime Farmland generally consists of Class I and II soils. They have the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods.
Farmland of Statewide Importance	Similar to Prime Farmland but with some minor differences, such as greater slopes or less ability to store soil moisture. The land must have been used for irrigated agricultural production some time during the four years prior to the mapping date.
Unique Farmland	Farmland that is not classified as prime or of statewide importance, which produces one of California's 40 leading economic crops, such as grapes, artichokes, avocados, and dates. Soil characteristics and irrigation are not considered.
Farmland of Local Importance	Land other than Unique Farmland, which may be important to the local economy due to its productivity or value. Determined by each county's board of supervisors and a local advisory committee.
Grazing Land	Land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for Grazing Land is 40 acres.
Urban and Built-Up Land	Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.
Other Land	Land not included in any other mapping category. Examples of land classified as Other Land include low density rural developments; timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is also mapped as Other Land.
Source: California Department of Conservation, California Farmland Conversion Report 2000-2002, December 2004, p. 5.	

TABLE 5.2-2

DELTA SHORES IMPORTANT FARMLANDS

Type	Acres
Prime Farmland	201.02
Statewide Importance	341.64
Local Importance	221.93
Urban/Built Up	11.14
Other	25.23
TOTAL	800.96¹
Note: 1. The 18-acre differential between the net acreage (project site) and gross acreage (farmland) is attributable to the I-5 Interchange and Consumnes River Boulevard projects. Source: California Department of Conservation, Division of Land Resource Protection, 2006.	

Prime Farmland: Farmland with the best combination of physical and chemical features able to sustain 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 four years prior to the mapping date.

Farmland of Statewide Importance: Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Farmland of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

Urban and Built-Up Land: Land occupied by structure with a building density of at least one unit to one and one-half acres, or approximately six structures to a ten-acre parcel.

Other Land: Land that does not meet the criteria of any other category.

Soils

Capability Rating

There are several methods of classifying soil quality for agricultural uses. One method involves a soil capability rating provided by the Natural Resources Conservation Service (NRCS) (see Table 5.2-3). Capability ratings indicate, in a general way, the suitability of soils for most kinds of field crops. The classes are developed according to the limitation of the soils when used for field crops, the risk of damage when they are used, and the way they respond to treatment. The broadest capability groups are designated by Roman numerals I through VIII. Prime Farmland usually consists of Class I and Class II soils. Increasing numerals indicate progressively greater limitation and narrower choices for practical agricultural use.

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

Source: United States Department of Agriculture Soil Conservation Service, *Soil Survey of Sacramento County, California*, Issued April 1950.

Williamson Act Contracts

The proposed development site is not currently under a Williamson Act Contract⁸ or within a Farmland Security Zone. Figure 5.2-2 shows Williamson Act Contracts in the vicinity of the project site.

Regulatory Context

Federal

There are no specific federal regulations that pertain to agricultural resources.

State

California Code of Regulations (Title 3. Food and Agriculture)

The California Code of Regulations (CCR) Title 3, Sections 6000-6920 regulate the registration, management, use, and application of pesticides on agricultural lands. These regulations are enforced by the Sacramento County Agricultural Commissioner's office. Generally, specific regulations vary for each pesticide, its method of application and use. However, sections 6600 and 6614 have some general regulations relating to the application of pesticide uses as follows:

6600 General Standards of Care.

Each person performing pest control shall:

- a. Use only pesticide equipment that is in good condition and safe to operate.
- b. Perform all pest control in a careful effective manner.
- c. Use methods and equipment suitable to ensure proper application of pesticide.
- d. Perform all pest control under climatic conditions suitable to ensure proper application of pesticides.
- e. Exercise reasonable precautions to avoid contamination of the environment.

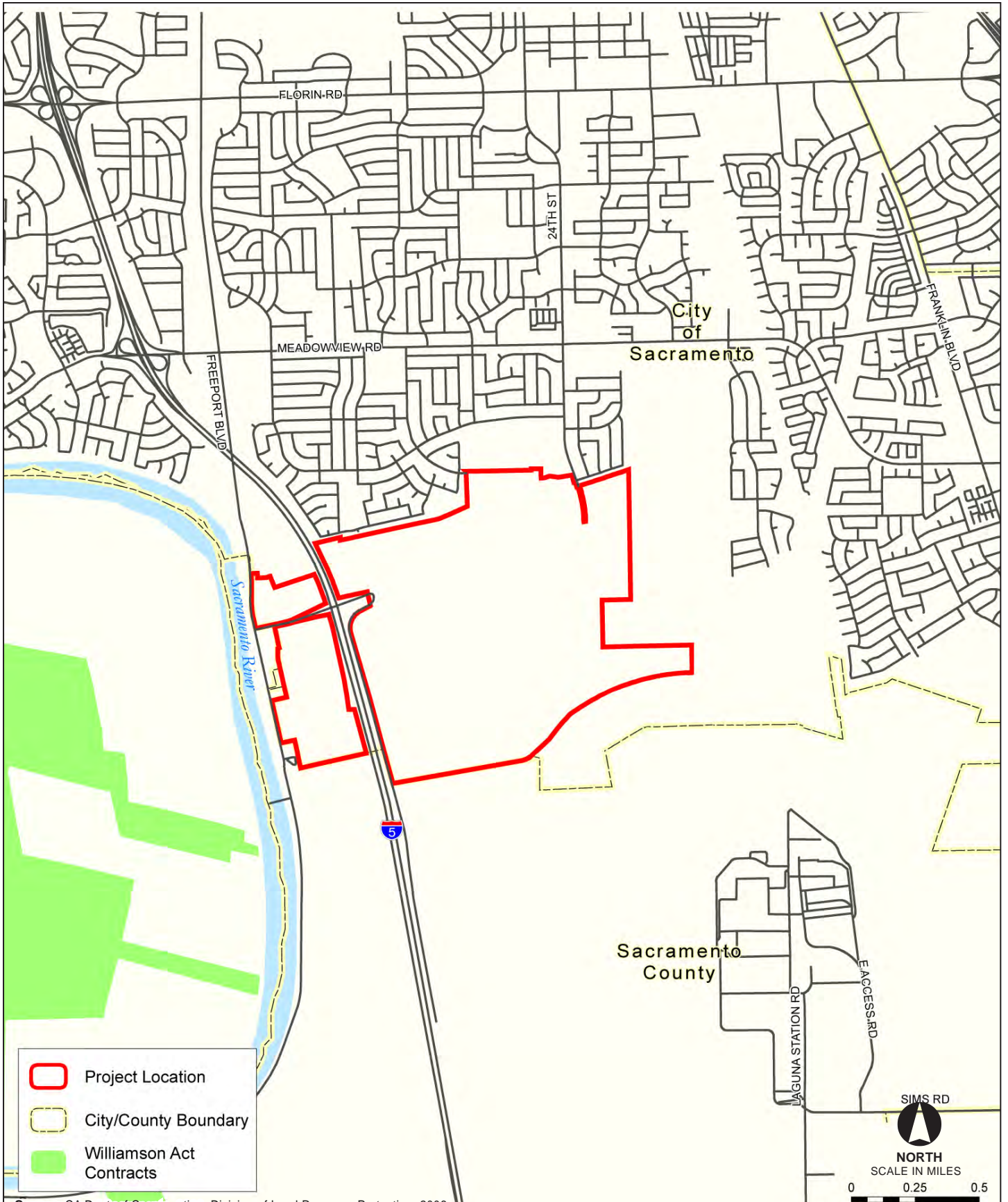
6614 Protection of persons animals property

- a. An applicator prior to and while applying pesticide shall evaluate the equipment to be used, meteorological conditions, property to be treated, and surrounding properties to determine the likely hood of harm or damage.
- b. Notwithstanding that substantial drift would be prevented, no pest application shall be made or continue when:
 1. There is a reasonable possibility of contamination of the bodies or clothing of persons not involved in [the] application process;
 2. Possibility of damage to nontarget crops, animals or other public private property; or
 3. There is a reasonable possibility of contamination of nontarget public or private property including the creation of a health hazard preventing the normal use of such property. In determining a health hazard, the amount and toxicity of pesticide and type and use of property and related factors shall be considered.

CCR Title 3, Sections 3482.5 and 3482.6 protects the Right to Farm in California.

8 California Department of Conservation, Division of Land Resource Protection, 2006.

- 3482.5. (a)(1) No agricultural activity, operation, or facility, or appurtenances thereof, conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards, as established and followed by similar agricultural operations in the same locality, shall be or become a nuisance, private or public, due to any changed condition in or about the locality, after it has been in operation for more than three years if it was not a nuisance at the time it began.
- (2) No activity of a district agricultural association that is operated in compliance with Division 3 (commencing with Section 3001) of the Food and Agricultural Code, shall be or become a private or public nuisance due to any changed condition in or about the locality, after it has been in operation for more than three years if it was not a nuisance at the time it began. This paragraph shall not apply to any activities of the 52nd District Agricultural Association that are conducted on the grounds of the California Exposition and State Fair, nor to any public nuisance action brought by a city, county, or city and county alleging that the activities, operations, or conditions of a district agricultural association have substantially changed after more than three years from the time that the activities, operations, or conditions began.
- (b) Paragraph (1) of subdivision (a) shall not apply if the agricultural activity, operation, or facility, or appurtenances thereof obstruct the free passage or use, in the customary manner, of any navigable lake, river, bay, stream, canal, or basin, or any public park, square, street, or highway.
- (c) Paragraph (1) of subdivision (a) shall not invalidate any provision contained in the Health and Safety Code, Fish and Game Code, Food and Agricultural Code, or Division 7 (commencing with Section 13000) of the Water Code, if the agricultural activity, operation, or facility, or appurtenances thereof constitute a nuisance, public or private, as specifically defined or described in any of those provisions.
- (d) This section shall prevail over any contrary provision of any ordinance or regulation of any city, county, city and county, or other political subdivision of the state. However, nothing in this section shall preclude a city, county, city and county, or other political subdivision of this state, acting within its constitutional or statutory authority and not in conflict with other provisions of state law, from adopting an ordinance that allows notification to a prospective homeowner that the dwelling is in close proximity to an agricultural activity, operation, facility, or appurtenances thereof and is subject to the provisions of this section consistent with Section 1102.6a.
- (e) For purposes of this section, the term "agricultural activity, operation, or facility, or appurtenances thereof" shall include, but not be limited to, the cultivation and tillage of the soil, dairying, the production, cultivation, growing, and harvesting of any agricultural commodity including timber, viticulture, apiculture, or horticulture, the raising of livestock, fur bearing animals, fish, or poultry, and any practices performed by a farmer or on a farm as incident to or in conjunction with those farming operations, including preparation for market, delivery to storage or to market, or delivery to carriers for transportation to market.
- 3482.6. (a) No agricultural processing activity, operation, facility, or appurtenances thereof, conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards, shall be or become a nuisance, private or public, due to any changed condition in or about the locality, after it has been in continuous operation for more than three years if it was not a nuisance at the time it began.
- (b) If an agricultural processing activity, operation, facility, or appurtenances thereof substantially increases its activities or operations after January 1, 1993, then a public or private nuisance action may be brought with respect to those increases in activities or operations that have a significant effect on the environment. For increases in activities or operations that have been in effect more than three years, there is a rebuttable presumption affecting the burden of producing evidence that the increase was not substantial.
- (c) This section does not supersede any other provision of law, except other provisions of this part, if the agricultural processing activity, operation, facility, or appurtenances thereof, constitute a nuisance, public or private, as specifically defined or described in the provision.
- (d) This section prevails over any contrary provision of any ordinance or regulation of any city, county, city and county, or other political subdivision of the state, except regulations adopted pursuant to Section 41700 of the Health and Safety Code as applied to agricultural processing activities, operations, facilities, or appurtenances thereof that are surrounded by housing or commercial development on January 1, 1993. However, nothing in this section precludes a city, county, city and county, or other political subdivision of this state, acting within its constitutional



Source: CA Dept. of Conservation, Division of Land Resource Protection, 2006.

FIGURE 5.2-2
Williamson Act Contracts



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or statutory authority and not in conflict with other provisions of state law, from adopting an ordinance that allows notification to a prospective homeowner that the dwelling is in close proximity to an agricultural processing activity, operation, facility, or appurtenances thereof and is subject to provisions of this section consistent with Section 1102.6a.

- (e) For the purposes of this section, the following definitions apply:
- (1) "Agricultural processing activity, operation, facility, or appurtenances thereof" includes, but is not limited to rendering plants licensed pursuant to Section 19300 of the Food and Agricultural Code and collection centers licensed pursuant to Section 19300.5 of the Food and Agricultural Code, the canning or freezing of agricultural products, the processing of dairy products, the production and bottling of beer and wine, the processing of meat and egg products, the drying of fruits and grains, the packing and cooling of fruits and vegetables, and the storage or warehousing of any agricultural products, and includes processing for wholesale or retail markets of agricultural products.
 - (2) "Continuous operation" means at least 30 days of agricultural processing operations per year.
 - (3) "Proper and accepted customs and standards" means the compliance with all applicable state and federal statutes and regulations governing the operation of the agricultural processing activity, operation, facility, or appurtenances thereof with respect to the condition or effect alleged to be a nuisance.
- (f) This section does not apply to any litigation pending or cause of action accruing prior to January 1, 1993.

Williamson Act

The California Land Conservation Act of 1965 (or Williamson Act) (California Government Code Section 51200) recognizes the importance of agricultural land as an economic resource that is vital to the general welfare of society. The legislation seeks to protect and preserve agricultural land to maintain the agricultural economy of the state and provide food.

Intended to assist the long-term preservation of prime agricultural land in the State, Williamson Act contracts provide the agricultural landowner with a substantial property tax break for keeping land in agricultural use. When under contract, the landowner no longer pays property tax for an assessed valuation based upon the property's urban development potential, and instead only pays taxes based on the land's agricultural value. Williamson Act contracts remain in effect for 10 years unless the property owner files for a notice of non-renewal with the County. After filing for non-renewal, the contract continues to remain in effect for ten years until the Williamson Act contract requirements are removed from the property.

Local

City of Sacramento 1988 General Plan

The City of Sacramento General Plan was adopted on January 19, 1988. This General Plan replaced the heavily amended 1974 General Plan for Sacramento. The General Plan is a 20-year policy guide for physical, economic, and environmental growth and renewal of the City. A total of nine sections are contained within the plan, each of which contains goals and policies intended to guide buildout of the city. Applicable goals and policies from the 1988 General Plan are listed below. The City is presently in the process of updating its General Plan, with an anticipated completion in late 2008. Policies from the draft City of Sacramento 2030 General Plan are included below.

CONSERVATION AND OPEN SPACE ELEMENT

Conservation of, and Open Space Used for, the Managed Production of Resources

Goal A Retain land inside the City for agricultural use until the need arises for development, and support actions of Sacramento County to similarly conserve its land until needed for urban growth.

Policies

1. Phase the conversion of agricultural lands to urban uses while implementing the policies of the North Natomas Community Plan.
2. Work with Sacramento County to explore the feasibility of an agricultural preservation plan.

City of Sacramento 2030 General Plan

The City anticipates adopting the new General Plan by the end of 2008. Therefore, applicable policies from the draft General Plan are included that address agricultural resources.

Goal ER 4.2 Growth and Agriculture. Support preservation and protection of agricultural lands and operations outside of the city for their value for open space, habitat, flood protection, aesthetics, and food security by working with surrounding jurisdictions.

Policies

ER 4.2.1 **Protect Agricultural Lands.** The City shall encourage infill development and compact new development within the existing urban areas of the city in order to minimize the pressure for premature conversion of productive agricultural lands for urban uses.

ER 4.2.2 **Permanent Preservation.** The City shall work with the County, Natomas Basin Conservancy, and other entities to protect and permanently preserve a one-mile buffer outside of the city to preserve viable agricultural activities and as a community separator between Sutter and Sacramento Counties and along the Sacramento River.

ER 4.2.3 **Coordinate to Protect Farmland.** The City shall continue to work with County and other adjacent jurisdictions to implement existing conservation plans to preserve prime farmland and critical habitat outside the city.

ER 4.2.4 **Development Adjacent to Agriculture.** The City shall require open space or other appropriate buffers for new development abutting agricultural areas to protect the viability of existing agricultural operations outside of the city and ensure compatibility of uses with residents in adjacent areas.

ER 4.2.5 **Homeowner Notification.** The City shall require that purchasers of homes located in the vicinity of agricultural operations be provided notification of such activities by way of their deeds and/or escrow documentation.

Airport/Meadowview Community Plan

There are no goals, policies, or objectives in the Airport/Meadowview Community Plan related to agricultural resources that apply to the proposed project. As part of the General Plan Update, the Airport /Meadowview Community Plan will also be updated as the South Area Community Plan.

South Area Community Plan

The City anticipates adopting the South Area Community Plan as part of the 2030 General Plan. The draft South Area Community Plan does not include any policies applicable to agricultural resources.

City of Sacramento Zoning Ordinance

The City of Sacramento Zoning Ordinance (Sacramento City Code Title 17) is intended to encourage the most appropriate use of land, conserve, stabilize, and improve the value of property, provide adequate open space for recreational, aesthetic, and environmental amenities, and control the distribution of population to promote health, safety, and the general welfare of the population of the City (§17.04.020). To achieve this goal, the Zoning Ordinance regulates the use of land, buildings, or other structures for residences, commerce, industry, and other uses required by the community. The Zoning Ordinance also regulates the location, height, and size of buildings or structures, yards, courts, and other open spaces, the amount of building coverage permitted in each zone, and population density. The Zoning Ordinance divides the City into districts of such shape, size, and number best suited to carry out these regulations, and to provide for their enforcement.

Existing zoning classifications for the project site include Agricultural (A), Shopping Center-PUD (SC-PUD), Single Family Alternative Residential-PUD (R-1A-PUD), and Manufacturing, Research & Development-PUD (MRD-PUD) under the City's Zoning Ordinance. The agriculture zone is defined below.

A—Agricultural Zone. This is an agricultural zone restricting the use of land primarily to agriculture and farming. It is also considered an open space zone. Property in this zone will be considered for reclassification when proposed for urban development which is consistent with the general plan. See Chapter 17.48 for more details.

The proposed zoning designations for the project are: Low Density Residential – Planned Unit Development (R-1-PUD), Medium Density Residential – Planned Unit Development (R-1A-PUD), High Density Residential – Planned Unit Development (R-3-PUD), Residential Mixed Use – Planned Unit Development (RMX-PUD), General Commercial – Planned Unit Development (C-2-PUD), and Agriculture Open Space – Planned Unit Development (AOS-PUD). The AOS zone is defined below.

AOS—Agriculture-Open Space Zone. This is an exclusive agricultural zone designed for the long term preservation of agricultural and open space land. This zone is designated to prevent the premature development of land in this category to urban uses. See Chapter 17.48 for more details.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

Maps of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance prepared for FMMP were reviewed for the project site. The presence of farmland on this map in relation to project components was evaluated to determine potential impacts to agricultural resources.

Because there are no Williamson Act contracts on the project site, the impact of the proposed project on Williamson Act contracts will not be addressed.

Standards of Significance

For the purposes of this EIR, impacts on agricultural resources are considered significant if the proposed project would:

- affect agricultural resources or operations (e.g., impacts to soils or farmlands, or impacts from incompatible land uses, or premature conversion of Williamson Act contracts).

Project-Specific Impacts and Mitigation Measures

5.2-1 Development of the proposed project would affect agricultural resources or operations (e.g., impacts to soils or farmlands, or impacts from incompatible uses).

As discussed in the Environmental Setting, almost the entire site has recently been in agricultural production. Row crops, including tomatoes, sugar beets, wheat, corn, safflower, alfalfa, and oat hay, have been rotated on the site. As defined by information provided by the FMMP and illustrated in Figure 5.2-1, the project site includes 201.02 acres of Prime Farmland, 341.64 acres of Farmland of Statewide Importance, and 221.93 acres of Farmland of Local Importance.⁹ Development of the proposed project would result in the permanent conversion of agricultural land to non-agricultural uses within the city of Sacramento.

The City of Sacramento has expressed an interest in preserving agricultural lands. Goals and policies included in the Environmental Resources section of the proposed 2030 General Plan encourage the continued productivity and preservation of existing local agricultural lands and operations in areas outside of the city. For this reason, the City plans to contain development and urban sprawl within the city limits. By limiting development to lands within the city, other agricultural lands located in more rural locations outside of the city are not needed for development, helping to prevent impacts on agricultural resources and operations in more agriculturally productive areas, where even larger tracts of land may remain in agricultural operation without the threat of development. Although the city still contains agricultural land, many of these areas within the city have been designated and zoned for development, including the project site, in part to prevent the conversion of agricultural lands outside of the city limits. By keeping urban development within the City limits, the City would be preventing urban sprawl into other agricultural regions, thereby helping to avoid impacts on agricultural resources and operations in more agriculturally productive areas.

The City has concluded that their contribution to the state's inventory of Important Farmland is insubstantial. The City has determined that remaining agricultural land within the City limits is not considered viable or suitable for large scale agricultural operations, including the project site. Therefore, because the project site is within the city limits and has been designated both in the 1988 and 2030 General Plan for future development the City does not consider the conversion of this agricultural land to be a significant impact. Therefore, the permanent conversion of agricultural land to nonagricultural use associated with the project is considered a ***less-than-significant impact***.

Mitigation Measure

None required.

9 California Department of Conservation, Farmland Mapping and Monitoring Program, *Sacramento County 2004-2006 Land Use Conversion*, Table A-24, <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2004-2006/conversion_tables/saccon06.xls>, accessed July 28, 2008.

5.2-2 Development of the proposed project could result in incompatible land use with adjacent agricultural operations.

The proposed project is surrounded by several uses. The western portion of the project site is bordered by an office complex to the north, I-5 to the east, Bartley Cavanaugh Golf Course to the south, and Highway 160 (Freeport Boulevard) and the Town of Freeport to the west. The eastern portion of the project site is bordered by single-family residential homes to the north, the Sacramento Job Corps facility to the northeast, agricultural land to the east, a levee along Morrison Creek and the Sacramento Regional County Sanitation District open space buffer lands and regional water treatment plant to the south, and I-5 to the west.

The only location where the proposed project would be adjacent to agricultural operations is on the east side of the project site along the eastern border. Agricultural operations to the east could result in future residents being exposed to agricultural activities that are perceived as an inconvenience, such as the creation of dust, odors, pesticide spray drift, and elevated noise levels. Farming practices vary according to the type of crop that is grown. The types and timing of pesticides applied, harvesting activities, and planting activities would vary depending upon the type of crop grown. The timing for agricultural activities, such as planting, tilling, harvesting, and pesticide applications, would also vary from year to year depending upon the type of crop grown and weather conditions. As discussed previously, the Agricultural Commissioner's Office is the entity responsible for ensuring that CCR 6600 and 6614 would be enforced, thereby minimizing potential pesticide spray drift impacts to adjacent lands.

Siting of homes in the vicinity of agricultural operations could also adversely affect existing agricultural operations. Transportation of farm equipment, such as tractors, is hindered on local roadways due to the increased number of vehicles. Future residents could also inconvenience farmers through the introduction of domestic pets, pests, and at times, vandalism or theft on farm properties.

However, the proposed project would be constructed in four distinct phases, with initial development consisting of the Regional Commercial component located east of I-5. The second phase would include development west of I-5. The third phase would include the development of the majority of the residential areas located north of Cosumnes River Boulevard, with the exception of the residential located east of 24th Street, while the fourth phase would develop the residential and neighborhood commercial areas located south of Cosumnes River Boulevard, as well as the remaining residential north of Cosumnes River Boulevard east of 24th Street. This phasing would prevent residential areas from being located adjacent to agricultural operations until the third and fourth phases of construction, thereby minimizing potential land use conflicts. In addition, the 2030 General Plan includes a policy that the City shall require that purchasers of homes located in the vicinity of agricultural operations be provided notification of such activities by way of their deeds and/or escrow documentation.

As discussed above, CCR Title 3, Sections 3482.5 and 3482.6 protects the Right-to-Farm in California. Due to the location of the project site there is the potential that some residences located adjacent to the eastern boundary of the project site could potentially be affected by agricultural

operations. Residences located adjacent to 24th Street would help buffer adjacent high density residential uses from agricultural operations and the Community Park would act as a buffer to other uses on the project site. These buffers would help minimize the amount of noise, dust, odors, and pesticide drift that would affect future residents. However, because there is the potential for disturbance from any type of agricultural use this is considered a *significant impact*.

Mitigation Measure

Implementation of the following Mitigation Measures would reduce impacts to land use compatibility to ***less than significant***.¹⁰

5.2-2 *The project applicant or developer shall provide all future homeowners with a copy of the Right-to-Farm in California included in the California Code of Regulations (CCR), Title 3, Sections 3482.5 and 3482.6 that outline allowable farming and agricultural operations.*

Cumulative Impacts and Mitigation Measures

The cumulative context for agricultural land includes land within the city as well as Sacramento County.

5.2-3 The proposed project, in conjunction with future development in the City and County, would affect agricultural resources or operations (e.g., impacts to soils or farmlands, or impacts from incompatible uses).

According to the CDC's FMMP statistics, the amount of agricultural land in Sacramento County decreased between 2004 and 2006.¹¹ As of 2006 (the most recent data that is available), Sacramento County had approximately 372,090 acres of agricultural land.¹² Within Sacramento County's classified agricultural land uses, the amount of Prime Farmland and Farmland of Statewide Importance decreased by approximately 8,535 net acres between 2004 and 2006.¹³ The amount of Unique Farmland increased by 81 acres and Farmland of Local Importance increased by 1,949 acres. The amount of Grazing Land decreased by 6,198 acres.¹⁴ Excluding grazing land conversions, the net decrease of farmland for crops from 2004 to 2006 was 6,366 acres.¹⁵

10 If the 2030 General Plan is adopted prior to this project going to City Council for review this MM will be removed.

11 This is the most recent data available from the California Department of Conservation.

12 California Department of Conservation, Farmland Mapping and Monitoring Program, *Sacramento County 2004-2006 Land Use Conversion*, Table A-24, <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2004-2006/conversion_tables/saccon06.xls>, accessed July 28, 2008.

13 California Department of Conservation, Farmland Mapping and Monitoring Program, *Sacramento County 2004-2006 Land Use Conversion*, Table A-24, <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2004-2006/conversion_tables/saccon06.xls>, accessed July 28, 2008.

14 California Department of Conservation, Farmland Mapping and Monitoring Program, *Sacramento County 2004-2006 Land Use Conversion*, Table A-24, <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2004-2006/conversion_tables/saccon06.xls>, accessed July 28, 2008.

15 California Department of Conservation, Farmland Mapping and Monitoring Program, *Sacramento County 2004-2006 Land Use Conversion*, Table A-24, <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2004-2006/conversion_tables/saccon06.xls>, accessed July 28, 2008.

According to the FMMP, the project includes 201.02 acres of Prime Farmland, 341.64 acres of Farmland of Statewide Importance, and 221.93 acres of Farmland of Local Importance.¹⁶ Part of the land is currently zoned as Agriculture (A) in the City's Zoning Ordinance. Development of the proposed project would permanently remove 765 acres of farmland from agricultural use within the city. Although the removal of this agricultural land would reduce the overall amount of farmland available in the county, the proposed project would confine urban development to lands within the city limits, thereby reducing the need to develop agricultural lands in the unincorporated areas of the County and preventing leap frog development. Due to the existing trend in the county of the conversion of farmland from active production to urban development, future development in the county could be expected to convert agricultural lands to urban uses. While future projects may result in the urbanization of agricultural land, right-to-farm ordinances and Williamson Act contracts would still be applicable. This would be a *significant cumulative impact*. However, because the proposed project would use only lands that have already been planned for development and are located entirely within the city of Sacramento, it would help prevent development of unincorporated agricultural lands outside of the city. This would actually aid in the preservation of agricultural land by limiting urban development to lands within the city, making the proposed project's contribution to the significant cumulative impact *less than considerable*. Therefore, this is a ***less-than-significant cumulative impact***.

Mitigation Measure

None required.

5.2-4 The proposed project, in conjunction with future development in the City and County, could result in incompatible land use with adjacent agricultural operations.

As discussed above, the only location where the proposed project would be adjacent to agricultural operations is on the east side of the project site along the eastern border. The City had received an application to develop the adjacent 126-acre parcel with a mix of uses including residential, commercial, and parks. However, that development application was withdrawn. As a result, the proposed project cannot assume that land to the east of the project site would be developed in the foreseeable future. Under cumulative conditions, the agricultural uses adjacent to the project site would remain.

As discussed above, CCR Title 3, Sections 3482.5 and 3482.6 protects the Right-to-Farm in California. Because there could be potential conflicts with any adjacent agricultural areas and the project would contribute residences that could be disturbed the project's contribution is considerable resulting in a *significant cumulative impact*.

16 California Department of Conservation, Farmland Mapping and Monitoring Program, *Sacramento County 2004-2006 Land Use Conversion*, Table A-24, <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2004-2006/conversion_tables/saccon06.xls>, accessed July 28, 2008.

Mitigation Measure

Compliance with Mitigation Measure 5.2-2 would reduce cumulative impacts to a ***less-than-significant level***.

5.2-4 *Implement Mitigation Measure 5.2-2.*

5.3 AIR QUALITY

INTRODUCTION

This section assesses the potential air quality effects caused by stationary, mobile, and area sources related to construction and operation of the proposed project. This section describes the climate in the project area; existing air quality conditions in the project area for criteria air pollutants and toxic air contaminants; and applicable federal, state, and regional air quality standards.

Comments received in response to the NOP (see Appendix B) included a letter from the Sacramento Metropolitan Air Quality Management District (SMAQMD) requesting that the analysis include (but is not required to) a discussion of climate change; that the analysis consider the siting of residential uses within 500 feet of major roadways as outlined in the *Air Quality and Land Use Handbook*; and that potential short-term and long-term air quality impacts be analyzed. Climate change is analyzed in Section 5.10, the remainder of these issues and concerns have been addressed in this section.

A letter from the Sacramento Area Council of Governments (SACOG) requests that an analysis of global climate change be included in the analysis. Please see Section, 5.10, Climate Change for a discussion of the project's effect on climate change and global warming,

As discussed in the Initial Study (see Appendix A), issues associated with air movement, moisture, and temperature were found to be less than significant. Therefore, these issues are not discussed further in this section.

Sources reviewed for this section include the SMAQMD Guide to Air Quality Assessment in Sacramento County (Guide), the SMAQMD Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways (Protocol), the City of Sacramento 1988 General Plan, the draft City of Sacramento 2030 General Plan, the California Air Resources Board (CARB) website, the Health Risk Assessment (HRA) prepared for the project (see Appendix D) and the SMAQMD website.

ENVIRONMENTAL SETTING

A region's air quality is influenced by the region's climate, topography, and pollutant sources. The characteristics of the region encompassing the City of Sacramento are such that the area can, at times, have the potential for high concentrations of regional and localized air pollutants.

Climate and Topography

Hot dry summers and mild rainy winters characterize the Mediterranean climate of the Sacramento Valley. During the year the temperature may range from 20 to 115 degrees Fahrenheit (°F) with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches with snowfall being very rare. The prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north.

The mountains surrounding the Sacramento Valley Air Basin (SVAB) create a barrier to airflow, which can trap air pollutants in the SVAB when meteorological conditions are right. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the Valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog and pollutants near the ground.

The ozone season (May through October) in the SVAB is characterized by stagnant air or light winds with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Valley. During about half of the days from July to September; however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out of the Valley, the Schultz Eddy causes the wind pattern to circle back south. Essentially this phenomenon causes the air pollutants to be blown south toward the Sacramento area. This phenomenon's effect exacerbates the pollution levels in the area and increases the likelihood of violating federal or state standards. The Eddy normally dissipates around noon when the delta sea breeze arrives.

Air Quality Background

Air pollutant emissions within the SVAB are generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources are usually subject to a permit from the local air district to operate, occur at specific identified locations, and are usually associated with manufacturing and industry. Examples of point sources include refineries, concrete batch plants, and can coating operations. Smaller point sources include automotive refinishers and gasoline stations. Area sources are widely distributed and produce many small emissions and do not require permits to operate from any air agency. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, and consumer products such as barbeque lighter fluid and hairspray. The widespread use of these items and operations contributes to regional air pollution.

A subcategory of area sources are "mobile sources" which refer to emissions from motor vehicles, including tailpipe and evaporative emissions. Motor vehicles are classified as either on-road or off-road. On-road sources are those that are legally operated on roadways and highways (i.e., cars and trucks). Off-road sources include aircraft, ships, trains, racecars, and construction vehicles. Mobile sources account for the majority of the air pollutant emissions within the SVAB.

Criteria Air Pollutants

Criteria air pollutants are a group of pollutants for which federal or state regulatory agencies have adopted ambient air quality standards. The criteria air pollutants of concern in the Sacramento area include ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), and particulate matter (PM₁₀ and PM_{2.5}). Table 5.3-1 lists the health effects associated with these pollutants. Most of the criteria pollutants are directly emitted. Ozone, however, is a secondary pollutant that is formed in the

atmosphere by chemical reactions between oxides of nitrogen (NO_x) and reactive organic gases (ROG). According to the most recent emissions inventory data for Sacramento County, mobile sources are the largest contributors of both ROG and NO_x.¹

TABLE 5.3-1	
HEALTH EFFECTS OF MAIN CRITERIA AIR POLLUTANTS	
Pollutant	Adverse Effects
Ozone	<ul style="list-style-type: none"> - Ozone can irritate lung airways and cause inflammation. Other symptoms include wheezing, coughing, and breathing difficulties during exercise or outdoor activities. People with respiratory problems are most vulnerable, but even healthy people that are active outdoors can be affected when ozone levels are high. - Repeated exposure to ozone pollution for several months may cause permanent lung damage. - Even at very low levels, ground-level ozone triggers a variety of health problems including aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis. - Ground-level ozone interferes with the ability of plants to produce and store food, which makes them more susceptible to disease, insects, other pollutants, and harsh weather. - Ozone reduces crop and forest yields and increases plant vulnerability to disease, pests, and weather.
Carbon Monoxide	<ul style="list-style-type: none"> - The health threat from lower levels of CO is most serious for those who suffer from heart disease. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. - Healthy people can be affected by high levels of CO as well. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death. - CO contributes to the formation of ground-level ozone, which can trigger serious respiratory problems.
Particulate Matter	<ul style="list-style-type: none"> - Particle pollution, especially fine particles, contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including: increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function, aggravated asthma, development of chronic bronchitis; irregular heartbeat, nonfatal heart attacks; and premature death. - Particles can be carried over long distances by wind and then settle on ground or water. The effects of this settling include: making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.
Nitrogen Dioxide	<ul style="list-style-type: none"> - One of the main ingredients involved in the formation of ground-level ozone, which can trigger serious respiratory problems. - Reacts to form nitrate particles, acid aerosols, as well as NO₂, which also cause respiratory problems. - Contributes to formation of acid rain; to nutrient overload that deteriorates water quality; and to atmospheric particles that cause visibility impairment. - Reacts to form toxic chemicals.
Source: U.S. Environmental Protection Agency, What Are the Six Common Air Pollutants? < www.epa.gov/air/urbanair/6poll.html >, 2006.	

Criteria air pollutants are classified in each air basin, county, or in some cases, within a specific urbanized area. The classification is determined by comparing actual monitoring data with state and federal standards. If a pollutant concentration is lower than the standard, the area is classified as “attainment” for that pollutant. If an area exceeds the standard, the area is classified as “non-attainment” for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated “unclassified”.

1 California Air Resources Board, Sacramento Metropolitan Air Quality Management District, *2005 Estimated Annual Average Emissions Inventory*, <www.arb.ca.gov/app/emssinv/emssumcat.php>, accessed June 20, 2007.

Monitors that collect air quality data are located throughout the SVAB. The closest monitoring station to the project site is the Sacramento T Street station, located in downtown Sacramento at 1309 T Street. Due to variations among ambient concentrations in and around Sacramento, where available, data from the two closest CARB-operated monitoring stations (i.e., the T Street station and the Health Department station at 2221 Stockton Boulevard) were considered in compiling the most recent air quality data summarized in Table 5.3-2.

Pollutant	2004	2005	2006
Ozone (1-hour)			
Highest 1-hour (ppm)	0.105	0.108	0.106
Days>0.12 ppm (National)	0	0	0
Days>0.09 ppm (State)	1	4	6
Ozone (8-hour)			
Highest 8-hour (ppm)	0.075	0.087	0.090
Days>0.08 (National)	0	3	4
Days>0.07 (State) ¹	0	> 3	> 4
Carbon Monoxide			
Highest 8-hour (ppm)	2.96	3.64	. ²
Days>=9.0 ppm (National and State)	0	0	-
Particulate Matter (PM₁₀)			
Highest 24-hour Concentration (ug/m ³)	91.9	70.5	159.6
Days>150 ug/m ³ (National)	0	0	2
Days>50 ug/m ³ (State)	1	4	8
Particulate Matter (PM_{2.5})			
Highest 24-hour Concentration (ug/m ³)	52.5	63.8	54.0
Days>35 ug/m ³ (National)	0 ³	0	0
Annual Arithmetic Mean (ug/m ³)	10.5	12.5	12.9
Annual Mean > 12.0 ug/m ³ (State)	NO	YES	YES
Nitrogen Dioxide			
Highest 1-hour (ppm)	0.072	0.071	0.077
Days>.25 ppm (State)	0	0	0
Annual Arithmetic Mean ug/m ³	0.017	0.016	0.016
Annual Mean > 0.053 ppm (National)	NO	NO	NO
Notes:			
1. State standard went into effect in early 2006 so no historical data is available.			
2. There was insufficient (or no) data available to determine this value.			
3. According to the CARB, an exceedance is not necessarily a considered a violation.			
Source: California Air Resources Board, Air Quality Data Statistics, < www.arb.ca.gov/adam/welcome.html >, accessed June 21, 2007.			

Existing Ambient Air Quality

Criteria air pollutants essential to air quality planning and regulation in the SVAB are listed in Table 5.3-3, along with applicable state and federal ambient air quality standards and attainment classifications. The Clean Air Act (CAA), as described in the Regulatory Setting section, established two types of standards, primary and secondary. Primary standards are designed to establish limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

TABLE 5.3-3		
AIR QUALITY STANDARDS ATTAINMENT STATUS CHART FOR SACRAMENTO COUNTY		
Pollutant	Primary Standard	Status
Federal Standards		
Ozone (O₃) – 8 hour	0.08 ppm	Serious Nonattainment
Carbon Monoxide (CO) – 1 hour	35 ppm	Attainment
8 hour	9 ppm	Attainment
Nitrogen Dioxide (NO₂) – Annual Arithmetic Mean	0.053 ppm	Attainment
Inhalable Particulate (PM₁₀) 24 Hour	150 µg/m ³	Moderate Nonattainment*
Annual Arithmetic Mean	50 µg/m ³	
Inhalable Particulate (PM_{2.5}) 24 Hour	35 µg/m ³	Attainment
State Standards		
Ozone (O₃) – 1 hour	0.09 ppm	Serious Nonattainment
8 hour	0.07 ppm	Serious Nonattainment
Carbon Monoxide (CO) – 1 hour	20 ppm	Attainment
8 hour	9 ppm	Attainment
Nitrogen Dioxide (NO₂) – 1 hour	0.25 ppm	Attainment
Inhalable Particulate (PM₁₀) Annual Arithmetic Mean	20 µg/m ³	Nonttainment
24 Hour	50 µg/m ³	Nonttainment
Inhalable Particulate (PM_{2.5}) Annual Arithmetic Mean	12.0 µg/m ³	Nonattainment
Notes: ppm = parts per million. µg/m ³ = micrograms per cubic meter. 1. Sacramento County air quality currently meets the Federal PM ₁₀ standards, but the SMAQMD must request redesignation to attainment and submit a maintenance plan to be formally designated to attainment. Source: Sacramento Metropolitan Air Quality Management District, Air Quality Standards Attainment Status Chart, <www.airquality.org>, accessed June 21, 2007.		

The CARB maintains an emission inventory of air pollutants for the state's air basins as well as for the counties inside those air basins. Table 5.3-4 presents the latest emission inventory of ozone, CO, PM₁₀, and PM_{2.5}, and NO_x, for Sacramento County. Relevant criteria pollutants for the Sacramento area and the attainment status for Sacramento County for each of these pollutants are described below.

Ozone (O₃) is a gas that is formed when ROG and NO_x undergo slow photochemical reactions in the presence of sunlight. The type of ozone referred to in this section is called tropospheric ozone (otherwise known as “bad ozone”), since it lies very close to the earth's surface (in the troposphere). Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable. The federal government uses a number of different classifications to describe the extent to which an area is in nonattainment for the federal ozone standard. Sacramento County was formerly classified as being in “severe” nonattainment for the one-hour ozone standard. However, the one-hour standard was revoked by the Environmental Protection Agency (EPA) in June 2005 and replaced with a new eight-hour standard which is now the only

Source Category	ROG	CO	NO _x	PM ₁₀	PM _{2.5}
Stationary Sources					
Fuel Combustion	0.40	3.30	3.40	0.50	0.50
Waste Disposal	0.30	0.10	0.00	0.00	0.00
Cleaning and Surface Coatings	5.50	-	-	-	-
Petroleum Production and Marketing	4.20	-	-	-	-
Industrial Processes	1.10	0.30	0.20	1.10	0.6
Total Stationary Sources	11.40	3.70	3.70	1.60	1.10
Area-Wide Sources					
Solvent Evaporation	13.80	-	-	0.00	0.00
Miscellaneous Processes	4.10	39.8	3.10	38.3	12.0
Total Area-Wide Sources	17.9	39.8	3.10	38.3	12.0
Mobile Sources					
On-Road Vehicles	27.3	255.6	51.8	1.80	1.20
Other Mobile	10.8	91.7	26.5	1.80	1.60
Total Mobile Sources	38.1	347.3	78.3	3.60	2.80
Natural Sources					
Total Natural Sources	10.2	0.20	0.00	0.00	0.00
TOTAL	77.5	390.9	85.1	43.5	15.9
Source: California Air Resources Board, Almanac Emission Projection Data, < www.arb.ca.gov/app/emsmv/emssumcat.php >, accessed June 22, 2007.					

applicable ozone standard. The EPA has designated the Sacramento area as a “serious” nonattainment area for the new eight-hour standard.

Carbon Monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. Other non-road engines and vehicles (such as construction equipment and boats) contribute about 22 percent of all CO emissions nationwide. Higher levels of CO generally occur in areas with heavy traffic congestion. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and un-vented gas and kerosene space heaters are sources of CO indoors. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air.

Because CO is emitted directly from internal combustion engines—unlike ozone—and motor vehicles operating at slow speeds are the primary source of CO in the SVAB, the highest ambient CO concentrations are generally found near congested transportation corridors and intersections. Additional traffic generated by a project may increase congestion at nearby intersections, and consequently increase the likelihood of creating high levels of CO.

Through control measures adopted by state, local and federal agencies, all areas of the SVAB have attained the state and federal CO standards. However, the potential still exists for incidents of high localized concentrations of CO to occur.

Particulate Matter (PM₁₀ and PM_{2.5}) consists of extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter. There are outdoor and indoor sources of fine particles. Some sources of suspended particulate matter, like pollen and wind blown dust, occur naturally. However, in populated areas, most fine suspended particulate matter is caused by road dust, diesel soot, combustion of fuel, abrasion of tires and brakes, and construction activities. Fine particles can remain suspended in the air and travel long distances. For example, exhaust from a diesel truck in Los Angeles can end up over the Grand Canyon. PM is also produced by common indoor activities such as smoking tobacco, cooking (e.g., frying, sautéing, and broiling), burning candles or oil lamps, and operating fireplaces and fuel-burning space heaters (e.g., kerosene heaters).

Monitoring data for Sacramento County shows that the county is currently in attainment of the federal PM₁₀ standard. However, the SMAQMD must request re-designation and submit a PM₁₀ maintenance plan to the EPA prior to any re-designation to attainment. Consequently, the EPA has not officially changed the county's designation to attainment for the federal PM₁₀ standard. The Sacramento Region is officially in nonattainment status for the more stringent state PM₁₀ standards.

Sacramento County is currently in attainment for the federal 24-hour PM_{2.5} standard; however, the County is in nonattainment for the state annual mean standard.

Nitrogen oxides (NO_x) is the generic term for a group of highly reactive gases, all of which contain nitrogen and oxygen in varying amounts. Many of the nitrogen oxides are colorless and odorless. Of the seven types of nitrogen oxide compounds, NO₂ is the most abundant in the atmosphere. NO₂, along with other particles in the air, can often be seen as a reddish-brown layer over many urban areas. Nitrogen oxides form when fuel is burned at high temperatures, as in a combustion process. The primary human-made sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels. Nitrogen oxides can also be formed naturally. The County is in attainment for NO₂.

Toxic Air Contaminants

In addition to the criteria air pollutants, another group of airborne substances, called Toxic Air Contaminants (TACs) are known to be highly hazardous to health, even in small quantities. TACs are airborne substances capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects (i.e., injury or illness).

TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Farms, construction sites, and residential areas can also potentially contribute to toxic air emissions. Due to mounting scientific evidence of adverse health effects, the CARB has recently identified diesel particulate matter (DPM)

as a TAC. Regulation of TACs is achieved through federal and state controls on individual sources. The 1990 CAA Amendments offer a comprehensive plan for achieving significant reduction in both mobile and stationary source emissions of certain designated Hazardous Air Pollutants (HAP), with a goal of achieving the EPA one in one million cancer risk from TACs. All major stationary sources of designated HAP's are required to obtain and pay the required fees for an operating permit under Title V of the federal CAA Amendments.

TAC impacts are assessed using a maximum individual cancer risk (MICR) that estimates the probability of a potential maximally exposed individual (MEI) contracting cancer as a result of sustained exposure to toxic air contaminants over a constant period of 24 hours per day for 70 years for residential receptor locations. The CARB and local air districts have determined that any stationary source posing an incremental cancer risk to the general population (above background risk levels) equal to or greater than 10 people in 1 million to be excessive.

For stationary sources, if the incremental risk of exposure to project-related TAC emissions meets or exceeds the threshold of 10 excess cancer cases per 1 million people, the CARB and local air district require the installation of best available control technology (BACT) or maximum available control technology (MACT) to reduce the risk threshold. To assess risk from ambient air concentrations, the CARB has conducted studies to determine the total cancer inhalation risk to individuals due to outdoor toxic pollutant levels. The CARB has conducted studies to determine the total cancer inhalation risk to individuals due to outdoor toxic pollutant levels. According to the map prepared by the CARB showing the estimated inhalation cancer risk for TACs in the State of California, the project area has an existing estimated risk that is between 100 and 250 cancer cases per 1 million people in 2001. This represents the lifetime risk that between 100 and 250 people in 1 million may contract cancer from inhalation of toxic compounds at current ambient concentrations under an MEI scenario.² The existing background cancer risk for Sacramento County is 360 in a million.³

For mobile sources, the SMAQMD *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways (Protocol)* provides a methodology for the assessment of potential cancer risk from DPM attributable to siting sensitive land uses adjacent to major roadways. The SMAQMD selected an evaluation criterion of 446 in a million, which corresponds to the level of risk 70 percent less than the risk 10 feet from the edge of the nearest travel lane of the highest volume roadway in Sacramento County (24,000 vehicle per hour). The SMAQMD does not regard the evaluation criterion as a "safe" risk level or a regulatory threshold, but as the point at which a site specific HRA is recommended.

Sensitive Receptors

Some individuals are considered to be more sensitive than others to air pollution. Reasons for greater sensitivity can include existing health problems, duration of exposure to air pollutants, or

2 California Air Resources Board, Maps of Estimated Cancer Risk from Air Toxics, <www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm>, accessed November 16, 2007.

3 California Air Resources Board, *Roseville Rail Yard Study*, <www.arb.ca.gov/diesel/documents/rstudy.htm>, accessed December 7, 2007.

certain peoples' increased susceptibility to pollution-related health problems due to factors such as age. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be sensitive receptors to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive because people in residential areas are often at home for extended periods of time, so they can be exposed to pollutants for extended periods. Recreational areas are considered moderately sensitive to poor air quality because vigorous exercise associated with recreation places a high demand on human respiratory function.

Existing sensitive land uses near the project site include: the Meadowview and North Delta Shores residential neighborhoods immediately north of the project site; three schools north of the project site: St. Anne Catholic School, John Still Center, and a newly constructed elementary school; and the residences located in the Town of Freeport, west of the project site. There are also two parks in the vicinity of the project site: Meadowview Park which is northeast of the project site; and the Bill Conlin Regional Youth Sports Complex which is located northwest of the project site. The Bartley Cavanaugh Golf Course is located immediately southwest of the project site.

The proposed project is located adjacent to the southern boundary of the City of Sacramento city limits and is one of the last remaining large areas of undeveloped land in the city. Regional access to the project site is provided by Interstate 5 (I-5) and Highway (Hwy) 160. Local access is provided by Meadowview Road.

Regulatory Context

Air quality in Sacramento County is regulated by the U.S. EPA, the CARB, and the SMAQMD. These agencies develop rules or regulations to meet the goals or directives imposed on them through legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent. In general, air quality evaluations are based on air quality standards developed by the federal and state government.

Since many air pollution problems are regional in nature, the federal government sometimes designates multi-county areas as "Nonattainment Areas". Because it covers a large area, a nonattainment area can be composed of several different air districts. The "nonattainment area" designation means that these individual local agencies must work together to solve regional air pollution problems. The Sacramento Ozone Nonattainment Area includes all of Sacramento County and parts of Yolo, Solano, Sutter, and Placer counties.

Federal

The federal EPA is the federal agency responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The EPA also has jurisdiction over emission sources outside state waters (outer continental shelf), and establishes various emissions standards for vehicles sold in states other than California.

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs.

Clean Air Act

The Federal CAA, as amended, establishes air quality standards for several pollutants. These standards are divided into primary standards and secondary standards. Primary standards are designed to protect public health, and secondary standards are intended to protect public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. The CAA requires that regional plans be prepared for non-attainment areas illustrating how the federal air quality standards could be met. The CARB approved the most recent revision of the State Implementation Plan (SIP) prepared by the SMAQMD in 1994, and submitted it to the EPA. The SIP, approved by the EPA in 1996, consists of a list of ROG and NO_x control measures for demonstrating future attainment of ozone standards. The steps to achieve attainment will continue to require significant emissions reductions in both stationary and mobile sources.

State

The CARB, a part of the California EPA (Cal EPA) is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets state ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

California Clean Air Act

The California Clean Air Act (CCAA) of 1988 requires nonattainment areas to achieve and maintain the state ambient air quality standards by the earliest practicable date and local air districts to develop plans for attaining the state ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide standards. In compliance with the CCAA, the SMAQMD prepared and submitted the 1991 Air Quality Attainment Plan (AQAP) to mainly address Sacramento County's nonattainment status for ozone and carbon monoxide, and although not required, PM₁₀. The CCAA also requires that by the end of 1994 and once every three years thereafter, the districts are to assess their progress toward attaining the air quality standards. The triennial assessment is to report the extent of air quality improvement and the amounts of emission reductions achieved from control measures for the preceding three year period.⁴

4 Sacramento Metropolitan Air Quality Management District, State Triennial Reports, <www.airquality.org/stateplan>, accessed December 4, 2007.

Toxic Air Contaminants

Regulation of TACs is achieved through federal and state controls on individual sources. The 1990 federal CAA Amendments offer a comprehensive plan for achieving significant reduction in both mobile and stationary source emissions of certain designated HAPs. All major stationary sources of designated HAPs are required to obtain and pay the required fees for an operating permit under Title V of the federal CAA Amendments.

The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588), California Health and Safety Code Section 44300 *et seq.*, provides for the regulation of over 200 air toxics and is the primary air contaminant legislation in the state. Under the Act, local air districts may request that a facility account for its TAC emissions. Local air districts then prioritize facilities on the basis of emissions, and high priority designated facilities are required to submit an HRA and communicate the results to the affected public. The TAC control strategy involves reviewing new sources to ensure compliance with required emission controls and limits, maintaining an inventory of existing sources of TACs, and developing new rules and regulations to reduce TAC emissions. The purpose of AB 2588 is to identify and inventory toxic air emissions and to communicate the potential for adverse health effects to the public.

Assembly Bill 1807 (AB 1807), enacted in September 1983, sets forth a procedure for the identification and control of TACs in California. The CARB is responsible for the identification and control of TACs, except pesticide use. AB 1807 defines a TAC as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. The CARB prepares identification reports on candidate substances under consideration for listing as TACs. The reports and summaries describe the use of and the extent of emissions in California resulting in public exposure, together with their potential health effects.

In 1998, the CARB identified DPM as a toxic air contaminant under the AB 1807 program. Diesel particulate matter is emitted into the air via heavy-duty diesel trucks, construction equipment, and passenger cars. In October 2000, the CARB released a report entitled *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. This plan identifies DPM as the predominant TAC in California and proposes methods for reducing diesel emissions.

Reducing Particulate Matter in California

As a first step in the implementation of Senate Bill 656 (SB 656, Reducing Particulate Matter in California), the CARB approved a list of the most readily available, feasible, and cost-effective control measures that can be employed by air districts to reduce PM₁₀ and PM_{2.5} (collectively referred to as PM) in 2004. The list is based on rules, regulations, and programs existing in California as of January 1, 2004, for stationary, area-wide, and mobile sources. As a second step air districts must adopt implementation schedules for selected measures from the list. The implementation schedules will identify the appropriate subset of measures, and the dates for final adoption, implementation, and the sequencing of selected control measures. In developing the implementation schedules, each air district will prioritize measures based on the nature and severity

of the PM problem in their area and cost-effectiveness. Consideration is also given to ongoing programs such as measures being adopted to meet national air quality standards or the state ozone planning process. The consideration and adoption of air district rules in their implementation schedules, coupled with CARB's ongoing programs, will ensure continued progress in reducing public exposure to PM and attainment of the state and federal standards.

Local

Sacramento Metropolitan Air Quality Management District

The SMAQMD is the primary agency responsible for planning to meet federal and state ambient air quality standards in Sacramento County and the larger Sacramento Ozone Nonattainment Area. In order to demonstrate the area's ability to eventually meet the federal ozone standards, the SMAQMD, along with the other air districts in the Nonattainment Area, maintain the region's portion of the SIP for ozone. The Nonattainment Area's part of the SIP is a compilation of regulations that govern how the region and State will comply with the FCAA requirements to attain and maintain the federal ozone standard. The compilation of rules that comprises the Sacramento Nonattainment Area's portion of the SIP is contained in a document called the *Sacramento Area Regional Ozone Attainment Plan*. The most recent update of the Plan was adopted on November 15, 1994. Currently, the SMAQMD is working to update the 1994 Plan in recognition of the new federal eight-hour standard for ozone. This process is currently ongoing.

As of July 1, 2008, the SMAQMD established an updated mitigation fee rate of \$16,000 per ton of emissions in excess of the SMAQMD NO_x threshold plus a 5% administrative fee. The mitigation fee is based on the Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) cost effectiveness cap. The Carl Moyer Program was named in honor of Dr. Carl Moyer who worked to create the program in an effort to improve California's air quality in the name of public interest. The Carl Moyer Program is a grant program, implemented by a partnership of CARB and local air districts that fund the incremental cost of cleaner-than-required engines, equipment, and other sources of pollution. The Carl Moyer Program grants provide early or extra emission reductions. It can also accelerate the development and commercialization of advanced emission control technology, accelerate the turnover rate of old equipment to newer and cleaner equipment, and help reduce costs to the regulated community. Projects to reduce emissions from on-road heavy-duty vehicles, idle reduction technologies, off-road diesel equipment and transportation, refrigeration units, off road spark-ignition equipment, marine vessels, locomotives, and agricultural engines have been eligible for grants.

For PM₁₀, the other criteria pollutant of concern for the Sacramento Region, Sacramento currently meets the federal standard, but has not yet been officially re-designated to attainment by the U.S. EPA.

Local Air District Rules

The following SMAQMD rules, including but not necessarily limited to the following, are applicable to the proposed project, summarized below:

Rule 201 – General Permit Requirements: Requires any project that includes the use of certain equipment capable of releasing emission to the atmosphere as part of project operation to obtain a permit from the SMAQMD prior to operation of the equipment. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact the SMAQMD to determine if a permit is required. Portable construction equipment with an internal combustion engine over 50 horsepower are required to have a SMAQMD permit or a CARB portable equipment registration.

Rule 403 – Fugitive Dust: Requires a person to take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation.

Rule 442 – Architectural Coatings: Sets VOC limits for coatings that are applied to stationary structures or their appurtenances. The rule also specifies storage and cleanup requirements for these coatings.

Rule 460 – Adhesives and Sealants: Limits VOC from the application of products used for bonding two surfaces. Also regulates the storage and disposal of solvents associated with such applications.

Rule 401 – Ringelmann Chart: Prohibits individuals from discharging into the atmosphere from any single source of emissions whatsoever any air contaminant whose opacity exceeds certain specified limits.

Rule 411 – Boiler NO_x: Sets NO_x and CO emissions from industrial, institutional, and commercial boilers, steam generators, and process heaters.

City of Sacramento 1988 General Plan

The City of Sacramento 1988 General Plan does not contain an Air Quality Element and there are no specific goals or policies that pertain to air quality. The City of Sacramento is currently updating its General Plan and plans to adopt a new General Plan by the end of 2008. Applicable policies from the draft Sacramento 2030 General Plan are included below.

City of Sacramento 2030 General Plan

The City anticipates adopting its new 2030 General Plan by the end of 2008. Therefore, applicable policies from the 2030 General Plan are included below.

ENVIRONMENTAL RESOURCES

Goal ER 6.1 Improved Air Quality. Improve the health and sustainability of the community through improved regional air quality and reduced greenhouse gas emissions that affect climate change.

Policies

ER 6.1.2 **Emissions Reduction.** The City shall require development projects that exceed the Sacramento Air Quality Management ROG and NO_x operational thresholds to incorporate design or operational features that reduce emissions equal to 15 percent from the level that would be produced by an unmitigated project.

ER 6.1.5 **Greenhouse Gas Reduction in New Development.** The City shall reduce greenhouse gas emissions from new development by discouraging auto-dependant sprawl and dependence on the private automobile; promoting development that is compact, mixed-use, pedestrian friendly, and transit-oriented; promoting energy-efficient building design and site planning, and improving the jobs/housing ratio of each community.

ER 6.1.6 **New Development.** The City shall review proposed development projects to ensure projects incorporate feasible measures that reduce construction and operational emissions for reactive organic gases, nitrogen oxides and particulate matter (PM₁₀ and PM_{2.5}) through project design.

- ER 6.1.8 **Development near Major Roadways.** The City shall require that new development with sensitive uses within 500 feet of a major roadway be designed with consideration of site and building orientation and incorporate appropriate technology for improved air quality, flow, ventilation, and filtration to lessen any potential health risks due to the project's proximity to the roadway.
- ER 6.1.9 **Coordination with SMAQMD.** The City shall coordinate with the Sacramento Metropolitan Air Quality Management District to ensure projects incorporate feasible mitigation measures if not already provided for through project design.
- ER 6.1.12 **Zero-Emission and Low-Emission Vehicle Use.** The City shall encourage the use of zero-emission vehicles, low-emission vehicles, and car-sharing programs by requiring sufficient and convenient infrastructure and parking facilities in residential developments and employment centers to accommodate these vehicles.
- ER 6.1.13 **Preference for Reduced Emission Equipment.** The City shall give preference to contractors using reduced-emission equipment for City construction projects as well as for City contracts for services (e.g., garbage collection).

Airport/Meadowview Community Plan

There are no goals, policies, or objectives in the Airport/Meadowview Community Plan related to air quality that apply to the proposed project.

South Area Community Plan

The City anticipates adopting the South Area Community Plan as part of the 2030 General Plan. There are no policies related to air quality that are relevant to the proposed project.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to construction and operation of the proposed project. Air pollutant emissions would result from construction activities, project operation, and increased traffic volumes.

The SMAQMD has published air quality thresholds of significance for use by lead agencies when making a determination of significance for a project. The SMAQMD thresholds establish standards for three types of impacts – short-term impacts from construction, long-term impacts from project operation, and cumulative impacts. The net increase in emissions generated by these activities and other secondary sources have been estimated and compared to the thresholds of significance recommended by the City and SMAQMD. The methodology for estimating emissions, as described in the SMAQMD Guide and other guidance documents, was used in this analysis.

Construction Emissions

Construction equipment information for the commercial portion of the proposed project was received from the applicant's construction consultant and used in the URBEMIS 2007 (Version 9.2.4) model, to estimate emissions. When possible, details such as horsepower and load factor were estimated using the best available information. Specific construction equipment information for the residential portion of the proposed project is not currently available because at this time the project developer(s) is unknown therefore the specific construction equipment is not known. Therefore, construction was

modeled using the default parameters of the URBEMIS 2007 emissions model. Please refer to Appendix E for URBEMIS modeling data.

Operational Emissions

Operational emissions refer to the emissions that are generated by the normal day-to-day activity of the project. These activities include the heating and cooling of buildings, landscape maintenance, emissions from increased traffic, and the use of consumer products by residents and employees.

Average emission factors for operational emissions of criteria pollutants are estimated by using emission factors in the URBEMIS 2007 emissions model, version 9.2.4. These emission factors are based on CARB's EMFAC2007. Mobile source emissions are largely driven by the daily trip generation rates calculated in the traffic study that was conducted for the proposed project. Please refer to Appendix E for modeling assumptions and results.

Localized CO Concentrations

The CALINE4 dispersion model for predicting CO concentrations is the preferred method of estimating pollutant concentrations at sensitive receptors near congested roadways and intersections. For each intersection analyzed, CALINE4 adds roadway-specific CO emissions calculated from peak-hour turning volumes to the existing ambient CO air concentrations. For this analysis, CO concentrations were calculated based on a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District. The simplified model is intended as a screening analysis in order to identify a potential CO hotspot. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations.

CO concentration levels are highest near crowded or congested intersections where traffic is slow or idling. The proposed project would increase traffic volumes on surrounding roadways, possibly degrading the existing level of service (LOS) and increasing CO concentrations at nearby intersections. Normally, barring other environmental considerations, CO concentrations should be carefully analyzed at intersections classified as LOS "D" or worse, which is usually considered to be "unacceptable" for traffic circulation.

The closest monitoring station to the project site is the T Street station located in midtown Sacramento. This station collects CO data for the 8-hour standard, but not the 1-hour standard. Consequently, monitoring data can be used to determine an 8-hour CO background value. For the 1-hour background, a persistence factor of 80 percent was used. A persistence factor is the ratio between the 8-hour and 1-hour concentrations. To ensure an adequate margin of safety, the highest 8-hour CO reading for the years 2004 through 2006 from the T Street station was used as the eight-hour background concentration.

Toxic Air Contaminants

The methodology contained in SMAQMD's *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways* was used to evaluate the health risk from DPM produced by diesel trucks using I-5 in the vicinity of the project site. The health effects of DPM on the

proposed project's residential land uses within 500 feet of I-5 (east and west of the freeway) were analyzed in a HRA as well as a screening protocol, see Appendix D.

Odors

The Bufferlands Master Plan establishes a buffer zone to ensure that odors from the Sacramento Regional Wastewater Treatment Plant (SRWTP) would not impact surrounding odor-sensitive land uses. Any residential land uses associated with the project that would encroach on the buffer zone are identified.

Standards of Significance

For the purposes of this EIR, impacts on air quality are considered significant if the proposed project would:

- increase NO_x levels above 85 pounds per day for short-term effects (construction);
- Increase either ozone precursors, NO_x or ROG, above 65 pounds per day for long-term effects (operation);
- emit PM₁₀ pollutants at a level equal to, or greater than, 5% of the CAAQS (50 micrograms/cubic meter for 24 hours) if there is an existing or projected violation; however, if a project is below the ROG and NO_x thresholds, it is assumed that the project is below the PM₁₀ threshold as well;
- result in CO concentrations that exceeds the 1-hour state ambient air quality standard of 20.0 parts per million (ppm) or the 8-hour state ambient standards of 9.0 ppm;
- substantially increase the risk of exposure to TACs; or
- generate substantial odors and/or expose a sensitive population to substantial noxious odors.

Project-Specific Impacts and Mitigation Measures

5.3-1 Construction of the proposed project would generate emissions of ozone precursors.

Construction activities associated with the proposed project would emit ozone precursors, ROG and NO_x associated with construction equipment. The SMAQMD has not developed a threshold of significance for ROG in construction equipment exhaust. Their main effort of ROG control is to limit the ROG in architectural coatings through SMAQMD Rule 442. However, heavy-duty diesel construction equipment emits substantial amounts of NO_x, and the SMAQMD has developed a threshold of 85 pounds per day for NO_x, from construction activity.

Equipment used during all stages of construction, such as grading, infrastructure installation, building construction, etc., were estimated using the URBEMIS 2007 (version 9.2.4) model defaults. Please refer to Appendix E for the model output listing all model assumptions.

ROG and NO_x emissions, as shown in Table 5.3-5, would vary by construction phase and would cease once construction is complete. Modeling indicates that construction equipment NO_x emissions would exceed the district's threshold of 85 lbs/day during all construction stages. Construction impacts would be temporary; however, since the URBEMIS model indicates that NO_x emissions associated with construction activities would exceed the 85 pounds-per-day threshold of significance, this would be considered a *significant impact*.

	ROG	NO _x	CO	PM ₁₀
Year 2009	76.4	513.0	1137.8	3096.8
Year 2010	52.5	318.6	974.6	3087.2
Year 2011	48.3	293.8	898.7	3086.0
Year 2012	28.8	129.5	761.3	10.9
Year 2013	26.1	115.8	701.1	10.3
Year 2014	23.72	103.4	645.7	9.8

Source: PBS&J, 2008.

Mitigation Measure

The SMAQMD requires that specific mitigation measures be implemented for all construction projects (included below in Mitigation Measure 5.3-1(a) through (c)). Mitigation Measure 5.3-1(d) is required by state law. Implementation of Mitigation Measure 5.3-1(a) through (d) would result in a minimum 20 percent reduction of NO_x construction emissions according to the SMAQMD Guide which assigns a point value that ultimately adds up to a percentage. While the proposed project's impact would be substantially reduced through implementation of these measures, the impact during construction would remain significant. However, the mitigation fee (see Table 5.3-6) collected under Mitigation Measure 5.3-1(e) would enable SMAQMD to reduce emissions from other NO_x sources to offset the project's construction NO_x emissions that exceed the current threshold. The project's contribution to SMAQMD's Offset Program would also be re-calculated by the air district prior to any grading activities to ensure fees paid would meet the district's current fee schedule. Therefore, compliance with these measures would reduce the impact to a *less-than-significant level*.

Year	Construction Activity	Mitigation Fee (\$16,000/ton)	
2009	Grading, Infrastructure, Commercial Construction	\$539,227	
2010	Grading, Infrastructure, Commercial Construction	\$89,667	
2011		\$190,520	
2012	Residential Construction	\$39,283	
2013	Residential Construction	\$16,085	
2014	Residential Construction	\$0	
Emissions Summary		Total Mitigation fee (\$16,000/ton + 5% administrative fee)	\$918,521
		Total Mitigation fee (\$/acre)	\$1200
Notes: Acreage of the proposed project is estimated at 729.06 acres which does not include 52.72 acres of Open Space. Calculation sheets are included in Appendix E. Source: PBS&J, 2007.			

- 5.3-1 a) *The project shall provide a plan, for approval by the lead agency in consultation with the SMAQMD, demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, would achieve a project wide fleet-average 20% NO_x reduction and 45% particulate reduction compared to the most recent CARB fleet average at time of construction. The SMAQMD shall make the final decision on the emission control technologies to be used by the project construction equipment; however, acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available;*
- b) *The project applicant and/or contractor shall submit to SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that shall be used an aggregate of 40 or more hours during any phase of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project applicant and/or contractor shall provide SMAQMD with the anticipated construction timeline, including start date and name and phone number of the project manager and on-site foreman.*
- c) *The project applicant and/or contractor shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly by contractor personnel certified to perform opacity readings, and a monthly summary of the visual survey results shall be submitted to the SMAQMD throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.*
- d) *Limit vehicle idling time to five minutes or less.*
- e) *In consultation with SMAQMD staff, and prior to the issuance of each grading permit, a construction mitigation fee and appropriate SMAQMD administrative fee shall be calculated and paid to the district based on the number of acres to be graded and the equipment to be used during grading activities. Fees shall be calculated using the Carl Moyer cost effectiveness figure of \$16,000 per ton of NO_x plus the 5% administrative fee, or applicable fee in effect at the time the grading permit is issued.*

5.3-2 Construction of the proposed project would generate emissions of particulate matter.

Prior to building construction, the building site(s) would have to be graded and prepared for development. Grading activities involve site clearing and leveling the land using heavy equipment such as scrapers, bulldozers, and backhoes. Particulate matter (e.g. fugitive dust, PM₁₀, or PM_{2.5}) is generated during this process as the ground is disturbed. The total amount of particulate matter generated is normally determined by the size of the graded area. The larger the area, the more particulate matter is created. Particulate emissions would also occur during other construction phases; however, the maximum amount of PM generated in one day is assumed to occur during grading operations.

Equipment used for mass grading as well as fine grading activities for the commercial portion of the proposed project was provided by the applicant and used in URBEMIS to estimate particulate matter emissions. Equipment for other stages of construction, such as building construction, paving, and architectural coating, were estimated using the URBEMIS 2007 (version 9.2.4) model defaults for these construction phases. Because construction equipment for the residential portion of the project is unknown at this time, construction equipment defaults contained in the URBEMIS model were used for all phases of construction, including, mass grading, fine grading, building construction, paving, and architectural coating. Please refer to Appendix E for the modeling output data sheets.

The SMAQMD recommends a PM₁₀ threshold of significance that is equal to the CAAQS for PM₁₀ of 50 µg/m³. As discussed in Chapter 2, Project Description, the project would be constructed over a six year period. As shown in Table 5.3-5, emissions of particulate matter reach their highest levels during the mass grading portion for each phase of construction. Based on the modeling, emissions associated with mass grading could reach a maximum of 3,097 pounds per day (the majority of emissions being fugitive dust). The amount of PM₁₀ generated is based on a conservative assumption that the maximum area for each phase that could be graded on any given day is 25 percent of the area. The SMAQMD's Guide specifies a methodology for evaluating whether a project would exceed the PM₁₀ standard during construction. Appendix B of the Guide contains Table B.1 – *Particulate Matter Screening Level for Construction Projects*. This table is used as a guide and lists various acreages and mitigation associated with the various acreage ranges designed to reduce PM₁₀ impacts to a less-than-significant level. As long as the appropriate mitigation measures are applied, the project would be considered to have a less-than-significant particulate matter impact. For the proposed project, the maximum acreage graded per day was assumed to be greater than the maximum acreage listed in Table B.1 (15 acres). Thus, project grading activities would generate emissions of PM₁₀ above the SMAQMD's threshold. This would be considered a *significant impact*.

Mitigation Measure

As long as a project's maximum acreage graded per day falls into one of the acreage ranges in Table B.1 of the SMAQMD Guide, and the appropriate mitigation measures are applied, the project would be considered to have a less-than-significant particulate matter impact. However, because the project has the potential to exceed the District's requirement to grade no more than 15 acres per

day, the following mitigation measure is required to ensure that this impact is reduced to a **less-than-significant level**.

- 5.3-2 a) *The project applicant shall limit the project's maximum acreage graded per day to no more than 15 acres or the project applicant shall model the project using a PM modeling program, such as the BEEST or AERMOD models, to determine the full PM impact of the project under the proposed grading acreages. Upon completion of the PM modeling, the results and recommended mitigation measures to reduce PM emissions below SMAQMD thresholds shall be submitted to the City for their approval. If more than 15 acres will be graded per day, dispersion modeling following SMAQMD procedures shall be completed, and mitigation measures shall be approved by the City prior to the issuance of grading permits. In either case, the project applicant shall implement Mitigation Measures 5.3-2 (b) through (m) below and other mitigation measures, deemed appropriate, as a result of the PM modeling to reduce local particulate matter concentrations below 50 µg/m³ per day.*
- b) *All disturbed areas, including storage piles that are not being actively used for construction purposes, shall be covered or watered with sufficient frequency as to maintain soil moistness;*
- c) *All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or a chemical stabilizer or suppressant;*
- d) *When materials are transported off-site, they shall be covered, effectively wetted to limit visible dust emissions, or maintained with at least 2 feet of freeboard space from the top of the container;*
- e) *All operations shall limit or expeditiously remove the accumulation of project-generated mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring;*
- f) *Following the addition of materials to, or the removal of materials from, the surfaces of outdoor storage piles, the storage piles shall be effectively stabilized of fugitive dust emissions using sufficient water or a chemical stabilizer or suppressant;*
- g) *On-site vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph);*
- h) *Wheel washers shall be installed for all trucks and equipment exiting from unpaved areas or wheels shall be washed manually to remove accumulated dirt prior to leaving the site;*
- i) *Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1 percent;*

- j) *Excavation and grading activities shall be suspended when winds exceed 20 mph; and*
- k) *The extent of areas simultaneously subject to excavation and grading shall be limited, wherever possible, to the minimum area feasible.*
- l) *The text of this measure shall be included in all construction plans and specifications.*
- m) *For all future discretionary projects associated with this project, either this measure shall apply, or additional PM analysis shall be required, which may include BEEST modeling if maximum acreage graded per day exceeds the acreage ranges in Table B.1 of the SMAQMD Guide.*

5.3-3 Operation of the proposed project would contribute to emissions of ozone precursors.

Implementation of the proposed project would generate an increase in criteria pollutants associated with operation of new residential, commercial, and recreational uses. ROG and NO_x are the primary criteria pollutants of concern in Sacramento County because they react to form ozone, which is considered a criteria pollutant. The County is currently in nonattainment of the federal and state ozone standards. The SMAQMD has developed thresholds of significance for these pollutants. PM₁₀ and PM_{2.5}, while an issue in Sacramento County, are not typically produced in high amounts by project operation; therefore, the SMAQMD sets no standards for PM₁₀ or PM_{2.5} for the long-term operational phase of a project.

Emissions associated with project operation would be created by the proposed project in two ways; (1) through the use of stationary equipment to operate facilities (i.e., water heaters and boilers), and (2) through an increase in traffic generated by the project. All new stationary equipment would require a permit from the SMAQMD prior to operation. This would ensure that the equipment achieves the lowest achievable emission rate for its equipment class. Consequently, the newer equipment may actually be held to more stringent emission standards than existing equipment present in areas adjacent to the project site.

The SMAQMD recommends that lead agencies require projects to reduce their ozone precursor emissions by 15 percent. The SMAQMD has prepared a list of measures and corresponding reduction credits that can be applied to meet the required 15 percent reduction in emissions. Each emission reduction measure is assigned a point value, which is “approximately equivalent to the percentage reduction in emissions from the level that would be produced by a base-case project assuming full trip generation per the current ITE Trip Generation Handbook.” The project applicant is required to prepare an Air Quality Management Plan (AQMP) to identify measures that would be implemented by the project to reduce air emissions. The proposed project is required to have a minimum of 15 points to sufficiently reduce air quality impacts. A draft AQMP has been prepared by the project applicant and is included in Appendix F. The AQMP will be finalized and endorsed by the SMAQMD. According to the draft AQMP, the following measures (and the associated point value) could be incorporated into the project design to reduce ozone precursor emissions:

- Non-residential portions of the project provide short-term and long-term bicycle parking facilities to meet peak season maximum demand (0.175 points).
- Non-residential portions of the project provide “end-of-trip” facilities including showers, lockers, and changing space (0.175 points).
- Long-term bicycle parking is provided at apartment complexes or condominiums without garages (0.45 points).
- The entire project is located within 1/2 mile of an existing Class I or Class II bike lane and project design includes a comparable network that connects the project uses to the existing offsite facility (0.625 points).
- The project provides a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site (1 point).
- Site design and building placement minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and non-residential uses that impede bicycle or pedestrian circulation are eliminated (1 point).
- Bus or streetcar service provides headways of one hour or less for stops within 1/4 mile; project provides safe and convenient bicycle/pedestrian access to transit stop(s) and provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting) (0.25 points).
- Project design includes pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by featuring traffic calming features (0.75 points).
- The project provides a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances (0.5 points).
- Parking facilities are not adjacent to street frontage (0.5 point).
- The project is oriented towards planned transit, bicycle, or pedestrian corridor. Setback distance is minimized (0.25 points).
- Project provides high-density residential development (2.52 points).
- Residential development projects of 5 or more dwelling units provide a deed restricted low-income housing component on-site (as defined in Chapter 22.35 of Sacramento County Ordinance Code) [Developers who pay into In-Lieu Fee Programs are not considered eligible to receive credit for this measure] (0.432 points).
- The project has at least three of the following on site and/or offsite within ¼ mile: Residential Development, Retail Development, Park, Open Space, or Office (3 points).
- The project does not include fireplaces or wood burning stoves (0.72 points).

- Provide shade (within 5 years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30 percent of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50 percent of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50 percent impervious) for a minimum of 50 percent of the parking lot area. Unshaded parking lot areas, driveways, fire lanes, and other paved areas have a minimum albedo of 0.3 or greater (1 point).
- Include permanent TMA membership and funding requirement. Funding to be provided by Community Facilities District or County Service Area or other non-revocable funding mechanism (5 points).

Based on the measures included in the project a 18.347 percent reduction could occur. This would exceed the 15 percent emission reduction/mitigation guideline established by the SMAQMD. Most of the selected measures listed above would not require monitoring beyond completion of project construction. Nonetheless, even with the inclusion of the above-mentioned design features, NO_x and ROG emissions associated with the proposed project would still exceed the SMAQMD threshold of 65 lbs/day.

The amount of ROG and NO_x pollutants that would be generated by operation of the project was calculated using the URBEMIS 2007 modeling program. The modeling was performed using the methodology described in the "Methods of Analysis" portion of this section. For this analysis, modeling all the project components as a whole was performed and emissions were calculated for the year of project buildout. Operational emissions for each new building include emissions from vehicle trips generated by the building occupants. As shown in Tables 5.3-7 and 5.3-8, the proposed project would exceed the SMAQMD thresholds of 65 lbs/day for ROG and NO_x. This would create a *significant impact*.

PROPOSED PROJECT DAILY OPERATIONAL OZONE PRECURSOR EMISSIONS (SUMMER)		
Emissions Source	Emissions in Pounds per Day	
	ROG	NO_x
Natural Gas	5.9	76.9
Hearth	----	----
Landscape Maintenance	17.1	1.2
Consumer Products	235.7	----
Architectural Coatings	58.9	----
Motor Vehicles	503.8	463.5
Maximum Daily Emissions	821.0	541.6
SMAQMD Thresholds (lb/day)	65	65
Significant Impact	Yes	Yes

Source: PBS&J, 2008. Calculation sheets provided in Appendix E.

PROPOSED PROJECT DAILY OPERATIONAL OZONE PRECURSOR EMISSIONS (WINTER)		
Emissions Source	Emissions in Pounds per Day	
	ROG	NO_x
Natural Gas	5.9	76.9
Hearth	2.01	34.4
Landscape Maintenance	----	----
Consumer Products	235.7	----
Architectural Coatings	58.9	----
Motor Vehicles	441.8	690.6
Maximum Daily Emissions	744.4	801.9
SMAQMD Thresholds (lb/day)	65	65
Significant Impact	Yes	Yes
Source: PBS&J, 2008. Calculation sheets provided in Appendix E.		

Mitigation Measure

Compliance with Mitigation Measure 5.3-3 would provide the additional ozone precursor reductions needed to achieve the minimum 15 percent recommended by the SMAQMD. Nonetheless, this reduction would not reduce operational impacts to a level that is below the standard of significance, since most emissions associated with the project are the result of vehicle trips. There are no other feasible mitigation measures available. Therefore, this impact would remain ***significant and unavoidable***.

5.3-3 *The project applicant shall implement the emission reduction strategies contained in the Delta Shores Air Quality Management Plan (AQMP). The AQMP shall be endorsed by the SMAQMD prior to the release of the Draft EIR. Documentation confirming implementation of the AQMP shall be provided to the SMAQMD and the City of Sacramento prior to issuance of occupancy permits, as required.*

5.3-4 The proposed project would increase traffic volumes that, in turn, would contribute to CO concentrations near roadways and intersections.

While motor vehicles emit ozone precursors ROG and NO_x, they also generate CO, which is a directly emitted pollutant. CO levels are highest at intersections where there is congestion and traffic is slow. The proposed project would add traffic to existing roadways and to new roadway intersections proposed as part of the project. To the extent that increases in traffic volumes lower the LOS, busy intersections could experience higher concentrations of CO. LOS D or worse results in conditions where traffic is no longer "free flow." The traffic section (see Section 5.12, Transportation and Circulation) identifies four intersections where LOS would be D, E, or F under baseline no project conditions during a.m. or p.m. peak hours. The traffic section also identifies five intersections where LOS would be D, E, or F under baseline plus project conditions during a.m. or p.m. peak hours under project build-out conditions. All other roadway intersections, due to lesser congestion and traffic, are expected to generate lower CO concentrations that would not exceed the federal or state 1-hour and 8-hour standards. CO modeling results for baseline no project conditions

can be found in Table 5.3-9; CO modeling results for baseline plus project conditions can be found in Table 5.3-10.

Intersection	CO Concentrations in Parts per Million ¹		
	25 Feet	50 Feet	100 Feet
Meadowview Road and Freeport Boulevard	5.5	5.1	4.7
Meadowview Road and 24 th Street	5.8	5.3	4.9
Mack Road and Franklin Boulevard	6.4	5.8	5.2
Cosumnes River Boulevard and Franklin Boulevard	6.2	5.7	5.1

Note:
National 8-hour standard is 9.0 ppm. State 8-hour standard is 9.0 ppm.
Source: PBS&J, 2007. Calculation sheets are provided in Appendix E.

Intersection	CO Concentrations in Parts per Million ¹		
	25 Feet	50 Feet	100 Feet
Meadowview Road and Freeport Boulevard	5.6	5.2	4.8
Meadowview Road and 24 th Street	6.1	5.5	5.0
Mack Road and Franklin Boulevard	6.4	5.9	5.2
Cosumnes River Boulevard and Franklin Boulevard	6.2	5.7	5.1
Cosumnes River Boulevard and Retail Access	6.7	6.0	5.3

Note:
National 8-hour standard is 9.0 ppm. State 8-hour standard is 9.0 ppm.
Source: PBS&J, 2007. Calculation sheets provided in Appendix E.

As shown in Tables 5.3-9 and 5.3-10, the modeling showed that 8-hour CO concentrations would not exceed the NAAQS or CAAQS under baseline plus project conditions. This would consequently be considered a ***less-than-significant impact***.

Mitigation Measure

None required.

5.3-5 Implementation of the proposed project could result in a substantial increase in exposure of sensitive receptors to toxic air contaminants.

Construction of the proposed project would generate TACs through the burning of diesel fuel. DPM has been identified as a TAC by the CARB. TAC effects from project construction equipment at existing schools or residences within the vicinity of the project would be small relative to their TAC exposure from existing sources such as diesel truck traffic on local roads and I-5. In addition, if the project was adopted by the City all construction equipment would have to adhere to the restrictions set forth in SMAQMD's standard mitigation measures (see Mitigation Measure 5.3-1), which would require a minimum 45 percent reduction in particulate matter emissions from project construction equipment.

Once the proposed project is completed and occupied, TACs could be generated from project-associated stationary sources (e.g., backup diesel generators, printing operations, dry cleaning operations, etc.) and mobile sources. Generally, office and residential uses do not contain large TAC sources. Even if the proposed project were to incorporate a large TAC source in future plans, permitting and operation of any such stationary source would be overseen by the SMAQMD and subject to Rule 904, Air Toxics Control Measures. These measures would ensure that risk from stationary TAC sources on the project site would be reduced to acceptable levels.

Mobile sources (e.g., automobiles and diesel-fueled trucks) associated with the proposed project would also generate TACs. Specifically, the proposed project would include diesel-fueled truck trips making deliveries to the commercial components of the project. In addition, traffic traveling on I-5 would generate TACs. The CARB issued a guidance document on air quality and land use called *Air Quality and Land Use Handbook: A Community Health Perspective*, which recommends that sensitive land uses not be located within 500 feet of a freeway or other high traffic roadway and that a site-specific HRA be performed as a way to more accurately evaluate the risk. In response to this document, SMAQMD has developed a methodology to assist local land use jurisdictions in assessing the potential cancer risk of siting sensitive land uses adjacent to major roadways. This methodology is contained in SMAQMD's document, *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways*. The methodology also provides a disclosure mechanism for those risks, and shows the relationship between potential cancer risk from DPM exposure and distance from a major roadway. Because the proposed project includes residential land uses within 500 feet of I-5 (east and west of the freeway), the City of Sacramento requires that planned development be evaluated in accordance with the SMAQMD methodology to estimate the potential cancer risk due to TAC.

A project screening for the proposed project was completed: *Project Screening for Sensitive Land Uses Adjacent to Major Roadways for the Delta Shores Planned Development, Sacramento, California* (May 2007). This project screening was conducted in accordance with the SMAQMD's *Recommended Protocol*. California Department of Transportation (Caltrans) 2005 traffic counts were used to estimate the peak hour traffic volume along I-5. While the peak hour traffic at the Pocket/Meadowview Roads interchange was 9,100 vehicles per hour and the Laguna Boulevard interchange was 6,500 vehicles per hour, the next highest screening volume (12,000 vehicles per hour) was used from the screening table, Table 5.3-11, to assess potential cancer risk. This volume provides a conservative estimate of the cancer risk for sensitive uses located within 500 feet of I-5. In addition, while the closest residential receptor would be located 117 feet from I-5, a distance of 100 feet from the edge of the nearest travel lane was used. The estimated incremental cancer risk for residential receptors east (downwind) of I-5 is 354 per million. The estimated incremental cancer risk for residential receptors west (upwind) of I-5 is 189 per million. These levels are below the SMAQMD evaluation criteria of 446 per million, at which a site specific HRA is recommended. Thus, no further roadway air quality analysis is recommended to address health risks.⁵

5 J House Environmental, Inc., *Project Screening for Sensitive Land Uses Adjacent to Major Roadways for the Delta Shores Planned Development*, Sacramento, California, May 10, 2007.

TABLE 5.3-11								
DIESEL PM CANCER RISK (POTENTIAL INCREMENTAL CANCER CASES PER MILLION PEOPLE) EAST AND WEST OF A NORTH-SOUTH FREEWAY								
Projects East and West of a North-South Roadway, Version 1.0								
Peak Hour Traffic (vehicles/hr)	Receptor Distance from Edge of Nearest Travel Lane (feet)							
	10	25	50	100	200	300	400	500
Incremental Cancer Risk Per Million: East (downwind)								
4000	249	213	168	117	75	57	45	36
8000	495	423	336	237	150	111	90	72
12000	744	636	504	354	225	168	132	111
16000	990	849	672	474	303	222	177	147
20000	1239	1062	840	591	378	279	222	183
24000	1488	1272	1008	711	453	336	267	219
Incremental Cancer Risk Per Million: West (upwind)								
4000	159	123	93	63	39	27	21	18
8000	315	249	183	126	78	57	45	36
12000	474	375	276	189	117	87	69	54
16000	633	501	369	252	156	114	90	75
20000	792	627	459	315	198	144	114	93
24000	948	750	552	378	237	174	135	111
Source: J House Environmental, Inc., <i>Project Screening for Sensitive Land Uses Adjacent to Major Roadways for the Delta Shores Planned Development</i> , Sacramento, California, May 10, 2007.								

Although the project screening for the proposed project found that cancer risk at residential receptors along I-5 would be below the SMAQMD evaluation criteria of 446 per million, an HRA was completed for the Delta Shores project: *Health Risk Assessment for Delta Shores Project*, July 2007 (a copy of the report is included in Appendix D). The HRA evaluates the health impacts of diesel exhaust particulate matter emitted by heavy-duty diesel trucks and diesel-fueled automobiles traveling along I-5. Although it is anticipated that traffic volumes on I-5 would increase over time, emissions of DPM would decrease over time due to greater efficiency and new technology in vehicle engines. The portion of the project site east of I-5 includes medium-density residential uses located approximately 126 feet from the edge of the nearest northbound I-5 traffic lane. The portion of the project site west of I-5 includes a mix of low-and medium-density residential uses located approximately 119 feet from the edge of the nearest southbound I-5 traffic lane. The HRA estimated the cancer risk of these receptors using the CAL3QHCR line source model. Based on this analysis, the maximum cancer risk for the nearest proposed residents would be 168 in 1 million. This value is less than the SMAQMD evaluation criterion of incremental cancer risk of 446 in 1 million. Table 5.3-12 shows the estimated incremental cancer risk for residential receptors up to 500 feet from I-5. It should be noted that the evaluation criterion does not represent a “safe” risk level or regulatory threshold. The evaluation criteria level of 446 cases per million is only the level at which the potential cancer risk would be reduced by 70 percent relative to the highest estimated cancer risk near major roadways in Sacramento County.⁶

6 Impact Sciences, Inc., *Health Risk Assessment for Delta Shores Project*, July 2007.

TABLE 5.3-12		
NET CANCER RISK DUE TO DIESEL PM FROM I-5 TRAFFIC		
Distance from Roadway (feet)	Annual Average DPM Concentration ($\mu\text{g}/\text{m}^3$)	Cancer Risk Based on 70-Year Exposure (cancer risk in 1 million)
East of Interstate 5 (downwind)		
10	1.16	348
25	1.01	303
50	0.83	249
100	0.60	180
114 (Nearest receptor)	0.56	168
200	0.39	117
300	0.29	87
400	0.23	69
500	0.19	57
West of Interstate 5 (upwind)		
10	0.71	213
25	0.58	174
50	0.43	129
100	0.30	90
107 (Nearest receptor)	0.29	87
200	0.19	57
300	0.14	42
400	0.11	33
500	0.09	27

Source: Impact Sciences, Inc., *Health Risk Assessment for Delta Shores Project*, July 2007, page 11.

TAC generated during construction of the proposed project would be minimized with implementation of SMAQMD's standard requirement, which would require a minimum 45 percent reduction in particulate matter emissions, which includes DPM from project construction equipment (see Mitigation Measure 5.3-1). If the proposed project were to incorporate a large TAC source in future plans for project operation, permitting and operation of any such stationary source would be overseen by the SMAQMD and subject to Rule 904, Air Toxics Control Measures, which would ensure that the risk from stationary TAC sources on-site would be reduced to acceptable levels. In addition, TAC from mobile sources traveling on I-5 would be less than the SMAQMD evaluation criterion of incremental cancer risk of 446 in one million. The methodologies and models used in the Project Screening and HRA for the project tend to over-predict impacts, such that they produce conservative (health-protective) results. For vehicles associated with internal project trips, because traffic volumes on roads within the project site would not be higher than the traffic volumes assumed for I-5, TAC from these sources would also be less than what was found in the Project Screening and HRA. However, health impacts from these sources would be much smaller than that of the DPM from I-5 (which are at levels are below the SMAQMD evaluation criteria of 446 cancer cases per million, as discussed in Impact 5.3-1 and shown in Table 5.3-12).

Because the proposed project would not expose sensitive receptors to TAC emissions from construction activities above SMAQMD standards (with implementation of Mitigation Measure 5.3-1) or operational activities (from traffic on I-5 and internal project roadways) above the SMAQMD evaluation criteria, this impact is considered ***less than significant***.

Mitigation Measure

None required.

5.3-6 The proposed project could generate objectionable odors or expose on-site sensitive uses to odors from existing odor sources.

Objectionable odors are a localized phenomenon and are confined to the vicinity of the emitter of the odor. Construction activities do not usually emit offensive odors. Although construction activities occurring in association with the proposed project could generate airborne odors associated with the operation of construction vehicles (i.e., diesel exhaust) and the application of interior and exterior architectural coatings, these emissions would only occur during daytime hours, would generally be restricted to the immediate vicinity of the construction site and activity, and would not affect a substantial number of people.

Offensive odors are usually associated with land uses that include agriculture, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Potential operational airborne odors could result from cooking activities associated with new residences and restaurants. However, these odors would be similar to existing residential and restaurant uses in the vicinity and would be confined to the immediate vicinity of the new buildings. The other potential source of odors would be new trash receptacles within the proposed project area. Trash receptacles within the project area would be required to have lids that enable convenient collection and loading and would be emptied on a regular basis, in compliance with City of Sacramento regulations for the collection of solid waste.

The existing SRWTP and its buffer lands are adjacent to the project site to the south. There is a potential for activities at the SRWTP to create objectionable odors that could affect sensitive receptors in the vicinity of the plant. However, according to the Buffer lands Master Plan, an odor impact zone has been delineated within 2,000 feet of the process area, where high population densities are prohibited. The entire Delta Shores project is located outside of the odor impact zone.⁷ In addition, the proposed project is located downwind of the SRWTP as much as 14 percent of the time. At other times the winds are either calm or blowing from the north and northwest, keeping the project site upwind of the SRWTP.⁸

Because the proposed project is located outside of the SRWTP's odor impact zone and would not be significantly impacted by winds blowing objectionable odors to the north, this impact is considered ***less than significant***.

Mitigation Measure

None required.

7 Carollo Engineers, *Bufferlands Master Plan – Final Draft*, August 2000, pages 1-3 and 1-4.

8 U.S. Environmental Protection Agency, Wind Roses for Selected Areas, <www.epa.gov/ttn/naaqs/ozone/areas/wind.htm>, accessed December 9, 2007.

Cumulative Impacts and Mitigation Measures

The cumulative context of an air pollutant is dependent on the specific pollutant being considered. Ozone precursors are a regional pollutant; therefore, the cumulative context would be existing and future development within the entire SVAB. This means that ozone precursors generated in one location do not necessarily have ozone impacts in that area. Instead, precursors from across the region can combine in the upper atmosphere and be transported by winds to various portions of the air basin. Consequently, all ozone precursors generated throughout the air basin are part of the cumulative context.

For localized pollutants such as PM₁₀ and CO, the cumulative context would include existing and proposed future development in the immediate vicinity of the proposed project. The localized nature of PM₁₀, means that emissions generated by project-related activity would only affect the area in, and directly around, the project site. Consequently, only PM₁₀ emissions from non-project sources near the project site could conceivably combine with project emitted emissions and create a cumulative impact.

For CO, which is the product of fuel combustion, the cumulative context would be all existing and future traffic on local roads in the vicinity of the project site. The existing and future traffic would include all the development currently contributing to traffic volumes on the local roads analyzed in the traffic study, as well as all reasonable foreseeable future development, including the proposed project, that would contribute to traffic volumes on the local roads analyzed in the traffic study. The traffic is accounted for in the traffic study produced for the proposed project, and CO modeling at intersections uses the cumulative numbers in the traffic study.

Odors are not evaluated in the cumulative analysis because the project does not include any land uses that when combined together with other potential odor causing land uses could potentially create an odor impact. Therefore, odor issues are not addressed in the cumulative analysis.

5.3-7 Construction of the proposed project combined with other development in the air basin would increase cumulative levels of ozone precursors.

On-going construction activities that occur simultaneously with project construction in the larger air basin would contribute emissions of ozone precursors (ROG and NO_x). While those emissions would be temporary, combined they could exceed the SMAQMD thresholds. As specified in Impact 5.3-1, without the imposition of SMAQMD required NO_x reductions, significant levels of ozone precursors could be generated during project construction. Therefore, the project's contribution to this cumulative impact would be considerable and this would be a *significant cumulative impact*.

Mitigation Measure

Implementation of Mitigation Measures 5.3-1(a) through (d) would result in a minimum 20 percent reduction of project NO_x construction emissions. The mitigation fee collected under Mitigation Measure 5.3-1(e) would enable the SMAQMD to reduce emissions from other NO_x sources off-site to offset the project's construction NO_x emissions that exceed the SMAQMD's threshold. Further,

implementation of the SMAQMD standard mitigation measures would be required for all other projects in the Sacramento area with significant construction-phase NO_x emissions. Therefore, compliance with these measures would substantially limit the project's contribution to and cumulative construction-phase NO_x emissions would be reduced to ***less than significant***.

5.3-7 *Implement Mitigation Measures 5.3-1 (a) through (e).*

5.3-8 Construction of the proposed project combined with any other development in the vicinity of the project site would increase cumulative levels of particulate matter.

As specified in Impact 5.3-2, significant levels of particulate matter could be generated during project excavation, grading, and other construction activities. These PM₁₀ emissions, when combined with other construction projects in the vicinity of the project could be considerable. Construction of the Cosumnes River Boulevard interchange for I-5 would occur during construction of the proposed project. Construction of both projects would contribute to cumulative PM₁₀ emissions that could result in a significant cumulative increase. Because the proposed project's PM₁₀ emissions would exceed established thresholds, its contribution would be considerable resulting in a ***significant cumulative impact***.

Mitigation Measure

Implementation of the following mitigation measure would reduce fugitive dust emissions. Compliance with the mitigation measure specified below would substantially limit the project's contribution to construction particulate matter and this cumulative impact would be ***less than significant***.

5.3-8 *Implement Mitigation Measures 5.3-2(a) through (m).*

5.3-9 Operation of the proposed project combined with other on-going development in the air basin would increase cumulative levels of ozone precursors.

As discussed above, the air basin is currently in non-attainment for ozone. As future growth occurs in the basin, vehicle use and other activities would increase the amount of ozone precursors generated. Increases in air pollutants would further degrade air quality and make attainment of the AQMP more difficult. The proposed project would contribute to the cumulative degradation in air quality by generating vehicle trips and developing uses that rely on heating and cooling and other activities that require energy. As discussed under Impact 5.3-3, the proposed project does contain a number of features that would lessen reliance on vehicles and promote energy efficiency, which would, in turn, reduce the amount of air pollution generated by project-related activities. Nonetheless, the proposed project would generate a substantial amount of ROG, NO_x and other pollutants. In addition, the SMAQMD Guide considers projects to be cumulatively significant if the project would require a change in the existing land use designation (e.g., general plan amendment, rezone) and if the projected ozone precursor emissions from the new uses would be greater than the emissions anticipated for the site under the existing land use designation. The project is proposing a General Plan Amendment as well as a rezone which would increase the intensity of the project site from an agricultural to suburban. For this reason, the project's contribution to air quality degradation

and long-term operational ozone precursor emissions would be considerable; therefore, this cumulative impact would be *significant*.

Mitigation Measure

Implementation of the emission reduction strategies included in the AQMP for the proposed project would reduce the project's contribution to operational emissions by approximately 25 percent. However, even with implementation of the AQMP, the project's contribution to operational emissions would remain above the SMAQMD significance threshold. There are no mitigation measures that would reduce the project's contribution to a less-than-significant level. Consequently, cumulative operational ozone precursor emissions would remain ***significant and unavoidable***.

5.3-9 Implement Mitigation Measure 5.3-3.

5.3-10 The proposed project, in conjunction with other future development in the project vicinity, would contribute to cumulative CO levels.

For cumulative impacts, project-related CO impacts are evaluated in combination with CO emissions from other existing and future development. The traffic study prepared for the proposed project predicts future (2032) traffic volumes at nearby intersections for cumulative plus project conditions. This evaluation also takes into account traffic from other sources that would be in existence at this future date. It should be noted that it is unlikely that future projects would result in long-term future exposure of sensitive receptors to substantial pollutant concentrations, because CO levels are projected to be lower in 2032 due to improvements in vehicle emission rates predicted by the CARB. Maximum CO concentrations were determined by conducting modeling at ten intersections that would have LOS "D" or below in 2032. Table 5.3-13 shows the expected maximum eight-hour CO concentrations for these intersections in 2032 with buildout of the proposed project, and assumes cumulative traffic in the calculations. As shown on Table 5.3-13, even though LOS would be further degraded in the future, CO levels under any scenario would not exceed the NAAQS or CAAQS for CO. This would be a ***less-than-significant cumulative impact***.

Intersection	CO Concentrations in Parts per Million¹		
	25 Feet	50 Feet	100 Feet
Meadowview Road and Freeport Boulevard	4.0	3.9	3.8
Meadowview Road and Manorside Drive	3.9	3.8	3.8
Meadowview Road and 24 th Street	4.0	4.0	3.9
Meadowview Road and Detroit Boulevard	4.1	4.0	3.9
Mack Road and Franklin Boulevard	4.0	4.0	3.9
Cosumnes River Boulevard and Franklin Boulevard	4.1	4.0	3.9
Cosumnes River Boulevard and Freeport Boulevard	3.9	3.8	3.8
Cosumnes River Boulevard and Retail Access	4.1	4.0	3.9
Cosumnes River Boulevard and Delta Shores Circle	4.2	4.0	3.9
Cosumnes River Boulevard and SR 99 SB Ramps	4.5	4.3	4.1

Note:
National 8-hour standard is 9.0 ppm. State 8-hour standard is 9.0 ppm.
Source: PBS&J, 2007. Calculation sheets provided in Appendix E.

Mitigation Measure

None required.

5.3-11 The proposed project could contribute to cumulative increases in TACs within the air basin.

As discussed in Impact 5.3-5, a HRA was performed using the guidance provided by the CARB and SMAQMD, and is provided in its entirety in Appendix D. While these do not provide guidance for cumulative impacts from TACs, the evaluation for DPM emissions provided in Impact 5.3-5 include emission factors and cumulative traffic data for the analysis year 2015, the anticipated buildout year of the proposed project.⁹ Thus, the HRA provides an analysis of potential cancer risks under cumulative conditions at buildout of the proposed project in the year 2015. As discussed in the HRA, potential cancer risks from exposure to DPM from I-5 in the year 2015 were determined to be less than the specific trigger amount identified in the guidance document provided by SMAQMD (446 per million). These evaluations resulted in incremental cancer risks at the nearest resident of 168 in 1 million, which is below the significance threshold established by SMAQMD. As a result, DPM emissions would not expose sensitive receptors to a substantial risk, and this cumulative impact would be ***less than significant***.

Mitigation Measure

None required.

9 Impact Sciences, Inc., *Health Risk Assessment for Delta Shores Project*, July 2007, page 4.

5.4 BIOLOGICAL RESOURCES

5.4 BIOLOGICAL RESOURCES

INTRODUCTION

This section identifies the potentially affected biological resources including wetlands and special status plant and animal species that could be affected by implementation of the proposed project. Included in the discussion is a summary of applicable laws and regulations related to biological resources and agencies responsible for their implementation.

The California Department of Fish and Game (CDFG) provided comments in response to the NOP that addressed concerns associated with biological resources (see Appendix B). CDFG requested that the Draft EIR discuss and provide adequate mitigation for the following concerns: the project's impact on fish, wildlife and their habitat and to provide a discussion as to how the project could affect their function and value; the project's impacts on wetlands, including vernal pools and riparian habitat; the project's impact on special status species; cumulative impacts on fish, wildlife, water quality, and vegetative resources; and an evaluation of the project's consistency with applicable land use, or species recovery plans, such as General Plans, Specific Plans, Habitat Conservation Plans, and Critical Habitat Designation. These issues are all addressed in this section.

The analysis presented in this section is based on reconnaissance-level site visits and review of existing documentation, including the following: City of Sacramento 1988 General Plan, draft City of Sacramento 2030 General Plan and background information; *Special-Status Species Assessments for East Delta Shores*, ECORP Consulting, June 6, 2007; *Special-Status Species Assessment for West Delta Shores*, ECORP Consulting, June 12, 2007; *Arborist Survey Report for East Delta Shores*, ECORP Consulting, June 15, 2006; *Arborist Survey Report for West Delta Shores*, ECORP Consulting, June 12, 2007; *Delta Shores – Valley Elderberry Longhorn Beetle Survey Report*, ECORP Consulting, September 12, 2007; *Wetland Delineation Report for East Delta Shores*, ECORP Consulting, September 5, 2006; *Wetland Delineation Report for West Delta Shores*, ECORP Consulting, June 13, 2006; *Delta Shores – Giant Garter Snake Habitat Assessment*, ECORP Consulting, June 13, 2007; *2006 Dry Season Survey 90-Day Report of Findings Regarding Federally Listed Branchiopods for Delta Shores East*, ECORP Consulting, March 7, 2007; *2006-2007 Wet Season Survey 90-Day Report of Findings Regarding Federally Listed Branchiopods for Delta Shores East*, ECORP Consulting, July 25, 2007; a query of the CDFG Natural Diversity Database (CNDDDB) for the Florin and Clarksburg USGS 7.5 minute topographic quadrangles (quads); a review of the U.S. Fish and Wildlife Service (USFWS) Endangered and Threatened Species list for the Florin and Clarksburg USGS 7.5' quadrangles; and the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants for the Florin, Sacramento East, Carmichael, Clarksburg, Courtland, Sacramento West, Elk Grove, Bruceville and Galt USGS 7.5 minute topographic quadrangles.

All of these documents are available for review at the City's Development Services Department, 300 Richards Boulevard, 3rd Floor, between 8:00 a.m. and 4:00 p.m.

ENVIRONMENTAL SETTING

Project Location

The proposed project site is located in Township 7 North, Range 4 East, Sections 11 and 14, Clarksburg USGS quadrangle map and in Township 7 North, Range 4 East, Section 7, 12, 13, and part of the unnumbered section of the Florin USGS quadrangle map in the City of Sacramento on approximately 800 acres in south Sacramento along Interstate 5 (I-5). The project site is located adjacent to a developed area southwest of the I-5 Meadowview Road/Pocket Road freeway exit. The western portion of the project site consists of approximately 120 acres and is located west of I-5, bounded by Freeport Boulevard to the west and the Bartley Cavanaugh Golf Course to the south. The eastern portion of the project site consists of the remaining 665 acres located on the east side of I-5, bounded by Morrison Creek and the Sacramento Regional County Sanitation District (SRCS) bufferlands to the south, PG&E power lines and existing development to the north, and undeveloped land and the federally-owned (U.S. Department of Labor) Sacramento Job Corps facility to the east.

Project Site

The 782-acre project site includes approximately 765 acres of agricultural land located south of the Meadowview neighborhood in the south area of the city of Sacramento. The majority of the project site is currently undeveloped and used for agricultural production (wheat, alfalfa, oats).

The applicant's biologist, ECORP Consulting (ECORP), conducted site surveys from November 2005 through July 2007. In addition, biologists from PBS&J also surveyed the site in March and May 2007. The survey consisted of walking the perimeter of the site, followed by representative transects across the site with a focus on any potential habitat for special-status plant or wildlife species. The majority of the project area consists of agricultural fields. In the perimeter of these fields non-native grasses and forbs were observed. Plant species found in this area include wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), wild rye (*Lolium multiflorum*), filaree (*Erodium botrys*), wild mustard (*Brassica* sp.) and curly dock (*Rumex crispus*). Trees, shrubs, or other ornamental vegetation are present mostly in the western section of the project site, with a few trees in the eastern section. Trees present on the site include Fremont's cottonwood (*Populus fremontii*), walnut trees (*Juglans* sp.), valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), willow (*Salix* sp.), cherry (*Prunus* sp.), acacia (*Acacia* sp.), Italian cypress (*Cupressus* sp.), English walnut (*Juglans* sp.), mulberry (*Morus* sp.), alder (*Alnus* sp.) and ornamental trees.^{1,2}

Seasonal wetlands, a seasonal swale, and drainage ditches were also observed in the project site. A total of 27.51 acres of potentially jurisdictional waters of the U.S. were mapped within the project site by ECORP Consulting.^{3,4} Table 5.4-1 provides a preliminary summary of wetlands acreage.

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- 1 ECORP, *Arborist Survey Report for West Delta Shores*, June 12, 2007.
 - 2 ECORP, *Arborist Survey Report for East Delta Shores*, June 15, 2006.
 - 3 ECORP, *Wetland Delineation for East Delta Shores*, September 5, 2007.
 - 4 ECORP Consulting, *Wetland Delineation for West Delta Shores*, June 13, 2006.

Category	Acreage ¹
Waters of the U.S.	
Delta Shores West	0.41
Delta Shores East	27.1
Subtotal	27.51
Other Waters of the U.S.	
Ditch/Canal	0.914 ¹
TOTAL	28.42
Note: 1. Subject to verification by the Corps of Engineers. Sources: ECORP, <i>Wetland Delineation for East Delta Shores</i> September 5, 2007; ECORP, <i>Wetland Delineation for West Delta Shores</i> June 13, 2006; Brown, Shannon, ECORP, e-mail communication to Christine Kronenberg, May 1, 2007. United States Army Corps of Engineers, Delta Shores (West & East) Wetland Delineation Verification Letter (200600311) to Joseph Karnes, November 7, 2006.	

The seasonal wetlands and seasonal wetland swale areas are farmed; the irrigation ditches do not show evidence of prolonged periods of inundation. Figure 5.4-1 depicts the location of the wetlands within the project site.

Existing Land Cover Types

There are three land cover types present on the proposed project site; 1) urban/developed, 2) aquatic, and 3) agricultural. These land cover types provide different habitat values for a variety of wildlife. A discussion of each cover type is provided below.

Urban/Developed

Urban/developed land cover consists of those areas where the native vegetation has been cleared for residential, commercial, industrial, transportation, or recreational structures. This type of land cover is found within the western section of the project site and consist of an abandoned dairy farm and adjacent structures totaling approximately 4-acres. At present, the dominant plant species surrounding the abandoned dairy includes wild oats, riggut brome, yellow star thistle (*Centaurea solstitialis*), vetch (*Vicia* sp.), field bindweed (*Convolvulus arvensis*), milk thistle (*Silybum marianum*), and stinging nettles (*Urtica dioica*). Other plants observed during field surveys included cutleaf geranium (*Geranium dissectum*), wild mustard, and Italian thistle (*Carduus pycnocephalus*).⁵ Wildlife usually encountered in this type of land cover include European starling (*Sternus vulgaris*), mourning dove (*Zenaida macroura*), northern flicker (*Colaptes auratus*), western scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), northern mocking bird (*Mimus polyglottos*), Brewer's blackbird (*Euphagus cyanocephalus*), yellow-billed magpie (*Pica nuttalli*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*) house mouse (*Mus musculus*) house cats (*Felis domesticus*), western gray squirrel (*Sciurus griseus*) and raccoon (*Procyon lotor*).⁶ Several native and ornamental trees were also observed within this habitat type. The trees are located adjacent to the private residences and golf course. The trees observed

5 PBS&J, Delta Shores Field Visit, May 18, 2007.

6 Author's personal observation.

include 93 valley oak, 69 walnut trees, 8 Fremont's cottonwood, 1 alder (*Alnus* sp.), 15 cherry (*Prunus* sp.), 8 acacia (*Acacia* sp.), 1 Italian cypress (*Cupressus* sp.), 1 English walnut (*Juglans* sp.), 1 mulberry (*Morus* sp.), and 4 orange (*Citrus* sp.).⁷

Valley oak trees with a circumference equal to or greater than 36 inches (diameter at breast height [dbh] equal or greater than 11.46 inches) would qualify as a heritage trees pursuant to the City of Sacramento Tree Preservation Ordinance. Heritage trees are valued for their ability to promote scenic beauty, enhance property values, reduce soil erosion, improve air quality, abate noise, and provide shade to reduce energy consumption. The intent and purpose of protecting heritage trees is to promote the health, safety, and welfare of present and future residents of the City of Sacramento.

Aquatic

Aquatic land cover present within the project site includes seasonal wetlands, a seasonal wetland swale and irrigation/drainage ditches.

Seasonal Wetlands

Seasonal wetlands are typically found in topographic depressions, seasonal wetlands generally exhibit prolonged periods of inundation or saturation during the rainy season and are dry by summer. They contain facultative or greater graminoid species (grasses and grass-like species), such as rush (*Juncus* spp.), tall flatsedge (*Cyperus eragrostis*), ryegrass (*Lolium perenne*), along with broad-leaved herbaceous plants such as pennyroyal (*Mentha pulegium*), hyssop loosestrife (*Lythrum hyssopifolium*), etc.

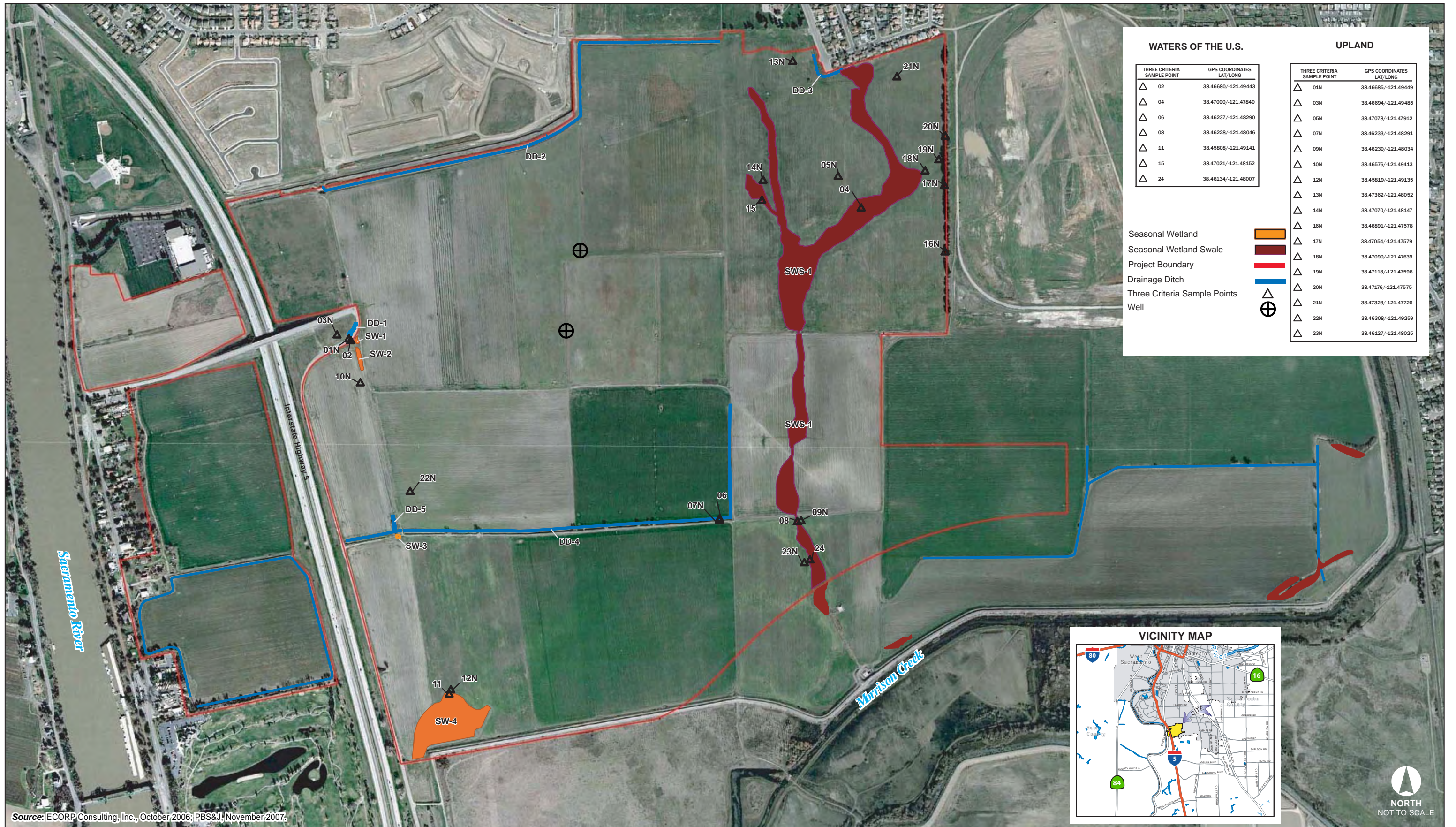
Seasonal Swales

Seasonal swales are typically narrow, linear seasonal wetlands found in low-lying areas, often at the base of hills where surface water collects. Swales typically lack a well-defined channel and are sparsely vegetated or are vegetated with species similar to those found in seasonal wetlands. In most instances, swales do not pond water (and are therefore not suitable habitat for vernal pool branchiopods), but the underlying soil may remain saturated for extended periods during the rainy season.

Drainage Ditch

Ditches are recent or historic linear features clearly anthropogenic (human-caused), usually in association with agricultural practices to convey water. Ditches can also be found along roads. Ditches have a defined bed and bank and limited vegetation, since they are typically scoured by the action of moving water or the vegetation is removed by the landowner during maintenance.

7 ECORP, *Arborist Survey Report for West Delta Shores*, June 12, 2007.



Source: ECORP Consulting, Inc., October 2006; PBS&J, November 2007.

FIGURE 5.4-1
Biological Resources Wetlands



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Delta Shores

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The seasonal wetlands and seasonal wetland swale areas are periodically farmed and do not appear to provide suitable aquatic habitat for special status species known to exist in the region. The irrigation ditches also do not show evidence of prolonged periods of inundation or any habitat value. It appears as though the irrigation ditches periodically convey water during the growing season to support agricultural practices and likely convey runoff during the rainy season. These short periods of inundation do not provide suitable aquatic habitat for fish, amphibians, or reptiles. Many portions of the drainage ditches were unvegetated due to the scouring effects of water, those portions that support vegetation are dominated by tall nutsedge (*Cyperus eragrostis*), bristly ox-tongue, dallisgrass (*Paspalum dilatatum*), perennial ryegrass (*Lolium perenne*), rush (*Juncus* sp.), smartweed (*Polygonum hydropiperoides*) and cattail (*Typha* sp.).⁸

Plant species observed within the seasonal wetland swale include wheat (*Triticum aestivum*), curly dock, annual hairgrass (*Deschampsia danthonioides*), alkali-mallow (*Malvella leprosa*), morning glory (*Convolvulus arvensis*), hayfield tarweed (*Hemizonia congesta*), broad-leaf pepper grass (*Lepidium latifolium*), purslane speedwell (*Veronica peregrina*), hyssop loosestrife (*Lythrum hyssopifolium*), mouse-ear chickweed (*Cerastium glomeratum*), toad rush (*Juncus bufonius*), little quaking grass (*Briza minor*), wild oat (*Avena fatua*), Harding grass (*Phalaris aquatica*), slender popcorn flower (*Plagiobothrys stipitatus*), mayweed (*Anthemis cotula*), paradox canarygrass (*Phalaris paradoxa*), paniced willow-herb (*Epilobium brachycarpum*), annual rabbit-foot grass (*Polypogon monspeliensis*), bristly ox-tongue (*Picris echioides*), prickly lettuce (*Lactuca serriola*), Italian ryegrass, and soft brome.⁹

Agricultural

Agricultural land cover is the largest area present on site, totaling approximately 765 acres. These areas are tilled and cultivated for agricultural crops such as safflower (*Carthamnus tinctoria*), wheat, alfalfa (*Medicago* sp.), and oats. In some areas, nonnative weedy vegetation, such as thistles, mustards, and a variety of other forbs are also common. Agricultural land supports a variety of wildlife, particularly ground-nesting birds such as western meadowlarks (*Sturnella neglecta*). Irrigated agricultural land, particularly alfalfa, can provide a variety of wildlife benefits due to its relatively high production of small rodents. Several birds that forage in open grasslands, such as white-tailed kite (*Elanus leucurus*), Swainson's hawk (*Buteo swainsoni*) and great blue herons (*Ardea herodias*), may also use this land cover type for foraging. Cropland has a higher value for terrestrial mammals (e.g., black-tailed jackrabbit [*Lepus californicus*]) and herbivorous birds (e.g., red-winged blackbird [*Agelaius phoeniceus*]) near harvest time when the standing crop is mature and produces a quantity of food (e.g., fruit, seeds), than it does after the harvest when the cropland is fallow.

Wildlife Resources

The proposed project site is predominately agricultural vegetation and undeveloped areas that primarily support common birds and mammals. Wildlife species that were observed or expected to

⁸ ECORP, *Wetland Delineation for East Delta Shores*, September 5, 2006.

⁹ ECORP, *Wetland Delineation for East Delta Shores*, September 5, 2006.

occur in the project site are western scrub jay, American crow, northern mockingbird, Brewer's blackbird, white-tailed kite, red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), Swainson's hawk, barn owl (*Tyto alba*), northern harrier (*Circus cyaneus*), yellow-billed magpie, house finch, house sparrow, house mouse, black rat (*Ratus ratus*), deer mice (*Peromyscus maniculatus*), California vole (*Microtus californicus*), house cat, raccoon, coyote (*Canis latrans*) and skunk (*Mephitis mephitis*).

Wildlife Movement

Terms such as habitat corridors, linkages, crossings, and travel routes, are used to describe physical connections that allow wildlife to move between patches of suitable habitat in undisturbed landscapes as well as environments fragmented by urban development. To clarify the meaning of these terms and facilitate the discussion of wildlife movement in this analysis, these terms are defined below.

Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Wildlife corridors link areas of suitable habitat that are otherwise separated by areas of non-suitable habitat such as rugged terrain, changes in vegetation, or human disturbance. Wildlife corridors are essential to the regional ecology of a species because they provide avenues of genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities. Fragmentation of open space areas by urbanization creates "islands" of wildlife habitat that are more or less isolated from each other. Wildlife corridors are typically relatively small, linear habitats that connect two or more habitat patches that would otherwise be fragmented or isolated from one another. Although it is commonly used as a synonym for wildlife corridor, a habitat linkage refers to a more substantial, or wider, land connection between two habitat areas.

Habitat linkages allow for the periodic exchange of animals between habitat areas, which is essential to maintain adequate gene pools. This linkage is most notable among populations of medium-sized and larger animals.

A **travel route** is usually a landscape feature (such as a ridgeline, drainage, canyon, or riparian corridor) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another. It provides adequate food, water, or cover for individuals moving between habitat areas and provides a relatively direct link between target habitat areas.

Wildlife crossings are small, narrow areas that are relatively short in length. They allow wildlife to bypass an obstacle or barrier. Crossings typically are manmade and include culverts, underpasses, drainage pipes, bridges, and tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent "choke points" along a movement corridor.

The project site would have minimal wildlife movement due to its location (adjacent urban environment), agricultural nature of the site, and adjacent urban activities (i.e., I-5).

Special-Status Species

ECORP conducted special-status species surveys for the western and eastern portions of the site.^{10,11} Information on special-status species and habitat occurring both on the site and in the vicinity of the project site was obtained from ECORP's Special-Status Species Survey Reports, the CDFG CNDDDB (information dated March 3, 2007), the CNPS's Electronic Inventory of Rare and Endangered Vascular Plants of California¹² for the U.S. Geological Survey's 7.5-minute Florin, and Clarksburg quadrangle maps. The following section addresses special-status biological resources observed, reported, or having the potential to occur on the project site. These resources include plant, habitat, and wildlife species that have been afforded special status and/or recognition by federal and state resource agencies, as well as private conservation organizations and special interest groups, such as the CNPS. Figure 5.4-2 depicts the location of special-status species in the vicinity of the project site.

Table 5.4-2 lists species likely to occur in and/or be affected by the proposed project, which was derived from the CNDDDB and CNPS database queries. This list represents those species identified in the review as having the highest likelihood to occur in the project site (i.e., within the known range, or with potential habitat present). A description of those species that were not identified as being present on the site and where no suitable habitat exists to support the species on-site are included in Appendix G. The species with the highest likelihood of occurrence is provided below.

Vernal Pool Branchiopods

Vernal pool fairy shrimp (*Branchinecta lynchi*), midvalley fairy shrimp (*Branchinecta mesovallensis*) and California linderiella (*Linderiella occidentalis*) are all federally listed as threatened. Midvalley fairy shrimp and California linderiella are state species of concern. Fairy shrimp are small (11 to 27 mm) crustaceans adapted to survive the annual flooding and drying of vernal pools. They grow for about two weeks, breed, and produce eggs that the females carry in an egg sac until they mature. As the vernal pool dries, the adults die, and the eggs (known as cysts when dry) become embedded in the mud at the bottom of the pool. These "resting" eggs are protected by thick outer coverings that resist cold, heat, and desiccation during the summer months. Vernal pool fairy shrimp occur commonly in vernal pools and seasonal wetlands throughout the Great Central Valley and may be present within the seasonal wetlands at the project site. There are known CNDDDB occurrences for these species within five miles of the project site.

10 ECORP, *Special-Status Species Assessment for West Delta Shores*, June 12, 2007.

11 ECORP, *Special-Status Species Assessment for East Delta Shores*, June 6, 2007.

12 California Native Plant Society (CNPS), Electronic Inventory of Rare and Endangered Vascular Plants of California, Version 7-06C, <<http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>>, accessed March 3, 2007.

TABLE 5.4-2

**SPECIAL STATUS SPECIES POTENTIALLY OCCURRING WITHIN
THE DELTA SHORES PROJECT SITE**

Common Name	Scientific Name	Status Fed/CA/other	Habitat	Likelihood of Occurrence Within the Project Site
Plants				
northern California black walnut	<i>Juglans hindsii</i>	none/none/1B	Riparian woodland and forest. 0-440 m.	Low. Suitable habitat may be present for this species to occur.
Ahart's dwarf rush	<i>Juncus leiospermus</i> var. <i>ahartii</i>	none/none/1B.2	Occurs in mesic valley and foothill grasslands at elevations ranging from 30 – 100 meters; blooms March to May.	Low. Degraded grasslands provides marginally suitable habitat.
Invertebrates				
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T/None/None	Associated only with elderberry shrubs (<i>Sambucus</i> sp.), usually in or near riparian areas.	Low. Elderberry shrubs are present in the project site but no VELB or bore holes were observed.
Reptiles				
North western pond turtle	<i>Actinemys marmorata</i>	None/CSC/None	Streams, rivers, ponds, marshes and other aquatic habitats. Requires secure basking area where they can easily escape to water. Upland nesting sites can be as much as 300 feet from aquatic habitat, but are usually closer.	Unlikely. Although no suitable habitat for this species exists in the project site, adjacent Morrison Creek may provides suitable habitat for this species
Giant garter snake	<i>Thamnophis gigas</i>	T/CSC/None	Historically occurred in tule and cattail marshes on the Valley floor and Sacramento-San Joaquin Delta. Now uses well vegetated marshes, streams and agricultural ditches in low elevation areas.	Unlikely. Although no suitable aquatic habitat exists within the project boundaries, the adjacent Morrison Creek and bufferlands area provide habitat for this species.
Birds				
Burrowing owl	<i>Athene cunicularia</i>	None/CSC/BCC	Grasslands, open areas near human habitation; nests in old burrows of ground squirrels or other small mammals.	High. Fallow fields at the site provide potential foraging habitat for this species, and ground squirrel burrows along the levee and on the northwestern section of the eastern side may provide suitable nesting habitat. Burrowing owls have been observed at the site in 2002 and 2004.
Swainson's hawk	<i>Buteo swainsoni</i>	None/ST/BCC	Grasslands and cultivated lands with scattered trees; nests in large trees or open riparian forest.	Moderate. Fallow fields on the site could provide suitable foraging habitat for this species. Suitable nest trees are present adjacent to the site.
White-tailed kite	<i>Elanus leucurus</i>	None/None/CDFG fully protected	Forages in grasslands and croplands. Nests in large trees adjacent to foraging habitat.	Observed. Fallow fields on the site could provide suitable foraging habitat for this species. Suitable nest trees are present adjacent to the site. Species observed foraging over site.

TABLE 5.4-2

**SPECIAL STATUS SPECIES POTENTIALLY OCCURRING WITHIN
THE DELTA SHORES PROJECT SITE**

Common Name	Scientific Name	Status Fed/CA/other	Habitat	Likelihood of Occurrence Within the Project Site
Cooper's hawk	<i>Accipiter cooperii</i>	None/CSC/MBTA and BCC	(Nesting) woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Moderate. Project Site provides suitable foraging habitat; species not observed during the 2007 field survey.
Great egret	<i>Ardea alba</i>	None/none/MBTA	A colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, and wet meadows.	Present. Project Site provides potentially suitable foraging habitat; Known rookeries within 5 miles of the Project Site; species observed during May 2007 survey.
Great blue heron	<i>Ardea herodias</i>	none/none/MBTA	A colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, and wet meadows.	Moderate. Project Site provides potentially suitable foraging habitat; species observed during May 2007 survey.
Loggerhead shrike	<i>Lanius ludovicianus</i>	None/CSC/MBTA	Found in broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Moderate. Project Site provides suitable foraging habitat for this species and potentially suitable nesting habitat within riparian woodland adjacent to golf course.
Double-crested cormorant	<i>Phalacrocorax auritus</i>	None/CSC/MBTA	Found in interior wetlands, lakes, rivers and reservoirs; offshore islands and various coastal habitats. A colonial nester, may nest on extensive marsh or high in a tree.	Low. Though no suitable habitat exists within the project boundaries, the adjacent Bufferlands area provides habitat for this species.
Black-crowned night heron	<i>Nycticorax nycticorax</i>	None/none/S3	Freshwater and salt marshes, pond edges and along slow moving streams. Colonial nester in dense stands of trees and brush, often in seclusion, but sometimes remarkably near human activity.	Low. Though no suitable habitat exists within the project boundaries, the adjacent Bufferlands area provides habitat for this species.
Mammals				
American badger	<i>Taxidea taxus</i>	None/none/CSC	Occupies a diversity of habitats throughout the state; principal habitat requirements include sufficient prey base, friable soils, and relatively open, uncultivated ground.	Low. The lack of suitable habitat likely precludes the presence of this species within the Project Site; no evidence of large burrows found during May 2007 surveys.
Yuma myotis bat	<i>Myotis yumanensis</i>	None/CSC/none	Optimal habitats are open forest and woodlands with sources of water for feeding.	Low. The lack of suitable roosting habitat in the project site likely precludes the presence of this species.

TABLE 5.4-2

**SPECIAL STATUS SPECIES POTENTIALLY OCCURRING WITHIN
THE DELTA SHORES PROJECT SITE**

Common Name	Scientific Name	Status Fed/CA/other	Habitat	Likelihood of Occurrence Within the Project Site
Townsend's (Pacific) western big- eared bat	<i>Corynorhinus townsendii townsendii</i>	None/CSC/none	Well distributed throughout a variety of habitats (coniferous forests, oak woodlands, broad-leaf forests, grasslands, etc). Roosts in caves, buildings, tunnels, and other human structures (Williams 1986).	Low. The lack of suitable roosting habitat within the project site likely precludes the presence of this species.
Pallid bat	<i>Antrozous pallidus</i>	None/CSC/none	Daytime roosts in buildings and crevices; less often in caves, mines, and hollow trees. Nighttime roosts in buildings, caves, mines and cliff overhangs.	Low. The lack of suitable roosting habitat within the project site likely precludes the presence of this species.

Notes:

Status:

Federal

FE Federally listed as Endangered.

FT Federally listed as Threatened.

State

ST State-listed as Threatened.

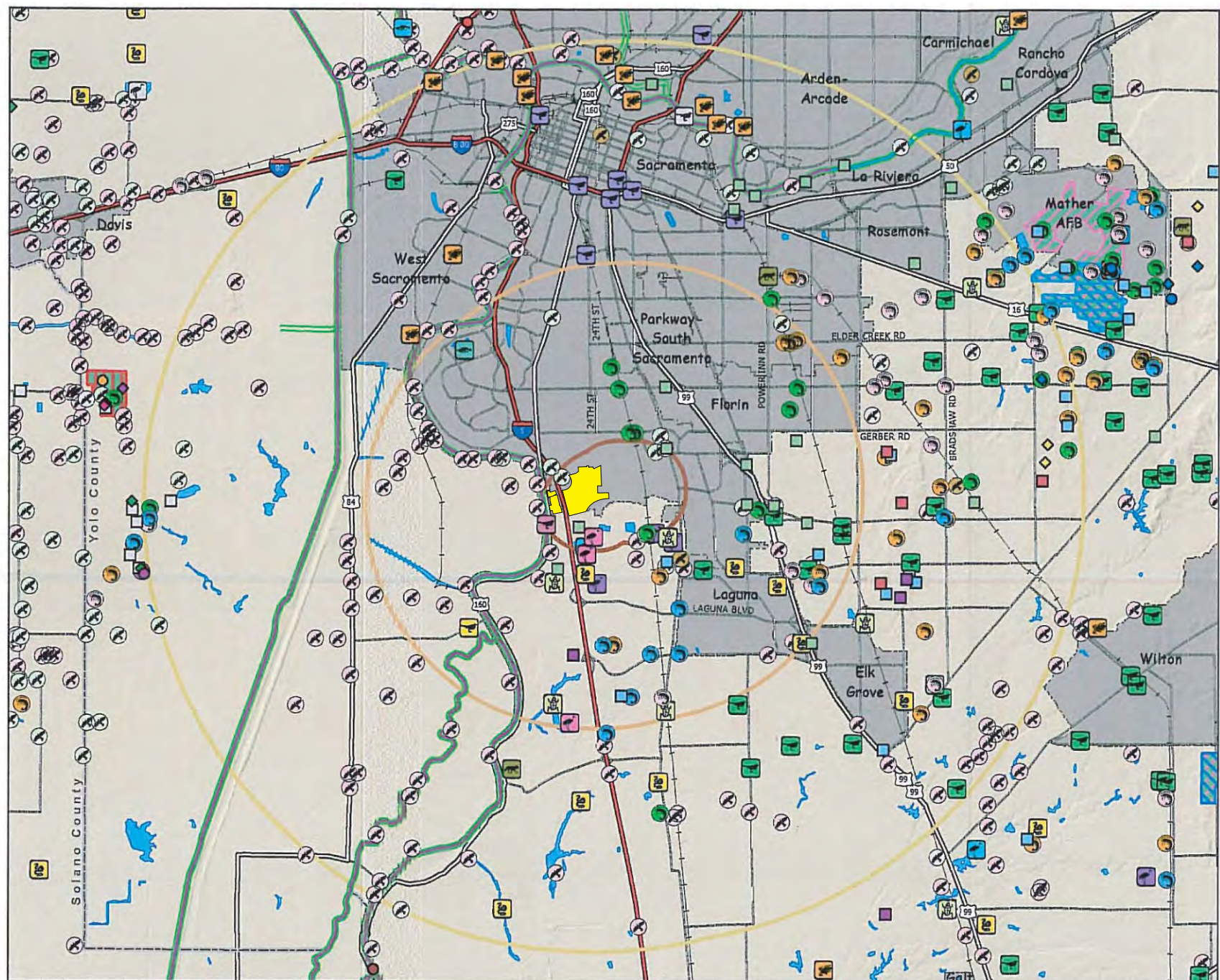
CSC California Department of Fish and Game designated "Species of Special Concern".

CNPS

1B Rare or Endangered in California and elsewhere.

2 Rare or Endangered in California, more common elsewhere.

Source: CDFG, Natural Diversity Database (CNDDDB), USFWS Online Species List Database <http://sacramento.fws.gov/es/spp_lists/auto_list_form.cfm>, and the CNPS Electronic Inventory 2007.

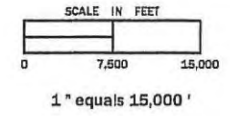


Map Features

- | | | | |
|----------------------------------|----------------|-------------------------------|-------------------------|
| Administrative Boundaries | Buffers | Transportation Network | Aquatic Features |
| City Boundary | 1 mile | Interstate | Water Bodies |
| County Boundary | 5 mile | State Highway | Rivers |
| | 10 mile | Roads | |
| | | Railroads | |

² CNDDDB Occurrences

- | | | |
|--------------------------------------|---|--|
| Plants | Invertebrates | Birds |
| Baker's Navarrelia | Ricksecker's Water Scavenger Beetle | Bank Swallow |
| Rose-mallow | Conservancy Fairy Shrimp | Yellow-headed Blackbird |
| San Joaquin Spearscale | Midvalley Fairy Shrimp | Western Yellow-billed Cuckoo |
| Northern California Black Walnut | Vernal Pool fairy Shrimp | Purple Martin |
| Ahart's Dwarf Rush | Vernal Pool Tadpole Shrimp | Tricolored Blackbird |
| Crampton's Tuctoria or Solano Grass | California Linderiella | Western Snowy Plover |
| Colusa Grass | valley Elderberry Longhorn Beetle | Double-crested Cormorant |
| Slender Orcutt Grass | Fish | Great Egret |
| Sacramento Orcutt Grass | Sacramento Splittail | Great Blue Heron |
| Heckard's Pepper-grass | Sacramento Perch | Black-crowned Night Heron |
| Dwarf Downingia | Reptiles / Amphibians | Burrowing Owl |
| Boggs Lake Hedge-hyssop | Western Spadefoot | White-tailed Kite |
| Alkali Milk-vetch | Northwestern Pond Turtle | Cooper's Hawk |
| Legenere | Giant Garter Snake | Swainson's Hawk |
| Sanford's Arrowhead | | Mammals |
| | | American Badger |
| Critical Habitat | ³ Vernal Pool Fairy Shrimp | ⁴ Steelhead |
| ³ Slender Orcutt Grass | ³ Vernal Pool Tadpole Shrimp | ⁵ Spring-run Chinook Salmon |
| ³ Sacramento Orcutt Grass | | |
| ³ Colusa Grass | | |



NOTES

¹Project Boundary: Approximation Based on Aerial Interpretation

²CDFG California Natural Diversity Database (CNDDDB), June 2007 Update (GIS Shapefile)

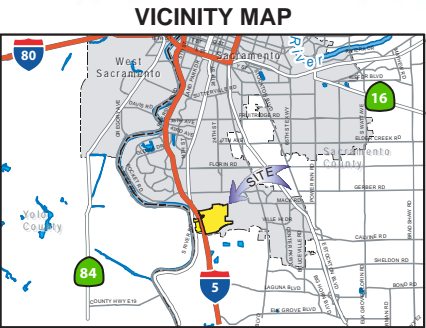
³USFWS Vernal Pool Species Final Critical Habitat, February 2006.

⁴NOAA/NMFS Steelhead Final Critical Habitat, June 2005.

⁵NOAA/NMFS Spring_Run Chinook Salmon Final Critical Habitat, June 2005.

Map Projection: California State Plane Zone II (NAD83) feet

Map Extents Located on USGS 7.5' Quadrangles: Davis, Sacramento East, Sacramento West, Carmichael, Buffalo Creek, Saxon, Clarksburg, Florin, Elk Grove, Sloughouse, Liberty Island, Courtland, Bruceville, Galt and Clay, CA



Source: ECORP Consulting, Inc., June 2007; PBS&J, November 2007.



Vernal Pool Tadpole Shrimp

Vernal pool tadpole shrimp (*Lepidurus packardii*) are federally listed as endangered. Vernal pool tadpole shrimp are small to moderate sized crustaceans adapted to survive in deeper, or longer lasting vernal pools and other seasonal wetlands. Like the fairy shrimp, they grow over a period of a few weeks, breed, and produce eggs that the females carry in an egg sac until they mature. As the vernal pool dries, the adults die, and the eggs (known as cysts when dry) become embedded in the mud at the bottom of the pool. These “resting” eggs are protected by thick outer coverings that resist cold, heat, and desiccation during the summer months. Vernal pool tadpole shrimp occur more sporadically in vernal pools than vernal pool fairy shrimp, but could occur in suitable habitat at the project site. There are known CNDDDB occurrences for this species within five miles of the project site.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*) is listed as a threatened species under the federal Endangered Species Act (ESA). In September 2006, the USFWS recommended to de-list the VELB based on the findings from the *VELB 5-Year Review: Summary and Evaluation*, prepared by the Sacramento Fish and Wildlife Office.¹³ Until such time the delisting becomes final, the VELB is still considered threatened and protected by the ESA and the project applicant would be required to comply with any requirements in accordance with the most current USFWS mitigation guidelines.

The VELB occurs throughout the year in riparian woodlands and other Central Valley habitats containing elderberry shrubs (*Sambucus* spp.), upon which the VELB are completely dependent for all stages of their life cycle. The females lay their eggs in crevices in the bark. After hatching, the larvae burrow into the stems of the shrub where they feed on the interior wood for the next one to two years until they form pupae, from which the adults emerge. The adults bore their way out of the stems, leaving a distinctive oval-shaped hole. As the larvae and adults are rarely seen, these borer holes are often the only evidence of this species' presence. After emergence from the stems, the adults remain in association with the elderberries, where they will feed on the elderberry foliage and eventually reproduce. All elderberry shrubs within the known range of the VELB that have one or more stems with diameters of one inch or greater at ground level, are considered potential habitat for this species.

ECORP Consulting conducted elderberry shrub surveys in April and September 2007. Since the project site has been under agricultural cultivation and therefore unsuitable as elderberry shrub habitat, an ECORP's biologist walked the perimeter of the site and along the intermittent drainages occurring on-site searching for the presence of elderberry shrubs and VELB.

13 U.S. Fish and Wildlife Service (USFWS), *Valley Elderberry Longhorn Beetle 5-Year Review: Summary and Evaluation*, Sacramento Fish and Wildlife Office, Sacramento, California, <www.fws.gov>, accessed October 17, 2006.

Three elderberry shrubs were identified within or adjacent to the western portion of the project site during the elderberry survey. However, no evidence of VELB (adult beetles or exit holes) was observed. Elderberry shrub data (height, stem count, etc) is summarized in Table 5.4-3.

Shrub #	Maximum Height	Number of Stems per Size				Maximum Stem diameter (in.)	Exit Holes (Yes/No)	Riparian (Yes/No)
		<1	1-3	<3 - <5	>5			
1	16	0	4	2	0	5	No	No
2	14	0	2	4	0	4	No	No
3	12	23	6	0	0	2.75	No	No

Sources: ECORP Consulting, Valley Elderberry Longhorn Beetle Survey Letter for the Delta Shores Project, April 30, 2007 and ECORP Consulting, Delta Shores – Valley Elderberry Longhorn Beetle Survey Report, September 12, 2007.

Western Pond Turtle

Western pond turtle (*Actinemys marmorata*) is a state species of special concern and occur in ponds and slow streams throughout California, and requires a reliable source of water. This species also requires upland areas adjacent to their aquatic habitat for nesting and aestivation. Although the project site supports drainage ditches and seasonal wetland swales, these features do not provide suitable habitat for the western pond turtle. The drainage ditches have flowing water during crop drainage but are dry for the remainder of the time. The closest occurrence of northwestern pond turtle is approximately one mile southeast of the project site.¹⁴

Giant Garter Snake

The giant garter snake (*Thamnophis gigas*) is listed as threatened under both state and federal endangered species acts. The giant garter snake is a highly aquatic species that historically ranged from Butte County, south through the Central Valley to Buena Vista and Tulare Lake in Tulare and Kern counties. Having disappeared from much of its former range due to habitat loss (particularly in the southern part of its range), the current stronghold for this species is in the American River Basin of Sacramento and Sutter counties, which provide some of the most important remaining habitat for the giant garter snake.^{15,16} Historically, giant garter snakes occurred in cattail and tule marshes, and open riparian woodlands on the valley floor.^{17,18} Although much of their historic habitat has been lost due to a variety of causes ranging from channelization of waterways, flood control projects, and the conversion of marshlands to agriculture, this species has adapted to occupy certain man-made waterways.^{19,20} Of particular value are the drainage systems associated with rice farming in

14 ECORP, *Special-Status Species Assessment for East Delta Shores*, June 6, 2007.

15 U.S. Fish and Wildlife Service, <http://sacramento.fws.gov/es/animal_spp_acct/giant_garter_snake.htm> 2002.

16 California Department of Fish and Game (CDFG), <www.dfg.ca.gov/hcpb/species/jsp/ssc_result.jsp?specy=reptiles&query=Thamnophis%20gigas>, 2002.

17 USFWS, <http://sacramento.fws.gov/es/animal_spp_acct/giant_garter_snake.htm>, 2002.

18 CDFG, <www.dfg.ca.gov/hcpb/species/jsp/ssc_result.jsp?specy=reptiles&query=Thamnophis%20gigas>, 2002.

19 USFWS, <http://sacramento.fws.gov/es/animal_spp_acct/giant_garter_snake.htm>, 2002.

Sacramento, Yolo, Sutter, and Colusa counties. Potential habitat for giant garter snakes typically include all or at least most of the following features: relatively deep, perennial water (or at least adequate water during the snake's active season [early-spring through mid-fall]); presence of abundant emergent vegetation such as cattails and bulrushes for escape cover and foraging habitat during the active season; grassy banks and openings in waterside vegetation for basking; and higher elevation uplands adjacent to their aquatic habitat for cover and refuge from flood waters during the snake's dormant season in the winter.^{21,22} Aquatic habitat must also support prey species such as fish and amphibians.

The closest CNDDDB occurrence of giant garter snake is approximately one mile south of the project site within Stone Lake and neighboring marsh habitat. Aquatic features present within the site include drainage ditches, seasonal wetlands, and a seasonal wetland swale. During the wetland delineation conducted by ECORP, the drainage ditches on-site were dry and did not show evidence of prolonged periods of inundation. The ditches periodically convey water during the growing season to support agricultural practices and likely convey runoff during the wet season. However, these periods of inundation do not appear sufficient prior to and during the snake's active season to support suitable aquatic prey base required by the species. Therefore, a majority of the site does not appear to provide suitable aquatic habitat for giant garter snake. However, Morrison Creek, approximately 500 feet south of the project site, is considered suitable habitat for the snake.²³ Due to the distance from Morrison Creek, giant garter snake habitat is unlikely to occur within the project site.

ECORP conducted a Giant Garter Snake Habitat Assessment within East Delta Shores and West Delta Shores. The report concludes that the irrigation ditches located within the project site do not appear to provide potential aquatic habitat, nor support an adequate prey base for the giant garter snake. Furthermore, the report concludes that the upland habitat appears to be limited, if present at all, due to historic and on-going agricultural practices. The report mentions that the nearest aquatic habitats appear to be Morrison Creek and an unnamed canal located just north of the site, east of I-5.²⁴

Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species under the California Endangered Species Act (CESA). This raptor is found primarily in open country, foraging in grasslands and agricultural fields, especially after disking or harvest. They use tall riparian trees (typically oaks or cottonwoods) for nesting, but will occasionally nest in large eucalyptus or other large ornamental trees if there is suitable foraging habitat nearby. The species has lost much of its

20 CDFG, <[www.dfg.ca.gov/hcpb/species/jsp/ssc_result.jsp?specy=reptiles&query=Thamnophis% 20gigas](http://www.dfg.ca.gov/hcpb/species/jsp/ssc_result.jsp?specy=reptiles&query=Thamnophis%20gigas)>, 2002.

21 USFWS, <http://sacramento.fws.gov/es/animal_spp_acct/giant_garter_snake.htm>, 2002.

22 CDFG, <[www.dfg.ca.gov/hcpb/species/jsp/ssc_result.jsp?specy=reptiles&query=Thamnophis% 20gigas](http://www.dfg.ca.gov/hcpb/species/jsp/ssc_result.jsp?specy=reptiles&query=Thamnophis%20gigas)>, 2002.

23 USFWS, *Section 7 Consultation for the Proposed Interstate 5-Cosumnes River Boulevard Interchange Project*, Sacramento County, California, 2005.

24 ECORP, *Delta Shores – Giant Garter Snake Habitat Assessment*, June 13, 2007.

former nesting habitat as a result of the significant reduction in riparian woodland and forest habitat throughout the state over the last 100 years, and is increasingly losing foraging habitat to urban development. Swainson's hawks can forage as far as 10 miles from the nest, but nests are generally more successful if suitable foraging habitat is present within an approximate 5-mile radius. Suitable foraging habitat is defined as annual grasslands, fallow fields, dry and irrigated pasture, and a variety of croplands including alfalfa, beet, tomato and other low growing row or field crops, rice (when not flooded), and cereal grain crops (including corn after harvest).²⁵ The greatest concentration of nesting records for Swainson's hawks within the region occurs along the Sacramento River. Four Swainson hawk nests are located along the Sacramento River west of the project site; three of them appear to be along the western bank of the river, and only one along the eastern bank. Swainson's hawks were observed flying over the project site during the May 2007 site visit. The agricultural fields in the project site provide approximately 765 acres of suitable foraging habitat for Swainson's hawks.

Burrowing Owl

Burrowing owls (*Athene cunicularia*) are CDFG species of special concern, federal species of concern and USFWS bird of conservation concern. Burrowing owls are year-long residents in generally flat, open dry grasslands, pastures, deserts, and shrub lands. They use communal ground squirrel and other small mammal burrow colonies for nesting and cover, as well as artificial structures, such as dry culverts in roadside embankments, levees, and berms. They prefer open, dry, nearly level grassland or prairie habitat and can exhibit high site fidelity, often reusing burrows year after year. Several ground squirrel holes, which may be utilized by burrowing owls, were observed within the drainage ditches surrounding the agricultural fields. There are two documented occurrences of burrowing owls within the northwest corner of the project site, but no burrowing owls were observed during any of the site visits.

White-Tailed Kite

The white-tailed kite (*Elanus leucurus*) is listed as a "fully protected" raptor under Section 3511 of the California Fish and Game Code. White-tailed kites feed on rodents, small reptiles, and large insects in fresh emergent wetlands, annual grasslands, pastures, and ruderal vegetation. They breed between February and October. Kites often roost, and occasionally nest communally, especially during the non-breeding season. Therefore, disturbance of a relatively small roost or nesting area could affect a large number of birds. The white-tailed kite can commonly be observed foraging in open grasslands throughout the region, but breeding sites are primarily located near riparian corridors along the Sacramento and American Rivers. A white-tailed kite was observed during the May 2007 site visit, suitable nesting habitat occurs along the Sacramento River and in the blue gum trees adjacent to the project site in the western portion of the site.

25 CDFG, 1994, *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California*.

Special-Status Bats

Special-status bat species with the potential to occur within the project site include the pallid bat (*Antrozous pallida*), Pacific Western big eared bat (*Corynorhinus townsendii townsendii*) and Yuma myotis bat (*Myotis yumanensis*). The pallid bat and the Pacific Western big eared bat are CDFG species of special concern. These species use hollow trees, caves, and rock crevices for roosting, but also use man-made structures such as mines, old buildings, and bridges if suitable structure and seclusion are available. Potential habitat for these species is present within the abandoned dairy building located in the western portion of the site. A total of four abandoned buildings are proposed for removal to accommodate the project.

Regulatory Context

Federal

Federal Endangered Species Act of 1973

Section 3 of the ESA defines an endangered species as any species or subspecies of fish, wildlife, or plants “in danger of extinction throughout all or a significant portion of its range.” A threatened species is defined as any species or subspecies “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” Designated endangered and threatened species, as listed through publication of a final rule in the Federal Register, are fully protected from a “take” without an incidental take permit administered by the USFWS under Section 10 of the ESA. Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (50 CFR 17.3). The term “harm” in the definition of “take” in the Act means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering (50 CFR 17.3). The term “harass” in the definition of “take” means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). Proposed endangered or threatened species are those for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Section 7 of the ESA requires that federal agencies ensure that their actions are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat. This obligation requires federal agencies to consult with the USFWS on any actions (issuing permits including Section 404 permits, issuing licenses, providing federal funding) that may affect listed species to ensure that reasonable and prudent measures will be undertaken to mitigate impacts on listed species. Consultation with USFWS can be either formal or informal depending on the likelihood of the action to affect listed species or critical habitat. Once a formal consultation is initiated, USFWS will issue a Biological Opinion (either a “jeopardy” or a “no jeopardy” opinion) indicating whether the proposed agency action will or will not jeopardize the continued existence of a listed species or result in the destruction or modification of its critical habitat. A permit cannot be issued for a project with a “jeopardy” opinion unless the project is redesigned to lessen impacts.

In the absence of any federal involvement, as in a privately-funded project on private land with no federal permit, only Section 10(a) of the ESA can empower the USFWS to authorize incidental take of a listed species provided a habitat conservation plan (HCP) is developed. To qualify for a formal Section 10(a) permit, strict conditions must be met including a lengthy procedure involving discussions with USFWS and local agencies, preparation of a HCP, and a detailed Section 10(a) permit application.

Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act (MBTA) makes it unlawful to “take” (kill, harm, harass, etc) any migratory bird listed in 50 CFR 10, including their nests, eggs, or products. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others. There are over 800 species listed in the MBTA including common species observed within the project site such as the American robin (*Turdus migratorius*), Brewer’s blackbird (*Euphagus cyanocephalus*), and northern mockingbird (*Mimus polyglottos*).

State

California Endangered Species Act

The CESA declares that deserving plant or animal species will be given protection by the state because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the state. CESA established that it is state policy to conserve, protect, restore, and enhance endangered species and their habitats. Under state law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. Listed species are generally given greater attention during the land use planning process by local governments, public agencies, and landowners than are species that have not been listed.

CESA authorizes that “Private entities may take plant or wildlife species listed as endangered or threatened under the federal ESA and CESA, pursuant to a federal incidental take permit issued in accordance with Section 10 of the federal ESA, if the CDFG certifies that the incidental take statement or incidental take permit is consistent with CESA (Fish & Game Code § 2080.1[a]).

California Environmental Quality Act—Treatment of Listed Plant and Animal Species

Although threatened and endangered species are protected by specific federal and state statutes, Section 15380(b) of the CEQA Guidelines provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after definitions in the ESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. Section 15380 independently defines “endangered” species of plants, fish or wildlife as those whose survival and reproduction in the wild are in immediate jeopardy and “rare” species as those who are in such low numbers that they could become endangered if their environment worsens. Therefore, a project will normally have a significant affect on the environment if it will substantially affect a rare or

endangered species or the habitat of the species. The significance of impacts to a species under CEQA must be based on analyzing actual rarity and threat of extinction despite legal status or lack thereof.

Fish and Game Code of California

The Fish and Game Code provides specific protection and listing for several types of biological resources. Section 2081(b) and (c) of the CESA allows CDFG to issue an incidental take permit for a state listed threatened and endangered species only if specific criteria are met. These criteria can be found in Title 14 CCR, Sections 783.4 (a), (b) and CDFG Code Section 2081(b). Additionally the CDFG Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code. Section 3503.5 states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act (MBTA) or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA. If a project is planned in area where a species or specified bird occurs, an applicant must design the project to avoid all take; the CDFG cannot provide take authorization under CESA.

Native Plant Protection Act of 1977

Native Plant Protection Act of 1977 and implementing regulations in Section 1900 et seq. of the Fish and Game Code designates rare and endangered plants, and provides specific protection measures for identified populations. It is administered by the CDFG.

Local

City of Sacramento 1988 General Plan

The City of Sacramento General Plan's conservation strategy focuses on habitat conservation, minimization of impacts on sensitive biological resources, and the preservation of plant and animal diversity as the most effective way to protect individual special status species. The City is currently in the process of updating its General Plan anticipated to be completed sometime in late 2008 or early 2009.

The following City of Sacramento General Plan goals and policies will guide the conservation and protection of biological resources in regards to the proposed project:

CONSERVATION AND OPEN SPACE ELEMENT

Overall Goal Achieve and maintain a balance among the conservation, development, and utilization of planned open space and natural resources.

The Sacramento region has become one of the fastest growing areas in the United States. A major reason for this fast growth is the City's livability. In order to maintain this livability, a balance will need to continue between development and environmental factors. These environmental factors include water quality and supply, flood control, recreational open space, agricultural lands in nearby unincorporated areas, mineral deposits and plant and wildlife preservation.

Preservation of Natural Resources**Goal A Implement the Master Plan for Park Facilities and Recreation Services.****Policies**

2. Continue to implement the Heritage Tree Program.
The City's Heritage Tree program assures that heritage trees appearing on any new development proposals will be retained according to the City Ordinance affecting such trees. It is important that this program continue.
3. Continue to assist the efforts of the County and the Sacramento Tree Foundation in identifying, acquiring, and creating appropriate locations for urban forests and greenbelt.
Such appropriate locations may include, if development of the buffer lands surrounding the SRCSD waste water treatment plant prove infeasible, open space lands subject to flood hazards, lands delineating urban and rural uses, and sites containing significant native plant communities.

Goal C Conserve and protect the planned open space areas along the American and Sacramento Rivers, floodways and un-developable floodplains to the extent feasible.**Policy**

1. Retain the habitat areas where known endangered wildlife exists to the extent feasible.
The elderberry bushes along the Sacramento River Parkway are the home and food for the threatened Valley Elderberry Longhorn (VEL) Beetle. The riparian woodland along the American River and agricultural drainage areas are breeding, roosting and cover areas for the following endangered species: Peregrine Falcon, Swainson's Hawk, Giant Garter Snake, Black Shouldered Kite, Ringtail, Burrowing Owl, Prairie Falcon, and the Western Yellow-Billed Cuckoo. Eliminating the natural flora in these areas would lower the chances for these species to exist; and in the case of the VEL Beetle, it would become extinct without the elderberry bush.

Goal E Establish development standards for water related open space lands throughout the City to enhance the visual amenities of these features.**Policies**

1. Explore ways to reverse degradation and pollution and enhance the natural beauty and wildlife habitats of creeks and drainage canals.
Many of the creeks have been degraded and polluted within the open space and channelized areas as urbanization occurred. Steps are being taken to reverse the degradation and to enhance the stream beds and adjacent floodplain areas.
2. Explore ways to preserve the undeveloped open space areas and wildlife habitats along Dry Creek, Arcade Creek, Fisherman's Lake, and the area south of Woodlake Park, Morrison Creek, Elder Creek, Laguna Creek, Beach Lake, and drainage canals.
The open space floodplain areas along the creeks and drainage canals offer habitat to migratory waterfowl and other wildlife, some being endangered species, and offer limited opportunities for passive recreation. The only alternative is to channelize the creek beds and turn the floodplain areas into impervious surfaces, thereby creating drainage impacts.
3. Design new floodways to be built in North Natomas and South Sacramento, to be aesthetically pleasing and offer limited passive recreation as well as wildlife sanctuaries.
Instead of becoming unusable and debris-ridden when they are not being used to store floodwater, the floodways that will need to be built in North Natomas and South Sacramento should have design amenities so that they may be used for open space recreation and wildlife sanctuary places.

City of Sacramento 2030 General Plan

The City anticipates adopting its new 2030 General Plan by the end of 2008. Therefore, applicable policies from the 2030 General Plan are included below.

BIOLOGICAL RESOURCES

Goal ER 2.1 Natural and Open Space Protection. Protect and enhance open space, natural areas, and significant wildlife and vegetation in the city as integral parts of a sustainable environment within a larger regional ecosystem.

Policies

- ER 2.1.1 **Resource Preservation.** The City shall encourage new development to preserve on-site natural elements that contribute to the community's native plant and wildlife species value and to its aesthetic character.
- ER 2.1.3 **Natural Lands Management.** The City shall promote the preservation and restoration of contiguous areas of natural habitat throughout the city and support their integration with existing and future regional preserves.
- ER 2.1.4 **Retain Habitat Areas.** The City shall retain plant and wildlife habitat areas where there are known sensitive resources (e.g., sensitive habitats, special-status, threatened, endangered, candidate species, and species of concern). Particular attention shall be focused on retaining habitat areas that are contiguous with other existing natural areas and/or wildlife movement corridors.
- ER 2.1.5 **Riparian Habitat Integrity.** The City shall preserve the ecological integrity of habitat areas, creek corridors, canals, and drainage ditches that support riparian resources by preserving native plants and, to the extent feasible, removing invasive, non-native plants. If not feasible, the mitigation of all adverse impacts on riparian habitat shall comply with State and Federal regulations.
- ER 2.1.6 **Wetland Protection.** The City shall preserve and protect wetland resources including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetlands, to the extent feasible. If not feasible, the mitigation of all adverse impacts on wetland resources shall be required in compliance with State and Federal regulations protecting wetland resources, and if applicable, threatened or endangered species.
- ER 2.1.7 **Annual Grasslands.** The City shall preserve and protect grasslands and vernal pools that provide habitat for rare and endangered species to the extent feasible. If not feasible, the mitigation of all adverse impacts on annual grasslands shall comply with State and Federal regulations protecting foraging habitat for those species known to utilize this habitat.
- ER 2.1.8 **Oak Woodlands.** The City shall preserve and protect oak woodlands, and/or significant stands of oak trees in the city that provide habitat for common native, and special-status wildlife species, to the extent feasible. If not feasible, the mitigation of all adverse impacts on oak woodlands shall comply with the standards of the Oak Woodlands Conservation Act.
- ER 2.1.9 **Wildlife Corridors.** The City shall preserve, protect, and avoid impacts to wildlife corridors. If corridors are adversely affected, damaged habitat shall be replaced with habitat of equivalent value.
- ER 2.1.10 **Habitat Assessments.** The City shall require that pre-construction surveys and/or habitat assessments for sensitive plant and wildlife species for any project requiring discretionary approval.
- ER 2.1.11 **Agency Coordination.** The City shall coordinate with State and Federal resource agencies (e.g., California Department of Fish and Game (CDFG), Corps, U.S. Fish and Wildlife Service (USFWS)) to protect areas containing rare or endangered species of plants and animals.
- ER 2.1.12 **Natomas Basin Habitat Conservation Plan.** The City shall continue to participate in and support the policies of the Natomas Basin Habitat Conservation Plan for the protection of biological resources in the Natomas Basin.

- ER 2.1.13 **Support Habitat Conservation Plan Efforts.** The City shall encourage and support other regional habitat conservation plans such as the South Sacramento Habitat Conservation Plan to conserve and manage habitat for special-status species.
- ER 2.1.14 **Public Education.** The City shall support educational programs for residents and visitors about the uniqueness and value of the natural resources, plants and wildlife in the region, and about how to manage development to preserve native wildlife populations.
- ER 2.1.15 **Community Involvement.** The City shall encourage community volunteerism and stewardship to help protect and rehabilitate the area's natural resources.

City of Sacramento Tree Preservation Ordinance

The City of Sacramento has adopted an ordinance to protect trees as a significant resource to the community. It is the City's policy to retain trees when possible regardless of their size. When circumstances will not allow for retention, permits are required to remove trees that are within City jurisdiction. Removal of, or construction around, trees that are protected by the tree ordinance are subject to permission and inspection by City arborists. The City of Sacramento Tree Service Division reviews project plans and works with City of Sacramento Public Works during the construction process to minimize impacts to street trees in the City. The Sacramento City Code includes the following provisions to protect City trees:

12.56.020 Definitions.

"City street tree" means and includes any tree growing on a public street right-of-way. City street trees are maintained by the city.

"Director" means the director of the department of parks and recreation or the director's designated representative.

"Maintenance easement private street tree" means and includes any tree growing within a maintenance easement. No parcel contains more than one maintenance easement private street tree per forty (40) feet of street frontage. If there is more than one tree in the maintenance easement per forty (40) feet of street frontage, only the one closest to the street is a maintenance easement private street tree, and the other(s) are private trees.

"Street tree" means and includes both city street trees and maintenance easement private trees (Prior code §45.01.002).

12.56.60 Protection of trees.

- (a) No person shall remove, trim, prune, cut or otherwise perform maintenance on any city street tree without first obtaining a permit from the director pursuant to Chapter 12.56.070. (Prior Code Section 45.01.006).
- (c) No person shall injure or destroy any city street tree by any means, including but not limited to the following:
1. Constructing a concrete, asphalt, brick or gravel sidewalk, or otherwise filling up the ground area around any tree so as to shut off air, light or water from its roots, unless ordered or authorized to do so by the city.
 2. Piling building material, equipment or other substance around any tree so as to injure the tree.
 3. Pouring any deleterious matter on or around any tree or on the surrounding ground, lawn or sidewalk.
 4. Posting any sign, poster, notice, or similar device on any tree, tree stake or guard, or by fastening any guy wire, cable, rope, nails, screws, or other device to any tree, tree stake or guard for any purpose other than supporting the tree.
 5. Causing any fire or burning near or around any tree.

6. Cutting roots with a diameter of two inches or greater for sidewalk repair or any other purpose; provided, however, that roots with a diameter of two inches or greater may be cut if authorized in advance by the director.

12.64.020 Definitions.

"Heritage tree" means:

- (1) Any tree of any species with a trunk circumference of one hundred (100) inches or more, which is of good quality in terms of health, vigor of growth, and conformity to generally, accepted horticultural standards of shape for its species.
- (2) Any native species of oak (*Quercus* spp.), California buckeye (*Aesculus californica*), and sycamore (*Platanus racemosa*), having a circumference of 36 inches or greater when a single trunk or cumulative circumference of 36 inches or greater when a multi-trunk tree.
- (3) Any tree thirty (36) inches in circumference or greater in a riparian zone. The riparian zone is measured from the center line of the water course to thirty (30) feet beyond the high water line.
- (4) Any tree, grove of trees or woodland trees designated by resolution of the city council to be of historic or environmental value or of significant community benefit. (Prior code Section 45.04.211)

12.64.040 Protection of heritage trees during construction activity.

During construction activity on any property upon which is located a heritage tree, the following rules shall apply. Unless the express written permission of the director is first obtained, no person shall:

- (a) Change the amount of irrigation provided to any heritage tree from that which was provided prior to the commencement of construction activity;
- (b) Trench, grade or pave into the drip line area of a heritage tree;
- (c) Change, by more than two (2) feet, grade elevations within thirty (30) feet of the drip line area of a heritage tree;
- (d) Park or operate any motor vehicle within the drip line area of any heritage tree;
- (e) Place or store any equipment or construction materials within the drip line area of any heritage tree;
- (f) Attach any signs, ropes, cables or any other items to any heritage tree;
- (g) Cut or trim any branch of a heritage tree for temporary construction purposes; and
- (h) Place or allow to flow into or over the drip line area of any heritage tree any oil, fuel, concrete mix or other deleterious substance. Where written permission of the director [City Neighborhood Services Director] is sought under this section, the director may grant such permission with such reasonable conditions as may be necessary to effectuate the intent and purpose of this chapter. (Prior code Section 45.04.216).

Airport/Meadowview Community Plan

The Airport/Meadowview Community Plan does not contain any goals or policies regarding biological resources.²⁶

South Area Community Plan

The City anticipates adopting the South Area Community Plan as part of the 2030 General Plan. There are no policies in the South Area Community Plan that apply to biological resources.

26 City of Sacramento, *Airport/Meadowview Community Plan*, April 1984.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

Analysis of potential project impacts on biological resources is based on a combination of technical reports,²⁷ background and historic record searches, and a reconnaissance level visit to the project site. Background research included use of the CDFG's CNDDDB, a species list from the USFWS Quad Species List website, a review of environmental documents prepared for this and related projects and a review of the California Native Plant Society's Electronic Inventory to determine what special-status plant or wildlife species are expected to occur in the vicinity of the project site.

The applicant's biological consultant, ECORP and PBS&J staff biologists conducted field visits, from November 2005 through May 2007, to determine the habitat types present on the project site. Using that information, the list of species that was derived from the background research was analyzed to determine which of those species were likely to occur on the project site. The CNDDDB query results, the USFWS Quad Species List, and the CNPS Rare and Endangered Plants List are included as Appendix G.

Standards of Significance

For the purposes of this EIR, impacts on biological resources are considered significant if the proposed project would:

- result in substantial degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of threatened or endangered plant or animal species;
- affect other species of special concern such as regulatory waters, vernal pools, or wetlands; or
- impact or conflict with a locally designated species such the Heritage Tree Ordinance (City Code 12.64.040).

Project-Specific Impacts and Mitigation Measures

5.4-1 The proposed project would result in the filling or adverse modification of jurisdictional wetlands, non-jurisdictional wetlands, and other "waters of the U.S."

Approximately 27.5 acres of potentially jurisdictional waters of the U.S have been mapped on-site by the applicant's biologist, ECORP.^{28,29} These wetlands include seasonal wetlands, seasonal swales and irrigation ditches. The U.S. Army Corps of Engineers verified the wetland delineation and concluded that 27.5 acres (0.41 on the west and 27.1 on the east) of waters of the United States, including wetlands, are present within the project site. A portion of the seasonal swale would be included as a part of designated open space, but the remaining wetlands would be impacted by

²⁷ A list of all the technical reports is included on page 1 of this section.

²⁸ ECORP, *Wetland Delineation for East Delta Shores*, September 5, 2006.

²⁹ ECORP, *Wetland Delineation for West Delta Shores*, June 13, 2006.

development. With the exception of the proposed preservation and/or restoration of the seasonal swale there are no other plans for maintaining and/or restoring other wetlands on-site.

The U.S. Army Corps of Engineers protects jurisdictional wetlands under the Clean Water Act. Federal policy calls for “no-net-loss” of jurisdictional wetlands. Therefore, because fill of jurisdictional wetlands, non-jurisdictional wetlands, and other waters of the United States would occur, this is considered a *significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 5.4-1(a) through (d) would require the preservation of wetlands on-site or at an approved mitigation bank, thereby compensating for the local loss of wetland habitat. Therefore, compliance with Mitigation Measures 5.4-1(a) through (d) would reduce the potential disturbance or loss of wetlands to a ***less-than-significant level***. The mitigation measures listed below can be satisfied by obtaining and complying with the terms of a Clean Water Act Section 404 Permit and Section 401 Water Certification.

- 5.4-1 a) *The project applicant shall, where feasible, preserve the maximum amount of existing wetlands and establish minimum 250-foot buffers around wetlands with listed species or 50-foot buffers around wetlands without listed species (species presence shall be verified as described in Impact 5.4-3 or assumed). Where wetlands are preserved, a Wetland Avoidance Plan (WAP) shall be prepared by a qualified biologist and submitted to the City for review and approval prior to the issuance of grading permits or any groundbreaking activity. The WAP shall include project designs that shall not cause significant changes to the pre-project hydrology, water quality or water quantity in any wetland that is to be retained on site, and shall include maps and provisions for buffers that will prevent construction equipment, debris and sediment from entering wetland features.*
- b) *Where avoidance of existing wetlands and drainages is not feasible, mitigation measures shall be implemented prior to the approval of grading permits or any groundbreaking activity within 250 feet of wetlands for the project-related loss of any existing wetlands, such that there is no net loss of wetland acreage or habitat value. The required distance can be reduced to 50 feet where determinate surveys have shown no special status species within wetland features.*
- c) *Prior to the issuance of grading permits by the City for any work within 250 feet of wetlands, the project applicant shall acquire all applicable wetland permits. The required distance can be reduced to 50 feet where determinate surveys have shown no special status species within wetland features. These permits may include, but would not be limited to, a Section 404 Wetlands Fill Permit from the U.S. Army Corp of Engineers, a Section 401 Water Quality Certification from the Regional Water Quality Control Board, and/or a Section 1601 Streambed Alteration Agreement from the California Department of Fish and Game.*

- d) *Wetland mitigation shall be developed as a part of the permitting process(es) as described above. Mitigation shall be provided prior to construction related impacts on the existing wetlands. The exact mitigation ratio is variable, based on the type and value of the wetlands affected by the project, but agency standards typically require a minimum of 1:1 for preservation and 1:1 for restoration. In addition, unless other mitigation is required by permitting processes that would provide similar or greater mitigation, a wetland mitigation and monitoring plan shall be developed that includes the following:*
- *Descriptions of the wetland types, and their expected functions and values;*
 - *Performance standards and monitoring protocol to ensure the success of the mitigation wetlands over a period of five to ten years;*
 - *Engineering plans showing the location, size and configuration of wetlands to be created or restored;*
 - *An implementation schedule showing that construction of mitigation areas shall commence prior to or concurrently with the initiation of construction; and*
 - *A description of legal protection measures for the preserved wetlands (i.e., dedication of fee title, conservation easement, and/or an endowment held by an approved conservation organization, government agency or mitigation bank).*

5.4-2 Implementation of the proposed project could result in the disturbance of vernal pool fairy shrimp, vernal pool tadpole shrimp, midvalley tadpole shrimp and California linderiella and their habitat.

Potential habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, midvalley tadpole shrimp and California linderiella may occur in seasonal wetlands found in the eastern part of the project site (East Delta Shores). A determinant level survey has been completed for the majority of wetlands within this area of the project site and determined that no vernal pool branchiopods occur within the wetlands surveyed. An additional wetland feature constituting potential habitat for listed species was discovered subsequent to original surveys conducted on East Delta Shores. One set of determinate surveys for listed species has been conducted for the additional pool, and no species were found; however, one more set of surveys will be required to make a determination that listed species do not occur in the additional feature. The project applicant shall either complete protocol level surveys for vernal pool branchiopods within this feature or assume presence of special status branchiopods. Since determinate surveys have not been completed on this portion of the project site, the seasonal wetland could provide suitable habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, midvalley tadpole shrimp and California linderiella. Therefore, implementation of the proposed project could result in *potentially significant impact* to vernal pool branchiopods and their habitat.

Mitigation Measure

Implementation of Mitigation Measure 5.4-2 would require that either protocol surveys be completed throughout the remainder of the project site or that project proponents assume presence in suitable habitat. In the event that federally-listed branchiopods are found and preservation and/or avoidance measure are not feasible then contribution to a USFWS-approved mitigation bank for the creation and preservation of habitat will be required. Therefore, compliance with Mitigation Measures 5.4-2 (a) through (b) would reduce the potential disturbance or take of vernal pool branchiopods to a **less-than-significant level**.

- 5.4-2 a) *The project applicant, in consultation with the USFWS, shall either (1) complete surveys for federally listed branchiopods, or (2) assume presence of federally-listed branchiopods in all affected pools where surveys have not been completed. Surveys shall be conducted by qualified biologists in accordance with the most recent USFWS guidelines or protocols to determine the time of year and survey methodology.*

The survey(s) and subsequent report(s) shall include at a minimum:

- *A complete list of species observed in the vernal pools and seasonal wetlands.*
- *A detailed description of methodology including dates of field visits, the names of survey personnel with resumes and a list of references cited and persons contacted.*
- *Survey results that include at a minimum:*
 - *A map showing the location(s) of any federally listed branchiopods species identified within the project site.*
 - *A detailed description of any identified federally listed branchiopods or populations including information on the density, distribution and habitat quality relative to typical occurrences of the species in question.*
 - *A discussion of the importance of the population(s) with consideration of both nearby populations and total species distribution.*
 - *An assessment of significance related to project impacts on any federally listed branchiopods populations identified on the project site.*

- b) *If surveys within the project site reveal no occurrences of federally listed branchiopods, no further mitigation would be required. However, if surveys determine that one or more federally listed branchiopod species occur within the project site, or if the project applicant, in consultation with the USFWS, assumes presence of federally-listed branchiopods in any affected pools, the following measures shall be required for those pools with species surveyed or assumed present. The selected measures may be part of the permitting process.*

- *For every acre of habitat impacted, at least one wetland creation credit shall be dedicated within a USFWS-approved mitigation bank, or, based on USFWS evaluation of site-specific conservation values, two acres of wetland habitat shall be created and monitored on the project site as approved by the USFWS.*
- *Wetland habitat and associated upland habitat used as on-site mitigation shall be protected from adverse impacts and managed in perpetuity or until the Corps, the applicant, and the USFWS agree on a process to exchange such areas for credits within a USFWS-approved mitigation banking system.*
- *If habitat is avoided (preserved) on site, a USFWS-approved biologist (monitor) shall inspect any construction-related activities at the proposed project site to ensure that no unnecessary take of listed species or destruction of their habitat occurs. The biologist shall have the authority to stop all activities that the biologist deems may result in such a take or destruction until appropriate corrective measures have been completed. The biologist shall also immediately report any unauthorized impacts to the City, the USFWS and the CDFG.*
- *Adequate fencing shall be placed and maintained around any avoided (preserved) wetland habitat to prevent impacts from vehicles.*
- *The project proponent shall conduct Worker Environmental Awareness Program (WEAP) training for construction crews (primarily crew and construction foreman) and City inspectors before construction activities begin. The WEAP shall include a brief review of the special status species and other sensitive resources that could occur in the proposed project site (including their life history and habitat requirements and what portions of the proposed project area they may be found in) and their legal status and protection. The program shall also cover all mitigation measures, environmental permits and proposed project plans, such as the SWPPP, BMPs, erosion control and sediment plan, and any other required plans. During WEAP training, construction personnel shall be informed of the importance of avoiding ground-disturbing activities outside of the designated work area. The designated biological monitor shall be responsible for ensuring that construction personnel adhere to the guidelines and restrictions. WEAP training sessions shall be conducted as needed for new personnel brought onto the job during the construction period.*
- *The project proponent shall ensure that activities that are inconsistent with the maintenance of the suitability of remaining wetland habitat and associated watershed on-site are prohibited.*

5.4-3 Development of the proposed project could result in the loss of foraging habitat for Swainson's hawk and other raptors.

The project site consists of approximately 765-acres of agricultural land that occurs within 10 miles of more than 34 known active Swainson's hawk nest sites (three of which are within one mile of the

project site). Based upon the CDFG's *Staff Report regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California*, the entire project site would be considered potential foraging habitat for the species. In addition to Swainson's hawk, white-tailed kite and burrowing owls are also likely to use the project site for foraging. Development of the project would result in the conversion of approximately 765 acres of potential Swainson's hawk, white-tailed kite, burrowing owl, and other raptor foraging habitat. The resulting loss of this habitat could force nesting Swainson's hawks to travel farther and expend more energy gathering prey to feed their offspring. As a result, nest mortality for any such pairs of Swainson's hawk could be likely to increase. Therefore, the loss of potential foraging habitat for Swainson's hawk, white-tailed kite, burrowing owl, or other raptors would be considered a *potentially significant impact*.

Mitigation Measure

Once implemented, this mitigation measure would reduce the above impact to a ***less-than-significant level*** through the preservation and management in perpetuity of suitable foraging habitat, contiguous with other areas of suitable foraging habitat, for Swainson's hawk, white-tailed kite, burrowing owl and other raptors.

5.4-3 *Prior to the issuance of grading permits, the project applicant shall preserve an equal amount of suitable raptor foraging habitat, at a 1:1 ratio, or a ratio acceptable to CDFG.³⁰ Suitable foraging habitat includes alfalfa or other low growing row crops. Preservation could occur through the purchase of conservation easements or fee title of lands with suitable foraging habitat. Land and easements shall be approved by the City in consultation with CDFG.*

5.4-4 Implementation of the proposed project could result in the disturbance of nesting habitat for birds protected by the MBTA, including raptors.

The trees in the project site could provide nesting habitat for a number of protected avian species including white-tailed kite, tree swallow, western blue bird, great egret, great blue heron, and other birds protected by the MBTA. The white-tailed kite is a California fully protected species, the tree swallow, western blue birds and other avian species are protected under the MBTA. As shown in Table 5.4-2, the white-tailed kite has a moderate likelihood of nesting in the project site.

Potential nesting trees are found within the project site. The eucalyptus trees within the northeast border of the project site could provide suitable habitat for protected common raptors, including Swainson's hawks. The Fremont cottonwoods, valley oaks and walnuts trees found throughout the project site also represent suitable nesting habitat for species protected under the MBTA. Construction activities associated with the proposed project could disturb nesting birds possibly resulting in nest abandonment, forced fledging and/or mortality. Some examples of project related activities that could cause nest abandonment or forced fledging are: demolition, large mobile construction equipment such as large bulldozers, and earth movers working directly under the nest trees for a significant amount of time and people trying to climb the nest tree.

30 CDFG, *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California*, November 8, 1994.

Nesting raptors and migratory nesting birds are protected under the MBTA and/or Fish and Game Code 3503, 3503.5, 3511 and 3513. Implementation of the proposed project could result in the disturbance to protected nesting avian species potentially leading to nest abandonment and mortality. This would be considered a *potentially significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 5.4-4(a) would require surveys for protected bird species to confirm the presence of active nests during the appropriate nesting season. If construction activities cannot be avoided during the nesting season, then implementation of Mitigation Measure 5.4-4(b) through (d) ensures that active nests are protected by instituting appropriate buffer zones and avoiding or minimizing loss or take of this species. Implementation of Mitigation Measures 5.4-4(a) through (d) would reduce the potential disturbance of nesting avian species to a ***less-than-significant level***.

- 5.4-4 a) *Between March 1 and August 1, the project applicant or developer(s) shall have a qualified biologist conduct nest surveys within 30 days prior to any demolition/ construction or ground disturbing activities that are within 500 feet of potential nest trees. A pre-construction survey shall be submitted to CDFG and the City of Sacramento that includes, at a minimum: (1) a description of the methodology including dates of field visits, the names of survey personnel with resumes, and a list of references cited and persons contacted; and (2) a map showing the location(s) of raptor and migratory bird nests observed on the project site. If no active nests of MBTA, CDFG or USFWS covered species are identified then no further mitigation is required.*
- b) *Should active nests of protected bird species be identified in the survey conducted in accordance with Mitigation Measure 5.4-4(a), the applicant, or developer(s), in consultation with the City of Sacramento and CDFG, shall delay construction in the vicinity of active nest sites during the breeding season (March 1 through August 1) while the nest is occupied with adults and/or young. A qualified biologist shall monitor any occupied nest to determine when the nest is no longer used. If the construction cannot be delayed, avoidance shall include the establishment of a non-disturbance buffer zone around the nest site. The size of the buffer zone shall be determined in consultation with the CDFG, but will be a minimum of 100 feet. The buffer zone shall be delineated with highly visible temporary construction fencing.*
- c) *No intensive disturbance (e.g., heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project-related activities that could cause nest abandonment or forced fledging, shall be initiated within the established buffer zone of an active nest between March 1 and August 1.*

- d) *If demolition/construction activities are unavoidable within the buffer zone, the project applicant shall retain a qualified biologist to monitor the nest site to determine if construction activities are disturbing the adult or young birds. If abandonment occurs the biologist shall consult with CDFG or USFWS for the appropriate salvage measures. This could include taking any nestlings to a local wildlife rehabilitation center.*

5.4-5 Implementation of the proposed project could result in the disturbance of nesting habitat for Swainson's hawks.

Trees existing in the riparian area of the Sacramento River could support nesting habitat for Swainson's hawks. While nesting activities were not observed during the March and May, 2007 project site visits, trees along the eastern bank of the Sacramento River could support nesting Swainson's hawks in the future. As noted in Table 5.4-2, suitable nest trees for Swainson's hawk are present along the river and northeast section of the project site. Construction activities associated with the proposed project within a ¼ mile (1,320 feet)³¹ of a Swainson's hawk nest could disturb nesting pairs of Swainson's hawk possibly resulting in nest abandonment, forced fledging and/or mortality.

The nesting season for Swainson's hawk begins in March and runs through September. Nesting Swainson's hawks are protected under the CESA, MBTA, Fish and Game Code 3503.5. The CNDDDB contains 34 recorded nests within five miles of the project site. The closest recorded occurrence of a Swainson's hawk nest is located approximately 1/4 mile (1,320 feet) from the project site and is located across the Sacramento River.

Numerous studies have sought to measure the sensitivity of raptors (birds of prey) to a variety of human activities and have shown that raptor pairs may react to human activities very differently. Some pairs nest successfully just dozens of yards from human activity, while others abandon nest sites in response to activities much farther away. This variability may be related to a number of factors, including visibility, duration, noise levels, extent of the area affected by the activity, prior experiences with humans, and tolerance of the individual nesting pair. Human activities that cause prolonged absences of breeding adults from their nests can jeopardize eggs or young. Depending on weather conditions, eggs may overheat or cool too much and fail to hatch. Unattended eggs and nestlings are subject to predation. Irregular feeding due to human disruption can harm young. Adults startled while incubating or brooding young may damage eggs or injure their young as they abruptly leave the nest. Older nestlings may be startled by loud or intrusive human activities and prematurely jump from the nest before they are able to fly. Some examples of project related activities that may cause nest abandonment or forced fledging are: large mobile construction equipment (i.e., bulldozers, earth movers, etc.) working directly under the nest for long periods of time, any equipment elevated to the level of the nest or higher, or a person attempting to climb the nest tree.

31 CDFG, *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California*, November 8, 1994.

Construction activities (tree removal or pruning, demolition and/or grading activities, use of heavy machinery) in close proximity (within the ¼ mile buffer) to nesting Swainson's hawk nest could result in the abandonment of active nests or the loss of active (occupied) nests and thus would be considered a *potentially significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 5.4-5(a) would require surveys for nesting Swainson's hawks to confirm the presence of active nests during the appropriate nesting season. If construction activities cannot be avoided during the nesting season, then implementation of Mitigation Measure 5.4-5(b) ensures that active nests are protected by instituting appropriate buffer zones and avoiding or minimizing disturbance to any nesting birds reducing the impact to a ***less-than-significant level***.

- 5.4-5 a) *Prior to any demolition/construction activities that occur between March 1 and September 15 the applicant or developer(s) shall have a qualified biologist conduct surveys for nesting migratory birds on the project site and within a quarter mile³² of demolition/construction activities. Surveys shall be conducted no more than 30 days prior to the start of any demolition or construction activities. If no active nests are identified on or within a quarter mile of construction activities, a letter report summarizing the survey results shall be sent to the City of Sacramento and no further mitigation is required.*
- b) *If active nests are found, measures that will avoid impacts to nesting migratory birds, including measures consistent with the CDFG Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California³³ shall be implemented as follows:*
- 1. Nest trees shall not be removed unless there is no feasible way of avoiding their removal.*
 - 2. If there is no feasible alternative to removing a nest tree, a Management Authorization (including conditions to offset the loss of the nest tree) shall be obtained from CDFG with the tree removal period (generally between October 1 and February 1) to be specified in the Management Authorization.*
 - 3. No intensive disturbances (e.g., heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project-related activities that could cause nest abandonment or forced fledging, shall be initiated within 1,320 feet (¼ mile) or less, as determined by CDFG, (buffer zone as defined in the CDFG Staff Report) of an active Swainson's hawk nest or 500 feet for other nesting migratory birds, between March 1 and*

32 Swainson's Hawk Technical Advisory Committee. *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*, May 31, 2000.

33 CDFG, *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo Swainsoni) in the Central Valley of California*, 1994.

September 15 or until August 15 if a Management Authorization or Biological Opinion is obtained from CDFG for the project. The buffer zone may be reduced in consultation with CDFG.

4. *If demolition/construction activities are unavoidable and are allowed by CDFG within the buffer zone, the project applicant or developer(s) shall retain a qualified biologist to monitor the nest to determine if abandonment occurs. If the nest is abandoned and the nestlings are still alive, the project proponent shall retain the services of a qualified biologist to reintroduce the nestling(s) (recovery and hacking). Prior to implementing, any hacking plan shall be reviewed and approved by the Environmental Services Division and Wildlife Management Division of the CDFG. The CDFG may allow reduction of the recommended buffers, if a qualified biologist is retained for on-site nest observations.*

5.4-6 Development of the proposed project could result in the loss of active burrowing owl nest burrows.

The CNDDDB has two recorded occurrences³⁴ of burrowing owls within the project site. Burrowing owls are a state and federal species of concern and; therefore, protected under Section 3503 of the CDFG Code and the MBTA. Ground squirrel burrows present in the irrigation ditches of the project site are considered potential nesting habitat for burrowing owls.³⁵ The loss of occupied (“[a] site should be assumed occupied if at least one burrowing owl has been observed occupying a burrow there within the last three years”)³⁶ burrowing owl nest or its occupants would be considered a *significant impact*.

Mitigation Measure

Once implemented, Mitigation Measure 5.4-6(a) through (c) below would reduce the above impact to a ***less-than-significant level*** through the avoidance of any active burrowing owl nests, the safe exclusion of burrowing owls from any burrows to be destroyed prior to construction of the proposed project, and the purchase of additional burrowing habitat.

- 5.4-6 a) *Prior to the issuance of grading permits, the project applicant shall retain a qualified biologist to conduct a pre-construction burrowing owl survey. If no suitable burrows are found, no further mitigation is required. If suitable burrows are found, but no owls are found, all burrows shall be hand-excavated and collapsed prior to project construction. If nesting owls are found, no disturbance shall be allowed within 160-feet of the active nest burrow between February 1 and August 31. Outside the nesting season, and/or upon confirmation by the qualified biologist, and in consultation with CDFG, that all young have fledged and left an active nest,*

34 CDFG, California Natural Diversity Data Base. Commercial Version dated June 30, 2007.

35 ECORP, *Special Status Species Assessment for East Delta Shores Sacramento County, California*, June 6, 2007.

36 California Burrowing Owl Consortium, *Burrowing Owl Survey Protocol and Mitigation Guidelines*, April 1993.

burrowing owls present in the burrow shall be excluded from the burrow(s) by a qualified biologist through a passive relocation as outlined in the California Burrowing Owl Consortium's April 1993 Burrowing Owl Survey Protocol and Mitigation Guidelines. Once the burrows have been cleared, they must be hand-excavated and collapsed prior to project construction.

- b) *To offset the loss of foraging and burrow habitat on the project site, a minimum of 6.5 acres of foraging habitat (calculated on a 100 m [approx. 300 ft.] foraging radius around the burrow) per pair or unpaired resident bird, shall be acquired and permanently protected. The protected lands shall be adjacent to occupied burrowing owl habitat and at a location acceptable to the CDFG. Protection of additional habitat acreage per pair or unpaired resident bird may be applicable in some instances. The project proponent shall provide funding for long-term management and monitoring of the protected lands. The monitoring plan shall include success criteria, remedial measures, and an annual report to the Department. This mitigation could overlap with mitigation requirements for Swainson's hawk foraging habitat as deemed appropriate by CDFG.*
- c) *If destruction of occupied burrows is unavoidable, the project applicant shall coordinate with CDFG to identify existing suitable burrows located on the protected lands site to be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1.*

5.4-7 Development of the proposed project could result in the loss of habitat or potential disturbance of valley elderberry longhorn beetle (VELB).

Development associated with the project site could result in the disturbance (from construction or operation) or removal of elderberry shrubs. Elderberry shrubs are the host plant for the VELB, a species federally listed as threatened. The USFWS considers all elderberry shrubs with stems equal or greater than one inch in diameter in the Central Valley potential habitat for the beetle. All of the elderberry shrubs observed within or adjacent to the project site are located west of I-5. Two of the shrubs are located within the project site along its boundary with the Bartley Cavanaugh Golf Course, adjacent to proposed low density residential development. The third elderberry shrub is actually located off-site but within 100 feet of the proposed access road into the residential area south of Cosumnes River Boulevard and a small landscape buffer area. The USFWS assumes that impacts to VELB would occur wherever there is disturbance within 100 feet of suitable habitat. Therefore, adverse effects on the shrubs with stems equal or greater to one inch in diameter would be considered "take" under the federal ESA.

Loss or disturbance of individual VELB or their habitat (elderberry shrubs), including ground disturbance (from construction or operation) within 100 feet of the dripline of an elderberry shrub with stems greater than or equal to one inch in diameter, or changes in the water regime, that would

result in additional water could result in an adverse impact on VELB. This would be considered a *potentially significant impact*.

In September 2006, the USFWS recommended to de-list the VELB based on the findings from the VELB 5-Year Review: Summary and Evaluation prepared by the Sacramento Fish and Wildlife Office. If the VELB is delisted prior to the initiation of construction activities, then the applicant would have to proceed consistent with any requirements that accompany the VELB delisting notice.

Mitigation Measure

Implementation of Mitigation Measure 5.4-7(a) would ensure the project is designed to avoid disturbance, or if disturbance within the buffer is unavoidable, Mitigation Measure 5.4-7(b) would require the development of a VELB Mitigation Plan that would include measures for the transplantation and replacement of VELB habitat as specified by the USFWS's VELB Mitigation Guidelines. In the event VELB is delisted prior to demolition/construction activities, then Mitigation Measure 5.4-7(c) would require the applicant to comply with any applicable requirements contained in the VELB delisting notice. These mitigation measures would reduce impacts on VELB to ***less-than-significant levels***.

- 5.4-7 a) *The proposed project shall be designed to avoid ground disturbance within 100 feet of the dripline of elderberry shrubs identified in the ECORP VELB Surveys as having stems greater than or equal to one inch in diameter. The 100 foot buffer could be adjusted in consultation with the USFWS. If avoidance is achieved, a letter report confirming avoidance shall be sent to the City of Sacramento and no further mitigation is required.*
- b) *If disturbance within 100 feet of the dripline of the elderberry shrub with stems greater than or equal to one inch in diameter is unavoidable, then the project applicant shall retain the services of a qualified biologist to develop a formal VELB mitigation plan in accordance with the most current USFWS mitigation guidelines for unavoidable take of VELB habitat pursuant to either Section 7 or Section 10(a) of the Federal Endangered Species Act. Prior to implementation by the applicant the mitigation plan shall be reviewed and approved by the USFWS.*
- c) *If the VELB is delisted by the USFWS prior to the initiation of any ground disturbing, demolition, or construction activities, the project applicant shall proceed consistent with any requirements that accompany the VELB delisting notice.*

If the USFWS determines that the shrubs do not provide habitat for VELB mitigation may not be required. Written verification from USFWS determining that mitigation for VELB will not be required shall be submitted to the City in order to exempt activities from further mitigation.

5.4-8 Development of the proposed project would include removal of trees that could be protected by the City of Sacramento Tree Preservation Ordinance.

Trees and shrubs on the project site would most likely be removed in order to accommodate the proposed development. ECORP conducted an Arborist Survey for the project site and a total of 220 trees were inventoried. In the western portion of the project site a total of 203 trees were inventoried. These included (aggregate measurements): 8 Fremont cottonwood (*Populus fremontii*), (dbh – 322 inches), 69 walnut (*Juglans* sp.) (dbh – 1611.5 inches), 93 Valley oak (*Quercus lobata*) (dbh – 2048.5 inches), 1 alder (*Alnus* sp.) (dbh – 19.5 inches) and 1 cherry (*Prunus* sp.) (dbh - 44 inches) fitting size requirements for heritage status.³⁷ In the eastern portion of the site 17 trees were inventoried, these included 4 Fremont cottonwoods fitting size requirements for heritage status.³⁸ Several heritage trees within the project site may be impacted or may require removal as a result of the proposed project. The City Arborist specifically identified trees 173, 186, 109, 110 and 112, located along the west edge of the project site as being in an area that could be impacted by construction activities. In addition, the City Arborist determined specific sizes for construction exclusion zones that would adequately protect these trees if they are able to be retained.

The City of Sacramento protects trees through the General Plan and the Tree Preservation Ordinance. City policy protects street trees and heritage trees, requiring protection during construction activity and permits/mitigation for removal. However, because heritage trees may be impacted by construction activities, this is considered a *significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 5.4-8(a) and (b) would require the protection of heritage trees that may be impacted by nearby construction activities. Mitigation Measure 5.4-8(c) would require permitting and additional mitigation to offset the loss of heritage trees that cannot be protected and will require removal. Therefore, compliance with Mitigation Measures 5.4-8(a) through (c) would reduce the potential impacts to locally designated heritage trees to a ***less-than-significant level***.

- 5.4-8 a) *Prior to issuance of any grading permits or any groundbreaking activity, whichever comes first, the applicant shall submit all grading and trenching plans to the Urban Forest Services' (UFS) City Arborist for review to ensure protection of Heritage trees located on site. Along with this plan, a supplemental survey of trees that may be impacted by construction shall be conducted and a report shall be submitted. This survey report shall include the dbh of all potentially impacted trees, which shall be verified by the City Arborist. The City Arborist will provide written verification and additional protection measures not available at this time to the City's Development Services Department prior to issuance of the grading permit.*
- b) *Heritage trees identified by the City Arborist, both on- and off-site, are recommended for preservation to the extent feasible without substantially altering the project site plan. If trees should require removal, the applicant/developer shall obtain*

37 ECORP, *Arborist Survey Report for West Delta Shores*, Sacramento County, California, June 12, 2007.

38 ECORP, *Arborist Survey Report for East Delta Shores*, Sacramento County, California, June 15, 2006.

authorization through a tree removal permit from the City Urban Forest Services. The project applicant/developer shall coordinate with the City of Sacramento Urban Forest Services Division to identify any trees able to be preserved. If trees are identified for preservation, the applicant/developer shall coordinate with the Urban Forest Services Division in preparation of a preservation plan for any and all trees identified for preservation. The preservation plan shall include, but not be limited to the following measures 5.4-8(b)(i) thru 5.4-8(b)(xi) to prevent impacts to the trees during construction of the proposed project:

- i. A 6' high cyclone fence shall be installed around each tree at a distance determined adequate by the City Arborist to protect trees from damage. This fencing will define the construction exclusion zone (CEZ) and no vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the CEZ of protected trees. A laminated sign indicating such shall be attached to fencing surrounding trees on-site. Fencing shall be shown on all construction and preservation plans and shall be installed prior to any construction activities. The appropriate CEZ distances for trees 173, 186, 109, 110 and 112 were previously determined by the City Arborist. Tree 173 shall require a 20.5' CEZ, tree 186 shall require a 17.5' CEZ, tree 109 shall require a 16.0' CEZ, tree 110 shall require a 19.0' CEZ and tree 112 shall require a 23.5' CEZ, if they are able to be preserved.
- ii. Prior to any pruning of heritage trees, the applicant or contractor shall obtain a heritage tree pruning permit from UFS (808-6345). Any required pruning shall be performed by an International Society of Arboriculture (ISA) certified arborist. The contractor shall contact the City Arborist for a root inspection(s) for trenching activities within the dripline(s) of trees to be saved.
- iii. If during excavation for the project, tree roots greater than two inches in diameter are encountered, work shall stop immediately until the City Arborist can perform an on site inspection. All roots shall be cut clean and the tree affected may require supplemental irrigation/fertilization and pruning as a result of the root cutting. The contractor will be responsible for any costs incurred. Depending upon the amount of roots encountered and the time of year, wet burlap may be required along the sides of the trench.
- iv. The contractor shall be held liable for any damage to existing trees, i.e. trunk wounds, broken limbs, pouring of any deleterious materials, or concrete washout under the dripline of the trees. Damages will be assessed using the "Guide to Plant Appraisal" eighth edition, published by the International Society of Arboriculture. An appraisal report shall be submitted for review by the City Arborist.
- v. Drainage patterns on the site shall not be modified so that water collects or stands within 8 feet of the trunk of any Heritage tree that is to be preserved.

- vi. *No lawn irrigation system shall be installed within 8 feet of the trunk of any Heritage tree that is to be preserved unless otherwise approved by Urban Forest Services.*
- vii. *No planting of landscaping within 6 feet of the trunk of any Heritage tree that is to be preserved unless otherwise approved by Urban Forest Services.*
- viii. *No trenching activity within 8 feet of the trunk of any Heritage tree that is to be preserved unless otherwise approved by Urban Forest Services.*
- ix. *No grading activity within 8 feet of the trunk of any Heritage tree that is to be preserved unless otherwise approved by Urban Forest Services. In the absence of an approved grading plan, the applicant/developer shall agree to mitigate for the loss of any Heritage tree that the City Arborist determines has been irreparably damaged by grading or other construction activity.*
- x. *No impervious surfaces shall be allowed within 8 feet of the trunk of any Heritage tree that is to be preserved unless otherwise approved by Urban Forest Services.*
- xi. *City Ordinances 12.56.060 (Protection of trees), 12.64.040 (Protection of Heritage trees during construction activities), and 12.64.050 (Maintenance responsibility – Permits for activities affecting Heritage trees) must be followed at all phases of construction.*

Tree protection methods noted above shall be identified on all construction plans for the project.

- c) *If Heritage Trees 173, 186, 109, 110 and 112, or any other heritage trees are unable to be preserved, prior to removal of these trees, the project applicant/developer shall coordinate with City of Sacramento Urban Forest Services Division to obtain the necessary permits for removal of the trees in accordance with the Heritage Tree Ordinance (City Code 12.64). All trees that fall under this category shall have a supplemental survey report prepared, as specified in Mitigation Measure 5.4-8 (a). All heritage trees removed shall be mitigated. Mitigation for removed trees can be carried out on site through the planting and care of young trees as specified by the City Arborist, or through the payment of in lieu fees to the City of Sacramento Urban Forest Services Division at the currently accepted rate. If in lieu fees are paid, verification of payment shall be provided to the Development Services Department. These fees would be used to provide planting and care of replacement trees. If the applicant can provide on-site mitigation, planting will be subject to the following City of Sacramento Urban Forest Services conditions:*
 - *Preparation of a tree mitigation planting plan prepared for review and approval by Urban Forest Services which shall include the following minimum elements:*
 - 1) *Species, size, and locations of all replacement plantings (the plan shall provide adequate planter and canopy space for trees to grow to maturity).*

- 2) *Method of irrigation.*
 - 3) *A tree planting detail.*
 - 4) *Planting, irrigation, and maintenance schedules.*
 - 5) *Identification of the maintenance entity and a written agreement with that entity to provide care and irrigation of the trees.*
- *Inspection of nursery stock (prior to planting) by Urban Forest Services.*
 - *Post-planting inspection by Urban Forest Services.*

5.4-9 Construction of the proposed project could adversely affect special-status bats.

Special-status bat species with the potential to occur within the project site include the pallid bat (CDFG species of special concern), Yuma myotis (CDFG species of special concern) and Pacific western Townsend's big-eared bat (CDFG species of special concern). These species use hollow trees, caves, and rock crevices for roosting, but also use man-made structures such as mines, old buildings, warehouses and bridges if suitable structure and seclusion are available. Potential habitat for these species is present within the riparian area adjacent to the project site, and the vacant dairy buildings slated to be removed to accommodate the project. Bats have been observed foraging over the agricultural fields, yet a positive identification of specific bats was not possible during the site visits. The disturbance of roosting sites for these species would be considered a *potentially significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 5.4-9(a) would require surveys for bats and to confirm the presence of any bats during the appropriate maternity season. If construction activities cannot be avoided during the maternity season, then implementation of Mitigation Measure 5.4-9(b) ensures that active colonies are protected by instituting appropriate buffer zones and avoiding or minimizing loss or take of these species. Implementation of the following mitigation measures would reduce this impact to a ***less-than-significant level***.

- 5.4-9 a) *Prior to demolition and tree removal activities, the project applicant or developer(s) shall retain a qualified biologist to conduct a focused survey for bats and potential roosting sites within the project site. If no roosting sites or bats are found within the project site, a letter report confirming absence shall be sent to the City of Sacramento and no further mitigation is required.*
- b) *If bats are found roosting at the site outside of nursery season (May 1st through October 1st), then they shall be evicted as described under (c) below. If bats are found roosting during the nursery or maternity season, then they shall be monitored to determine if the roost site is a maternal roost. This could occur by either visual inspection of the roost bat pups, if possible, or monitoring the roost after the adults leave for the night to listen for bat pups. If the roost is determined to not be a*

maternal roost, then the bats shall be evicted as described under (c). Because bat pups cannot leave the roost until they are mature enough, eviction of a maternal roost cannot occur during the nursery season. A 250-foot (or as determined in consultation with CDFG) buffer zone shall be established around the roosting site within which no construction shall occur.

- c) *Eviction of bats shall, as specified above, be conducted using bat exclusion techniques, developed by Bat Conservation International (BCI) and in consultation with CDFG, that allow the bats to exit the roosting site but prevent re-entry to the site. This would include but not be limited to the installation of one way exclusion devices. The devices shall remain in place for seven days and then the exclusion points and any other potential entrances shall be sealed. This work shall be completed by a Bat Conservation International recommended exclusion professional.*

5.4-10 Development of the proposed project would not result in the loss of individual giant garter snakes and their upland habitat.

The giant garter snake is listed as threatened under the federal ESA, and the loss of individuals or their habitat is prohibited. ECORP conducted a giant garter snake habitat assessment within the project site and found that no aquatic habitat for the giant garter snake occurs within those areas. Morrison Creek, which lies approximately 500 feet from the southeastern portion of the site, represents aquatic habitat for this species. The USFWS considers any upland habitat within 200 feet of suitable aquatic habitat to be potential giant garter snake habitat. No project construction would occur within 200 feet of Morrison Creek; therefore, **no impact** would occur and no mitigation is required.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

Cumulative impacts on biological resources are analyzed assuming buildout of the City's General Plan and the SACOG assumptions for regional buildout in the Sacramento Valley.

5.4-11 The proposed project, in combination with buildout of the City's General Plan and regional buildout assumed in the Sacramento Valley, could result in a regional loss of state and/or federally protected wetlands and wetland species.

The historic and ongoing loss of wetlands on a regional scale occurs as natural habitats are converted to urban and agricultural development, and watercourses are altered for flood control and water supply purposes. The loss of wetland resources on a regional scale is considered a significant impact. Because the project may result in the loss of some wetlands on-site the project's contribution to the loss of wetlands would be considerable due to the declining acreage of wetlands within the

larger region as well as the state. Therefore the proposed project's impact is *cumulatively significant*.

Mitigation Measure

Compliance with Mitigation Measure 5.4-1 would help to reduce the severity of the loss of wetlands at the project level, through preservation of wetlands at offsite locations, and would therefore be considered *cumulatively less than significant*.

5.4-11 *Implement Mitigation Measure 5.4-1.*

5.4-12 The proposed project, in combination with buildout of the City's General Plan and regional buildout assumed in the Sacramento Valley, could result in a regional loss of Swainson's hawk foraging habitat and other protected raptors.

As development in the City of Sacramento and the Sacramento Valley continues, foraging habitat for Swainson's hawk and other raptors is lost through conversion to urban development. Although these species may be able to survive these changes in their environment by moving to new areas, the availability and accessibility of new foraging habitats in the region would dwindle with continued conversion of natural habitat to human use, and those remaining natural areas would not be able to support additional plant or animal populations above their current carrying capacities. The conversion of foraging habitat for Swainson's hawk and other raptors to urban uses on a regional level would therefore result in a *cumulatively significant impact* to those species.

Mitigation Measure

Construction of the proposed project would contribute to the regional loss of raptor foraging habitat through the incremental conversion of that habitat to human use. However, Mitigation Measure 5.4-3 would help to reduce the severity of the loss of foraging habitat at the project level, through preservation of foraging habitat on site, and/or at offsite locations, and would therefore be considered *cumulatively less than significant*.

5.4-12 *Implement Mitigation Measure 5.4-3.*

5.4-13 The proposed project, in combination with other construction in the City and region, could result in the regional loss and/or disturbance of protected nesting avian species, including Swainson's hawks and other protected raptors.

As discussed above, construction activities carried out during the nesting season could disrupt protected nesting avian species including Swainson's hawks. The disruption associated with project construction would be short-term; however, combined with other construction projects taking place in the City as well as the region could contribute to a greater disturbance to the species. Because the project site does not contain many mature trees where raptors would nest and considering that a majority of the more mature trees are located in the western portion of the site would remain it is

anticipated that the project's contribution to this short-term impact would not be considerable. Therefore, the cumulative impact would be ***less than significant***.

Mitigation Measure

None required.

5.4-14 The proposed project, in combination with buildout of the City's General Plan, could result in the regional loss and/or disturbance of burrowing owls and their habitat.

Implementation of the proposed project would require grading which would permanently disturb recorded burrowing owl burrows in the northwestern section of the project site. Development of the project, in conjunction with other projects in the City could disturb suitable habitat for burrowing owl limiting the remaining habitat available for these species. The project's contribution would be considerable because the species was observed in an active colony. Therefore, the loss of burrowing owls and their habitat is considered a *cumulative significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 5.4-5 would require the avoidance of active burrows during the nesting season. It would require the purchase of burrowing and foraging habitat for burrowing owls and it would allow for the passive removal of burrowing owls after all nestlings have fledged. Therefore, compliance with this mitigation measure would reduce the cumulative impact to ***less than significant***.

5.4-14 *Implement Mitigation Measure 5.4-5.*

5.4-15 The proposed project, in combination with buildout of the City's General Plan and regional buildout assumed in the Sacramento Valley, could result in the regional loss and/or disturbance of VELB and its habitat.

It is anticipated that development of the proposed project could result in the potential disturbance of up to three elderberry shrubs, which provide habitat for the VELB. Although no VELB were identified as being present within the shrubs once project construction is ready to commence VELB may have occupied the shrubs. Due to the limited number of shrubs that could potentially be affected by the project the project's contribution may not be considerable. However, because the habitat is declining and the loss of VELB and its habitat on a regional scale is considered a significant impact the project's contribution to this loss would be considerable. Therefore, this is considered a *potentially significant cumulative impact*.

Mitigation Measure

Compliance with this mitigation measure would reduce the cumulative impact to ***less than significant***.

5.4-15 *Implement Mitigation Measure 5.4-6(a) through (d).*

5.4-16 The proposed project, in combination with buildout of the City's General Plan, could result in the regional loss and/or disturbance of protected bats and their habitat.

Implementation of the proposed project would most likely require the removal of trees and the demolition of existing structures within the project site in order to accommodate the proposed development. Development of the project, as well as development of other projects in the City could disturb suitable habitat for protected bats limiting the remaining habitat available for these species. The loss of protected bats and their habitat on a regional scale is considered a significant impact. Because there is a potential for bats to be present on the project site in the vacant buildings slated for removal the project's contribution would be considerable. Because the project could impact special-status bats this is considered a *potentially significant cumulative impact*.

Mitigation Measure

Compliance with Mitigation Measure 5.4-15 would reduce the cumulative impact to ***less than significant***.

5.4-16 *Implement Mitigation Measure 5.4-8.*

5.5 HYDROLOGY AND WATER QUALITY

5.5 HYDROLOGY AND WATER QUALITY

INTRODUCTION

This section addresses potential impacts of the proposed project on local and regional hydrology, water quality, and storm drainage. The hydrology analysis addresses the evaluation of surface water and groundwater, including water quality and water supply. The storm drainage discussion describes existing drainage within and surrounding the proposed project site. Flooding is also addressed. Applicable federal, state, and local regulations governing these topics are also included in this section.

Two comment letters were received in response to the NOP (see Appendix B). The Delta Protection Commission stated that the proposed project would be located in the Secondary Zone of the Legal Delta. The Commission expressed concerns that if the proposed project were to encroach on levees in the Secondary Zone, that could, in turn, potentially cause impacts on the Primary Zone of the Legal Delta. Potential effects on levees along Morrison Creek are evaluated in this section. The Department of Water Resources comments indicated that the project may be an encroachment on the State Adopted Plan of Flood Control, and that an encroachment permit will be required from the Reclamation Board prior to initiating any activities, if the project encroaches on an adopted flood control plan.

The Initial Study/Environmental Checklist prepared for the project determined that the proposed project would not induce changes in currents, or the course or direction of water movements (see Appendix A). Therefore, these issues will not be discussed further in this EIR.

Impacts associated with water supply and wastewater are evaluated in Section 5.8, Public Utilities. A discussion of the existing and proposed storm drainage system capacity is discussed in this section.

Information reviewed to prepare this section included various technical documents, information from the City of Sacramento staff, information from the project applicant's stormwater and utility infrastructure engineers, and regulatory agency information from various websites which are cited in the footnotes. Consultation with the County of Sacramento staff also occurred. The primary sources of information referenced for this section includes the *Delta Shores Development, Sacramento, California, Preliminary Drainage Study*, Civil Engineering Solutions, March 18, 2007; Geotechnical Engineering Report, Delta Shores, Wallace-Kuhl and Associates, Inc., July 31, 2006; the California Regional Water Quality Control Board, Central Valley Region, *The Water Quality Control Plan (Basin Plan)*, Fourth Edition – 1998, revised 2004 and the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions (Design Manual)*, May 18, 2007.

The Delta Shores Development Preliminary Drainage Study is available for review during normal business hours at the City's Development Services Department, 300 Richards Boulevard, 3rd Floor, Sacramento, California.

ENVIRONMENTAL SETTING

The proposed project site is located in the southern part of the city of Sacramento, east of the Sacramento River and bounded by Morrison Creek on the south. The proposed project is bisected from north to south by Interstate 5 (I-5), and the future Cosumnes River Boulevard bisects the project site in an east-west direction, to the proposed I-5 interchange. Morrison Creek is located to the east; the Sacramento River, Freeport Boulevard and the Town of Freeport are located to the west; Stone Lake (in the SRCSD bufferlands), Beach Lake, and the Bartley Cavanaugh Golf Course are located to the south. Developed areas are located to the north/northeast, and to the south/southeast. The site is within the Morrison Creek subshed of the Sacramento River Basin.

Regional Hydrology, Water Quality, and Flooding

Surface Water

The Morrison Creek watershed is located within the Sacramento River Basin, which covers approximately 26,500 square miles and is bounded by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade and Trinity ranges to the north and the Sacramento-San Joaquin Delta to the south. The Sacramento River is the primary river in the Basin and joins the San Joaquin River 40 miles south of the City of Sacramento, before flowing to the San Francisco Bay. Flow in the Sacramento River varies substantially and is directly correlated to variations in precipitation. Highest flows in the Sacramento River occur in winter and spring; lowest flows occur during the summer and fall. The Sacramento River beginning at the "I" Street Bridge, falls within the legal description of the Sacramento-San Joaquin Delta (Delta).¹

In the past, significant winter storms have caused Sacramento area rivers and creeks to overtop their banks and flood the City and surrounding areas. As a result, an extensive system of man-made levees for flood control purposes has been constructed in the Sacramento Valley and adjacent to the proposed project area and along the banks of the Sacramento River and Morrison Creek.

Flooding

All surface water originating in or passing through the region discharges to the ocean via the Sacramento and San Joaquin rivers, which join at the easternmost end of San Francisco Bay. High water levels along the Sacramento and American rivers are a common occurrence in the winter and early spring months due to increased flow from storm runoff and snowmelt. An extensive system of dams, levees, overflow weirs, drainage pumping plants, and flood control bypass channels strategically located on the Sacramento and American rivers has been established to protect the area from flooding. The amount of water flowing through the levee system can be controlled by Folsom Dam on the American River and the reserve overflow area of the Yolo Bypass on the Sacramento River. However, flood zones in the city are still extensive and several areas of the city are still subject to flooding by the overtopping of rivers and creeks and levee failures. Nuisance flooding occurs in isolated areas where urban drainage systems cannot accommodate large volumes of water during severe rainstorms.

1 Clean Water Act Section 1220.

The relative timing of these flows can accentuate the flood risk, because high water levels in a primary stream can result in a "backwater" effect which reduces the capacity of the tributary or incoming stream. This is true both externally (i.e., receiving waters) and internally (i.e., collection systems).

In the Sacramento area flooding can occur as the result of a flash flood or when water exceeds the bank of a creek, stream, or river. The following describes these types of flood events. The term 'flash flood' describes localized floods of high volume and short duration, generally in less than four hours. This type of flood usually results from a heavy rainfall on a relatively small drainage area. Precipitation of this sort usually occurs in the spring and summer. Dam failures also often result in flash flooding.

Riverine flooding occurs when a watercourse exceeds its 'bank-full' capacity and is the most common type of flood event. Riverine flooding occurs as a result of prolonged rainfall that is combined with saturated soils from previous rain events, or combined with snowmelt, and is characterized by high peak flows of moderate duration and by a large volume of runoff. Riverine flooding occurs in river systems whose tributaries drain large geographic areas and can include many watersheds and sub-watersheds. The duration of riverine floods varies from a few hours to many days. Factors that directly affect the amount of flood runoff include precipitation amount, intensity and distribution, soil moisture content, channel capacity, seasonal variation in vegetation, snow depth and water-resistance of the surface due to urbanization.

Urbanization may increase peak flow runoff as well as the total volume of stormwater runoff from a site. The increase is dependent upon the type of soil and its topography compared to the proposed land uses. Much of the City is characterized by urbanized surfaces that are impervious and soils with low permeability and high runoff rates.

Water Quality

Surface water quality can generally be characterized by surrounding land uses and the quality of receiving waters can be adversely affected by surrounding land uses that produce and discharge point source and non-point source pollutants to receiving waters.

In the Sacramento area, developed areas primarily consist of agricultural activities and urban/suburban development. Natural drainage patterns have been altered as a result of development. Alteration of natural drainage patterns facilitates the transport of pollutants in stormwater and non-stormwater, particularly in urban runoff. Urban runoff more readily transports pollutants across impervious surface areas (e.g., rooftops, streets, sidewalks) and discharges the pollutants into local receiving waters such as the Sacramento and American rivers. Constituents found in urban runoff vary based on rainfall intensity, occurrence, geographic features, land use, and percentage of impervious surface area. During dry periods pollutants are released into the environment from vehicle exhaust, vehicle tire wear, crankcase drippings, spills, and atmospheric fallout within urbanized areas of a watershed.

Pollutant residues collect on parking lots, bare earth at construction sites, and at agricultural and landscape sites. Rainstorms wash the pollutant residues into stormwater and transport the pollutants into storm drains that lead to nearby receiving waters. Initial rainstorms provide the 'first flush' of the rainy season and elevate pollutant concentrations in nearby receiving waters. As a result, ambient surface water quality in receiving waters including the Sacramento and American Rivers, and their established beneficial uses, have been adversely affected by pollutants in urban runoff. Current engineering control technologies are available to reduce the urban pollutants before the stormwater runoff is discharged to local waterways.

Stormwater discharge monitoring data collected from Sacramento urban area monitoring stations since 1990 indicates six target pollutants that are commonly measured in urban runoff. The target pollutants (constituents) are mercury, diazinon, chlorpyrifos, lead, copper and fecal coliform.² These pollutants were designated as target pollutants based on their toxicity and propensity to accumulate in humans and animals, and the potential to exceed state Basin Plan water quality criteria and are listed by the State Water Resources Control Board as impairing state water bodies.

The State Water Resources Control Board (SWRCB) and Central Valley Regional Water Quality Control Board (CVRWQCB) have identified, prepared and submitted a list of impaired water bodies within the region to the U.S. Environmental Protection Agency (EPA), pursuant to the CWA Section 303(d). The 2006 303(d) List was approved by EPA on June 28, 2007. In the project area, a 26-mile segment of Morrison Creek from Elk Grove-Florin Road to Beach Lake, Elder Creek (11 miles), and Elk Grove Creek (6.9 miles) are listed as impaired for diazinon and chlorpyrifos. The Sacramento River, which receives drainage from the project area is listed for mercury, diazinon, and unknown toxicity.³

The Sacramento and American rivers have been classified by the Central Valley Regional Water Quality Control Board (CVRWCB) as having numerous beneficial uses that must be protected, including providing municipal, agricultural, and recreational water supply. Other beneficial uses include freshwater habitat, spawning grounds, wildlife habitat, navigation on the Sacramento River, and industrial uses on the American River.

Agricultural land use is also known to contribute residual pesticides, fertilizers, and sediment as well as high nutrient content and dissolved solids to surface water bodies. Agricultural drainage canals are used to capture agricultural runoff (surface runoff that does not infiltrate into the soil or is not used by crops) with the captured runoff returned for reuse. However, contaminants from agricultural drainage can also be conveyed into waterways and cause impairments that can adversely affect invertebrate and vertebrate aquatic life and wildlife that rely on these waterways for their survival. Conversion of agricultural land to a developed environment impedes rainfall from infiltrating into soil as open space is covered by impervious surfaces created by development projects and, as a result,

2 City of Sacramento, *City of Sacramento Stormwater Quality Improvement Plan*, July 2004.

3 California Regional Water Quality Control Board Central Valley Region, *Waste Discharge Requirements NPDES No. CAS082597, Cities of Citrus Heights, Elk Grove, Folsom, Galt, Rancho Cordova, Sacramento, and County of Sacramento Storm Water Discharges from Municipal Separate Storm Sewer System Sacramento County*, September 2008, Item 88.

a greater percentage of rainfall will run off impervious surfaces and transport pollutants into nearby receiving waters. The total amount of pollutants entering receiving waters from non-point sources, such as those described above, is considered to be the most significant water quality challenge facing the state due to the diffuse, sporadic, sometimes difficult source identification issues associated with the transport of non-point source pollutants to receiving waters.

Groundwater

The proposed project is located within the South American Groundwater Sub-basin, part of the larger Sacramento Valley Groundwater Basin, covering approximately 248,000 acres (388 square miles) and bound by the Sierra Nevada to the east, the American River to the north, the Sacramento River to the west, and the Cosumnes and Mokelumne rivers to the south.

The following well-defined freshwater-bearing geologic units from the Holocene and Pleistocene eras are found in the project area; Alluvium, Flood Basin Deposits, and the Victor Formation. Alluvium is characterized by sand, gravel, silt, and minor amounts of clay; permeability and surface infiltration rates range from moderate to high, and the formation yields large quantities of water to wells of shallow depth. Tertiary-Quaternary Continental Deposits also found in the project area are thick-bedded deposits of silt and clay with thinner zones of sand and gravel. Flood Basin Deposits are composed of fine-grained material, chiefly silt and clay; permeability, surface infiltration rates, and water yields are low.⁴ Hydrologic soil group D, soils characteristic of slow infiltration rates and higher runoff potential, predominate at the proposed project site. Hydrologic soil group C soils found near the south/southwest areas of the proposed project site are characteristic of moderately high runoff potential.⁵

As a result of the varying soil characteristics described above, groundwater occurs in various unconfined and semi-confined geologic formations throughout the sub-basin. Permeability and surface infiltration rates range from low to moderate, and deep wells obtain moderate yields from sandy layers. Groundwater has been encountered on the project site at depths ranging from approximately 3 to 14 feet below ground surface, with groundwater levels closest to the surface in the western portion of the project site, closer to the Sacramento River.⁶

Where permeability of soils exists, and adhesion of contaminants to soil particles is not possible, urban point and non-point source pollutants, such as bacteria, nitrates from lawn and garden fertilizers containing nitrogen, and hydrocarbons from leaking underground gas storage tanks that supply gasoline at service stations can infiltrate to groundwater and impair the quality of groundwater. Groundwater quality in the South American Groundwater Sub-basin is generally within the secondary drinking water standards for municipal use, including standard levels of iron, manganese, arsenic, chromium, and nitrates. Groundwater in the project region can be described as a calcium magnesium bicarbonate or magnesium calcium bicarbonate. Other minor groundwater

4 California Department of Water Resources, *Groundwater Bulletin 118, Sacramento Valley Groundwater Basin, North American Subbasin*, updated January 20, 2006.

5 Civil Engineering Solutions, *Delta Shores Development, Sacramento, California, Preliminary Drainage Study*, March 18, 2007. Job No. 2005.63, page 11.

6 Wallace-Kuhl & Associates, Inc., *Geotechnical Engineering Report, Delta Shores*, July 31, 2006, page 7.

types include sodium calcium bicarbonate or calcium sodium bicarbonate in the vicinity of Elk Grove, and a magnesium sodium bicarbonate or sodium magnesium bicarbonate near the confluence of the Sacramento and American rivers.⁷ The water quality in the upper aquifer system is regarded as superior to that of the lower aquifer system and does not typically require treatment other than disinfection. The lower aquifer system has increased concentrations of Total Dissolved Solids (TDS), a measure of salinity, than does the upper aquifer, although it typically meets potable water supply standards.

To protect surface water and groundwater from pollutant impairments, the SWRCB and Regional Water Quality Control Boards (RWQCBs or Regional Boards) have jurisdiction over and regulate the quality of water in California waterways and groundwater, by enforcing water quality standards (numeric and narrative water quality objectives and designated beneficial uses), to comply with the federal Clean Water Act and the California Porter-Cologne Water Quality Control Act (see 'Regulatory Setting' below). The CVRWQCB enforces their regulatory responsibilities in the Sacramento Valley where the proposed project is located.

Site-Specific Hydrology, Water Quality, Storm Drainage and Flooding

Surface Water

The proposed project site is located within the Morrison Creek watershed, which covers approximately 150 square miles. Tributaries of Morrison Creek include Laguna Creek, Elk Grove Creek, Elder Creek, Unionhouse Creek, Strawberry Creek, and Florin Creek (a tributary to Elder Creek). Morrison Creek, which borders a portion of the project site on the south, is a levee channel in the project area. The eastern portion of the project site is undeveloped with a few vacant buildings present in the western portion. The only natural drainage features within the project site are seasonal swales and irrigation/drainage ditches.

The proposed project site east of I-5 lies within the 2.1 square-mile (1,345 acre) drainage shed known as Drainage Basin 89 (Basin 89) and the proposed project site west of I-5 lies within the 0.13 square-mile (86 acre) drainage shed known as Drainage Basin G267 (Basin G267). Morrison Creek and its tributaries Elder Creek and Elk Grove Creek are generally considered perennial creeks, some with channelized sections. However, Morrison Creek is predominantly channelized and deepened to accommodate peak stormflow, and flows west/southwest through urbanized high-density residential, industrial and commercial areas before flowing south to Stone Lake. Stone Lake, a 112-acre body of water that is part of the Stone Lake National Wildlife Refuge, is adjacent to and hydraulically connected, by pump, to the Sacramento River.

Urbanized waterways, including those in the Morrison Creek watershed, typically respond to seasonal rainfall by rapidly, but temporarily, increasing flow. During storm events, these 'flash flow' conditions occur in Morrison Creek and its tributaries. During seasonal dry weather conditions, though, substantially lower flow conditions occur.

7 California Department of Water Resources *Groundwater Bulletin 118*, Sacramento Valley Groundwater Basin, North American Subbasin, updated January 20, 2006.

Hydrologic and hydraulic analysis for the proposed project indicates that the Basin 89 topography is relatively flat, rectangular in shape, and has a ground slope of approximately 0.2 to 1 percent. East of I-5, Basin 89 land slopes toward two low lying areas with a ridge line running north-south that separates these low lying areas. East of this ridge line the land slopes to the City of Sacramento's Pump Station 89; the area west of this ridge line slopes southwesterly toward the Sweeny Ranch Pump Station. West of I-5 the land within Basin G267 slopes southeasterly and toward the freeway. There are no known offsite drainage areas that discharge into Basin 89. The existing drainage system, designed and constructed in the 1960s for residential and commercial development at the time, includes pipelines to convey flow to Pump Station 89 where stormwater is then pumped over the Morrison Creek levee and into Morrison Creek/Beach Lake. These 1960s drainage facilities were built based on prescribed storm water runoff values of 0.12 cubic feet per second (cfs).⁸

Basins 89 and G267 are protected by levees on the eastern, southern, and western boundaries. The southern and western boundaries currently provide a 100-year protection level. The eastern side levee has 100-year flood protection up to Brookfield Road, but north of Brookfield Road the levee does not have adequate freeboard and the 100-year water surface could spill into the low area of Basin 89.

Flooding

The majority of the project site is designated Shaded Zone X by the Federal Emergency Management Agency (FEMA). In this area, shaded Zone X areas are areas protected by levees from 100-year flood. Flood insurance is not required for properties in Shaded Zone X, and local floodplain zoning ordinances do not apply to Shaded Zone X.

A small portion of the site located along the southeast boundary of the site and along the natural drainage area in the southeast portion of the site designated A99. Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplains that will be protected by a federal flood protection system where construction has reached specified statutory milestones. No Base Flood Elevations (BFEs) or depths are shown within this zone. Mandatory flood insurance purchase requirements apply.

The Sacramento Area Flood Control Agency (SAFCA) has indicated that the currently designated A99 Zone will be revised to Shaded Zone X in the near future and a levee wall near Franklin Boulevard will be constructed. Further, SAFCA plans to fortify levees with 200-year protection in the project area and the surrounding Sacramento area.⁹

Sacramento flood control projects approved by the United States Congress in 1999 included raising levees along Morrison Creek and its tributaries in South Sacramento. As a result, SAFCA and the USACOE have performed extensive levee and channel work along Morrison Creek, the lower

8 Civil Engineering Solutions, *Delta Shores Development, Sacramento, California, Preliminary Drainage Study*, March 18, 2007. Job No. 2005.63.

9 Civil Engineering Solutions, *Delta Shores Development, Sacramento, California, Preliminary Drainage Study*, March 18, 2007. Job No. 2005.63, page 5.

reaches of Laguna, Elder, Florin, Unionhouse and Elk Grove Creeks, and the mainstream and headwaters of the north fork of Strawberry Creek.

Additionally, the Corps is improving the integrity of more than 80 levees that have sustained critical erosion damage over the years in the Sacramento Valley. Flood Safe California, a strategic initiative to improve flood protection for the people of California, will also build upon California's ongoing flood management work to include the critical erosion levee repairs. The Department of Water Resources is also in the process of preparing a long-term California Flood Plan which will be incorporated into the California Water Plan.

Urban Runoff

The project area currently consists primarily of agricultural land. Agricultural land use is known to contribute residual pesticides, fertilizers, and sediment as well as high nutrient content and dissolved solids to surface water bodies.

Stormwater runoff in the project area within the Morrison Creek watershed upstream of the project site would likely contain and transport urban pollutants such as residual pesticides, fertilizers, hydrocarbons, metals, bacteria, trash, and also transport sediment during and subsequent to construction activities. Morrison Creek is included in the City of Sacramento Stormwater Quality Improvement Plan's Monitoring Plan as an urban tributary monitoring site, which calls for annual monitoring for constituents found in pesticides, such as diazinon and chlorpyrifos.¹⁰ The CVRWQCB also collected runoff data for Morrison Creek, which show high levels of diazinon resulting from pesticide use within the watershed.¹¹

Constituents found in urban runoff vary as a result of differences in rainfall intensity and occurrence, geographic features, the land use of a site, as well as vehicle traffic and percent of impervious surface. In the Sacramento area, there is a natural weather pattern of a long dry period from May to October. During this seasonal dry period, pollutants contributed by vehicle exhaust, vehicle and tire wear, crankcase drippings, spills, and atmospheric fallout accumulate within the urban watershed. Precipitation during the early portion of the wet season (generally in November) washes these pollutants into the stormwater runoff, which can result in elevated pollutant concentrations in the initial wet weather runoff.

Groundwater

Groundwater use in the project area is not planned; however, the current CVRWQCB Basin Plan identifies potential uses for this groundwater to include future municipal and domestic supplies, agricultural supply, industrial service supply, and industrial process supply, in the event that surface water supplies are compromised.

10 City of Sacramento Stormwater Quality Improvement Program, *Stormwater Quality Improvement Plan*, June 2007, page 6-7.

11 California Regional Water Quality Control Board, *Central Valley Region, Total Maximum Daily Load (TMDL) Report for the Pesticides Diazinon & Chlorpyrifos in: Arcade Creek, Elder Creek, Morrison Creek, Chicken Ranch Slough, and Strong Ranch Slough, Sacramento County, California, September 2004*, page 16.

The CVRWQCB requires that urban runoff retained in detention facilities must be separated by two feet of soil to prevent any possible contamination of the groundwater, and to prevent any unnecessary pumping of groundwater.

Currently, no known groundwater impairments or areas of contamination are found in the vicinity of the proposed project site.¹²

Regulatory Context

Federal

Federal Clean Water Act

The Federal Water Pollution Control Act Amendments of 1972 was enacted due to growing public awareness of and concern for controlling water pollution in the United States. This act was amended in 1977 and became commonly known as the Clean Water Act (CWA). The Act's basic tenant was to regulate discharges of pollutants into the waters of the United States and provide the EPA the authority to implement pollution control programs for industry. The CWA also established water quality standards for all contaminants in surface waters and made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. The CWA also includes a construction grants program for the purpose of constructing sewage treatment plants and nonpoint source pollution regulations. Changes to the CWA in 1981 allowed for improved capabilities of treatment plants built under the program and streamlined the municipal construction grants process. In 1987, the CWA was again amended to replacing the construction grants program with the State Water Pollution Control Revolving Fund, also known as the Clean Water State Revolving Fund.

Section 402 of the CWA established a permit system, the NPDES, to regulate point source discharges into navigable waters of the U.S. The EPA was provided the authority to implement the NPDES program throughout the U.S. and provided states with the authorization to implement the NPDES program on behalf of the EPA. Technology generated to control point source pollution discharges from factories and municipal sewage treatment plants are well established.

Section 402 - National Pollutant Discharge Elimination System

The 1972 amendments to the Federal Water Pollution Control Act established the NPDES permit program to control discharges of pollutants from point sources. The 1987 amendments to the CWA created a new section of the CWA devoted to stormwater permitting (Section 402p). The EPA has granted the State of California primacy in administering and enforcing the provisions of CWA and NPDES. NPDES is the primary federal program that regulates point source and non-point source discharges to waters of the U.S.

Each NPDES permit identifies 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. "Nonpoint source" pollution originates over a wide area rather than from a

12 State Water Resources Control Board, GeoTracker database, <www.geotracker.swrcb.ca.gov>.

definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of non-point source discharges are controlled by the NPDES program: discharges associated with industrial activities including construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable.

The SWRCB issues both general and individual permits for discharges to surface waters, including for both point-source and non-point-source discharges. In response to the 1987 amendments, the EPA developed the Phase I NPDES Storm Water Program for cities with populations larger than 100,000, and Phase II for smaller cities. Stormwater runoff from urban development in the city of Sacramento is regulated under a Phase 1 NPDES permit, which is explained in more detail in “Stormwater Management and NPDES Municipal Separate Storm Sewer Systems (MS4) Permit” under the “Local” subheading, below.

Section 303 – Total Maximum Daily Loads (TMDL)

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still be in compliance with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. EPA must either approve a TMDL prepared by the state or disapprove the state’s TMDL and issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) List would be remediated.

Federal Anti-degradation Policy

The federal anti-degradation policy is included in the water quality standards of the CWA and requires states to individually adopt anti-degradation policies that are consistent with federal standards to provide a three-tiered approach to water quality protection. The three tiers include: protect existing uses, maintain high quality water, and to protect “outstanding” (e.g., ecologically sensitive, cleanest, and recreationally popular waters) with strict protection standards.

United States Army Corps of Engineers

The Corps is responsible for a variety of activities related to hydrology and water quality, including: environmental resources, floodplain management, navigation of waterways, recreation, engineering, water resources management, and regulatory support.

Federal Emergency Management Agency (FEMA)

FEMA is responsible for determining flood elevations and floodplain boundaries based on hydrologic and hydraulic studies. FEMA is also responsible for distributing the Flood Insurance Rate Maps

(FIRMS), which are used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain. FEMA allows non-residential development in the floodplain. However, construction activities are restricted within the flood hazard areas depending upon the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations (CFR).

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act was enacted in 1969 as a comprehensive water quality control law intended to preserve, enhance and restore the quality of California's water resources, and it serves as a regulatory program developed to protect water quality and beneficial uses of California's water. The SWRCB and the nine RWQCBs, which comprise a portion of the California Environmental Protection Agency (Cal EPA), are responsible for protecting and regulating California's water resources including surface water and groundwater quality, and surface water supply under the Porter-Cologne Water Quality Act.

The Porter-Cologne Water Quality Control Act establishes the responsibilities and authorities of the RWQCBs, which includes responsibility and authority for regional water quality control and planning, and requires the adoption of water quality control plans (Basin Plans). Basin Plans contain water quality standards that consist of designated beneficial uses and water quality objectives (numeric and narrative) for rivers and their tributaries within designated RWQCBs jurisdictions. The Basin Plans are prepared and approved by the designated RWQCBs and SWRCB to comply with the federal CWA and the California Water Code (section 13240).¹³ In cases where Basin Plans do not provide a water quality standard for a particular pollutant, or the standard is narrative rather than numeric, other criteria such as EPA or Department of Fish and Game criteria that are developed in accordance with Section 304(a) of the CWA can be used. The Regional Boards also regulate discharges through WDRs, waivers of WDRs, and prohibitions of discharge.

Water Quality Control Plan for the Sacramento River Basin

To protect the beneficial uses of surface water and groundwater for the people of California, all nine Regional Boards exercise their regulatory responsibilities by enforcing policies and standards set forth in the Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code), the California Code of Regulations, and Regional Water Quality Control Plans for respective watersheds within each of the nine regions. Established water quality standards are implemented through NPDES Permits, WDRs, and TMDLS, to control the transport of point source and non-point source pollutant discharges to California waterways, to ensure California state compliance with the federal CWA and the California Porter-Cologne Water Quality Control Act.

13 California Regional Water Quality Control Board, Central Valley Region, *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan), Fourth Edition – 1998, revised 2004.

The CVRWQCB is responsible for preparing a water quality control plan that identifies beneficial uses of the Sacramento River and its tributaries, and also for preparing water quality objectives for the protection of beneficial uses. Numerical and narrative criteria are contained in the basin plan for key water quality constituents including: dissolved oxygen (DO), water temperature, trace metals, turbidity, suspended material, pesticides, salinity, radioactivity, and other related constituents. Water quality objectives for the Sacramento River are specified in the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan).

NPDES permits issued by the CVRWQCB implement the Basin Plan water quality standards. Permittees' NPDES permits require the protection of beneficial uses of receiving waters through the permittees' attainment of water quality standards, including water quality objectives. Because numeric effluent limits for pollutants in storm water discharges from municipal storm sewer systems have not been identified and established in the Basin Plan, discharge effluent limitations in permits are narrative and require the reduction of pollutants of concern in storm water discharges to the maximum extent practicable (MEP) and requires the implementation of best management practices (BMPs), identified in a storm water quality program, to control and reduce the discharge of pollutants in storm water discharges to ensure compliance with the CWA. Implementation of BMPs constitutes compliance with MEP requirements.

General Permit for Stormwater Discharges Associated with Construction Activity

Construction activities are regulated under the state-implemented NPDES General Permit for Discharges of Storm Water Runoff associated with Construction Activity (General Construction Permit) by the Regional Boards, for ground disturbance during construction that is one acre or greater in size. These activities include clearing, grading, and disturbances to the ground such as stockpiling, or excavation that results in soil disturbances. Coverage under a General Construction Permit requires the preparation of a stormwater pollution prevention plan (SWPPP) and Notice of Intent (NOI). The SWPPP includes pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills), demonstration of compliance with all applicable local and regional erosion and sediment control standards, identification of responsible parties, a detailed construction timeline, and best management practices (BMP) monitoring and maintenance schedule to determine the amount of pollutants leaving the site.

The SWPPP does not have to be submitted to the RWQCB but must be available at each facility. The NOI includes site-specific information and the certification of compliance with the terms of the General Construction Permit.

State Reclamation Board

The State Reclamation Board (Reclamation Board) permit is needed for any project that may have an effect on the flood control functions of levees. Through the permitting process, the Reclamation Board ensures that there are no residences built within the local adopted plan of flood control (a flood control plan and/or reclamation strategy for a specific area that has been adopted by the Reclamation Board or the Legislature). An adopted plan for flood control includes the natural stream channel and overbank area at design flood levels or a 100-year flood elevation, areas between and

including the project levees, areas where there are flowage easements, and up to 10 feet landward from the landside toe of a federal flood control project levee.

Local

Stormwater Management and NPDES Municipal Separate Storm Sewer Systems (MS4) Permit

The Central Valley Regional Water Quality Control Board regulates storm water discharges from the municipal separate storm sewer systems (MS4) and non-storm water discharges that come from facilities owned or operated by the County of Sacramento, and the cities of Citrus Heights, Elk Grove, Folsom, Galt, Rancho Cordova, and Sacramento (Permittees/Dischargers) that flow directly or indirectly to receiving waters to include lakes, water-supply reservoirs, ground waters, rivers, tributary streams and waterways and contiguous water bodies within Sacramento County under an NPDES Phase 1 MS4 permit. The current NPDES MS4 Permit Order CAS082597 was issued in December 2002, and the conditions of that permit are applicable to the proposed project and must be monitored and enforced by the City of Sacramento. Receiving Water Limitations described in the City's NPDES Permit require the implementation and evaluation of control measures that are technically and economically feasible to reduce pollutants in storm water discharges to the Maximum Extent Practicable (MEP) by BMPs, and Low Impact Development (LID) measures, to attain water quality objectives protective of the beneficial uses of the aforementioned receiving waters that will potentially be impacted by the proposed project construction and operation activities.

The Permittees have authority to develop, administer, implement, and enforce stormwater management programs within their own jurisdiction. The City of Sacramento NPDES Permit requires implementation of programs that establish priorities based on addressing urban pollutants of concern, to reduce the level of pollutants in storm water discharges from municipal separate storm sewer systems and the Permit requires that any change in water quality will not unreasonably affect the present and anticipated beneficial use of receiving waters and will not result in water quality less than that prescribed in State Board policies.

This Permit also requires the evaluation of effectiveness of established programs, including compliance monitoring and special studies, for the Permittees' to attain water quality objectives and protect beneficial uses of the aforementioned receiving waters. The current adopted December 2002 NPDES Permit allows for the continued collection and summation of monitoring data to further develop a list of stormwater discharge pollutants of concern, in order to assess existing or potential receiving water quality impacts as a result of the identified Sacramento area urban pollutants. An annual review will determine whether the continued implementation of the Permittees' stormwater management program has a reasonable likelihood of preventing exceedances of water quality standards.

Implementation of control measures are prioritized to correct the most serious water quality threats first. Implementation schedules also incorporate sufficient time to be allocated to research, development, special studies, or other steps determined to be necessary to ensure effective management of pollutants of concern. The Permittees' NPDES Permit includes a procedure for determining whether storm water discharges are causing continuing or recurring exceedances of

receiving water limitations and for evaluating whether the Program must be revised. The Permittee/Discharger will be in compliance with the Receiving Water Limitations so long as it complies with that procedure.

The implementation of the NPDES requirements in Sacramento is accomplished through two mechanisms. The first is the City of Sacramento Stormwater Quality Improvement Plan (SQIP), which was created in July 2003 and outlines the priorities and activities of the City's Stormwater Management Plan for 2003-2008. Implementation of the City's Stormwater management program is conducted through the program management activities and seven program elements: construction, illegal discharge, industrial, new development, municipal operations, public education and outreach, and watershed stewardship.

The second mechanism, the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions* (Design Manual), dated May 18, 2007, requires development and redevelopment projects within urban areas of Sacramento County to implement stormwater treatment measures and source control measures, to comply with state and federal regulatory standards. The manual also encourages projects to implement runoff reduction measures. Compliance with the Design Manual constitutes compliance with the Sacramento MS4 NPDES Permit.

The current NPPES permit, which expired in December 2007, is in the process of being revised by the CVRWQCB to incorporate additional federal and state requirements pertaining to enhanced BMP practices such as low impact development/design (LID) and development and implementation of a Hydromodification Management Plan (HMP).

The existing Design Manual promotes (but does not currently require) LID principles such as conservation and use of natural site features; site-specific, lot-scale source and treatment control measures that keep runoff from contacting runoff and leaving the site; and runoff reduction control measures integrated into site design. Under the revised permit, the City of Sacramento (along with the other permittees) must amend, revise, or adopt development standards including policies, codes, ordinances, and/or regulations to require implementation of LID strategies at priority new development and redevelopment projects no later than six months after approval of the HMP by the CVRWQCB.

The HMP is a separate element of the SQIP subject to CVRWQCB review and approval. The HMP must include controls to manage increases in the magnitude, volume and duration of runoff from development projects to protect receiving waters from increased potential for erosion and other adverse impacts with consideration towards maintaining (or reproducing) the pre-development hydrology. The HMP must address, at a minimum, structural and non-structural BMPs, minimizing the quantity of stormwater directed to impermeable surface and the storm drain, maximizing the percentage of permeable surfaces to allow more percolation, and consideration of the full range of BMPs in the Design Manual. Once the HMP is approved by the CVRWQCB, the MS4 Permittees are required to amend their development standards to implement the HMP components no later than six months after the HMP is approved.

Another element of the revised permit applies to the entitlement process.

The revised permit is expected to be adopted by the SWRCB in September 2008. Upon adoption, the City of Sacramento (along with the other Permittees covered by the permit) will be required to comply with the terms of the permit. This will require that elements of the SQIP and Design Manual affected by revised permit terms and conditions be modified by the City of Sacramento and other Permittees according to the timelines established in the revised permit. The SQIP must be revised by February 1, 2009,(or six months after the revised NDPES permit becomes effective).

When the revised permit is adopted, it will require the City of Sacramento along with the other Permittees to update and continue to implement the Planning and New Development Element of the SQIP to minimize the short and long-term impacts on receiving water quality from new development and redevelopment. The Permit requires the continued implementation of the Permittees' Development Standards during the entitlement and CEQA process and the development plan review process. This element further requires that storm water quality controls are properly selected and required during the development plan review process to minimize stormwater quality impacts to the MEP, that the appropriate selected post-construction stormwater quality controls are chosen on the basis of project- and site-specific conditions and land use characteristics as well as receiving water impact, and that selected storm water quality controls remain effective upon project completion and are maintained.

In order to reduce pollutants and runoff flows from new development to the MEP, the City will be required to ensure (through its obligation as a Permittee covered by the revised NDPES MS4 permit) that certain water quality planning and design principles are incorporated into its planning procedures and policies that affect land use decisions, and that consistent water quality protection measures are implemented for priority development projects. Such measures include: minimizing the amount of impervious surfaces and maximizing on-site infiltration; pollution prevention combined with source control; preservation, creation, or restoration of on-site through riparian corridors, wetlands, and buffer zones to provide water quality benefits; minimizing disturbance of natural water bodies and drainage systems; requirements for structural and non-structural BMPs, and controlling post-development peak stormwater runoff discharge rates to prevent or reduce downstream erosion and to protect stream habitat (hydromodification concepts).

The City of Sacramento, in issuing development permits for the proposed project, will be responsible for ensuring the project includes features that meet all applicable requirements of the SQIP and Design Manual, including any revisions thereof, that are necessary to implement the revised NPDES permit components pertaining to BMPs, LID, and HMP that are applicable to the proposed project.

City of Sacramento Stormwater Management and Discharge Control Code

The City's Stormwater Management and Discharge Control Code (Chapter 13.16 of the City Code) is intended to control nonstormwater discharges to the stormwater conveyance system; eliminate discharges to the stormwater conveyance system from spills, dumping, or disposal of materials other than stormwater; and reduce pollutants in urban stormwater discharges to the maximum extent practicable through the implementation of BMPs. Nonstormwater discharges are prohibited except

where the discharge is regulated under a NPDES permit (see the descriptions of the NPDES in the discussions of federal and state water quality regulations above). Discharges from specified activities that do not cause or contribute to the violation of any plan standard, such as landscape irrigation and lawn watering and flows from fire suppression activities, are also exempt from this prohibition. Discharges of pumped groundwater not subject to a NPDES permit may be permitted to discharge to the stormwater conveyance system upon written approval from the City and in compliance with the City's conditions of approval.

Urban runoff pollution resulting from new development is minimized and controlled using source and/or treatment control measures to remove and prevent pollution in stormwater as determined appropriate by the City. These measures may include, but are not limited to, specific control measures for: storage and handling of commercial/industrial materials, vehicle and equipment maintenance, repair, and washing, waste handling, and permanent "no dumping-drains to river" storm drain markings. When the revised NPDES Phase 1 MS4 permit becomes effective and the SQIP and Design Manual are updated accordingly, additional measures will be required in the design of the proposed project that implement the City's obligations as a Permittee for LID and HMP compliance. The City of Sacramento will be responsible for ensuring appropriate storm water quality features that address both water quality (LID BMPs) and runoff rates and volumes (HMP) are included in the project prior to the approval of improvement plans, grading permits, and building permits. Consistent with the revised permit, the specific storm water quality controls for the proposed project must be identified during the development plan review process to address MEP requirements. The appropriate post-construction stormwater quality controls will be chosen on the basis of project- and site-specific conditions and land use characteristics as well as receiving water impacts,

City of Sacramento Grading, Erosion, and Sediment Control Ordinance

The City's Grading, Erosion, and Sediment Control Ordinance (Title 15, Chapter 15.88 of the City Code) sets forth rules and regulations to control land disturbances, landfill, soil storage, pollution, and erosion and sedimentation resulting from construction activities. With limited exceptions, grading approval must be received from the City's Department of Utilities before construction. All project applicants, regardless of project location, are required to prepare and submit separate erosion and sediment control plans (ESC plans) applicable to the construction and post-construction periods. The ESC plans shall include erosion controls such as straw mulch and tackifiers, sediment controls such as fiber rolls, stabilized entrances and inlet protection and housekeeping practices such as concrete management. The ordinance also specifies other requirements, such as written approval from the City for grading work within the right-of-way of a public road or street, or within a public easement.

Sacramento Area Flood Control Agency

SAFCA was formed in 1989 to address and manage the Sacramento area's vulnerability to catastrophic flooding. Sacramento's vulnerability to catastrophic flooding was exposed during the 1986 flood, a record flood event, when several Sacramento area levees nearly failed and Folsom Dam exceeded its normal flood control storage capacity. The City of Sacramento, the Counties of

Sacramento and Sutter, the American River Flood Control District, and Reclamation District 1000 formed SAFCA in response to the severe 1986 flood event, to provide the Sacramento region with increased flood protection along the American and Sacramento rivers. SAFCA's goal is to protect the region with at least a 100-year level of flood protection as expeditiously as possible while achieving a 200-year or greater level of protection over time. The SAFCA Act of 1990 has authorized SAFCA broad authority, through state legislation, to finance flood control projects and to implement flood control responsibilities to protect people and the natural environment.

City of Sacramento 1988 General Plan

The City's current General Plan policy related to hydrology and water quality that is applicable to the proposed project is provided below, and is found in the General Plan's Health and Safety Element. The City of Sacramento General Plan adopted the following policy that pertains to the impacts evaluated in this section. The City is currently in the process of updating its existing 1988 General Plan.

PUBLIC FACILITIES AND SERVICES ELEMENT

Drainage

Goal A Provide adequate drainage facilities and services to accommodate desired growth levels.

Policies

1. Ensure that all drainage facilities are adequately sized and constructed to accommodate the projected increase in stormwater runoff from urbanization.
4. Require private sector to form assessment districts and/or utilize other funding mechanisms to cover the cost of providing drainage facilities.
5. Design visible drainage facilities to be visually attractive.

CONSERVATION AND OPEN SPACE ELEMENT

Outdoor Recreation

Goal A Conserve and protect the Sacramento and American Rivers, their shorelines and parkways.

Preservation of Natural Resources

Goal E Establish development standards for water related open space lands throughout the City to enhance visual amenities of these uses.

Policy

1. Explore ways to reverse degradation and pollution, and enhance the beauty and wildlife habitats of creeks and drainage canals.

City of Sacramento 2030 General Plan

The City anticipates adopting its new 2030 General Plan by the end of 2008. Therefore, applicable policies from the 2030 General Plan are included below.

Goal ER 1.1 Water Quality Protection. Protect local watersheds, water bodies and groundwater resources, including creeks, reservoirs, the Sacramento and American rivers, and their shorelines.

- ER 1.1.3 **Stormwater Quality.** The City shall control sources of pollutants and improve and maintain urban runoff water quality through storm water protection measures consistent with the City's National Pollution Discharge Elimination System (NPDES) Permit.
- ER 1.1.4 **New Development.** The City shall require new development to protect the quality of water bodies and natural drainage systems through site design, storm water treatment, and best management practices (BMPs) consistent with the city's NPDES Permit.
- ER 1.1.5 **Post-Development Runoff.** The City shall impose requirements to control post-development peak storm water runoff discharge rates and velocities to prevent or reduce downstream erosion and protect stream habitat.
- ER 1.1.6 **Construction Site Impacts.** The City shall continue to require construction contractors to comply with the City's erosion and sediment control and stormwater management and discharge control ordinances.

Stormwater Drainage

- Goal U 4.1 Adequate Stormwater Drainage. Provide adequate stormwater drainage facilities and services that are environmentally-sensitive, accommodate growth, and protect residents and property.**

Policies

- U 4.1.1 **Adequate Drainage Facilities.** The City shall ensure that all new drainage facilities are adequately sized and constructed to accommodate stormwater runoff in urbanized areas.
- U 4.1.2 **Master Planning.** The City shall implement master planning programs to:
- Identify facilities needed to prevent 10-year event street flooding and 100-year event structure flooding,
 - Ensure that public facilities and infrastructure are designed pursuant to approved basin master plans, and
 - Ensure that adequate land area and any other elements are provided for facilities subject to incremental sizing (e.g., detention basins and pump stations).

ENVIRONMENTAL CONSTRAINTS

- Goal EC 2.1 Flood Protection. Protect life and property from flooding hazards.**

Policies

- EC 2.1.7 **Levee Setbacks for New Development.** The City shall prohibit new development within a minimum distance of 50 feet from the landside toe of levees. Development may encroach within this 50-foot area provided that "oversized" levee improvements are made to the standard levee section consistent with local, regional, State and Federal standards.
- EC 2.1.8 **Dedication of Levee Footprint.** The City shall require new development adjacent to a levee to dedicate the levee footprint in fee to the appropriate public flood control agency.

South Area Community Plan

The City anticipates adopting the South Area Community Plan as part of the 2030 General Plan. The following policies are relevant to flooding in the Community Plan area.

- SA.EC 1.1 **Flood Control Improvements.** The City shall support the Sacramento Area Flood Control Agency's (SAFCA) levee improvement projects (including constructing floodwalls along portions of Florin, Morrison, Elder, and Unionhouse Creeks) that will provide 100-year flood protection from the Sacramento River to the Union Pacific railroad tracks.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

Impacts on hydrology, water quality, and storm drainage were analyzed qualitatively based on a review of the project design and intended uses and information in the project drainage study provided by the applicant to establish existing conditions and to identify potential environmental effects. The runoff block of the Sacramento Storm Water Management Model (SSWMM) was used to estimate the amount of runoff from the proposed project and remaining areas of Drainage Basin 89.¹⁴

In determining the level of significance, this analysis assumes the proposed project would comply with applicable regulations and ordinances.

Standards of Significance

For the purposes of this EIR, impacts on hydrology, water quality, and storm drainage are considered significant if the proposed project would:

- substantially degrade water quality and violate any water quality objectives set by the SWRCB due to increases in sediments and other contaminants generated by construction and/or operational activities;
- expose people or property to flooding;
- discharge into surface waters that would affect the water temperature, turbidity, dissolved oxygen, etc., such that it would affect the health of the water body;
- create or contribute stormwater runoff which would exceed the capacity of existing or planned stormwater drainage systems or increase erosion at the project site; or
- 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.

Project-Specific Impacts and Mitigation Measures

5.5-1 Construction and operation of the proposed project could result in the degradation of water quality in local and regional receiving waters.

The proposed project is located within the Morrison Creek watershed where construction and operation of the proposed project is planned.

Construction

The proposed project includes the development of an approximate 782-acre mixed use development project on a site which is currently undeveloped agricultural land used primarily to grow and harvest

14 Civil Engineering Solutions, *Delta Shores Development, Sacramento, California, Preliminary Drainage Study*, March 18, 2007. Job No. 2005.63, page 5.

tomatoes, sugar beets, wheat, corn, safflower, and alfalfa. Earth disturbing activities associated with project construction activities such as trenching, excavating, grading and placement of fill at the site would expose soils to wind and water erosion. Spills or lead from heavy equipment and machinery (petroleum products and/or heavy metal), building sites, staging areas could also occur. Construction site runoff, including stormwater runoff containing various urban pollutants, could be discharged to nearby waterways within the Morrison Creek watershed and to the Sacramento River, potentially degrading water quality of these waterways. However, these potential impacts would be short-term and occur only during the project construction phase periods.

To address potential construction-related impacts, future developers of the residential and commercial project components would be required to comply with the NPDES permit, which includes the following:

- Filing of a NOI for coverage under the State NPDES General Permit for Discharges of Storm Water Runoff associated with Construction Activity to the SWRCB for the regulation of storm water discharges caused by the proposed project's construction activities, such as clearing, grading, stockpiling, or excavation activities, that result in soil disturbances at the proposed project site.
- Preparation of an ESC plan in compliance with Section 15.88.250 of the City's Municipal Code, Grading Ordinance, and Stormwater Management and Discharge Ordinance, with guidance from the Administrative and Technical Procedures Manual for Grading and Erosion and Sediment Control. The ESC Plan includes erosion control BMPs, sediment control BMPs, and good housekeeping practices to be implemented during construction.
- Preparation of a SWPPP which includes a detailed, site-specific listing of the potential sources of stormwater pollution; pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills) to include a description of the type and location of erosion and sediment control BMPs to be implemented at the project site, and a BMP monitoring and maintenance schedule to determine the amount of pollutants leaving the proposed project site.
- Preparation of a Post-Construction Stormwater Quality Plan (PCSWQ) which would contain all information pertinent to the design and construction of the treatment control measures and proposed LID measures to be implemented. The PCSWQ and associated treatment control measures, source control measures, and appropriate LIDs and runoff reduction measures would be reviewed by the City of Sacramento under its NPDES MS4 Permittee requirements to ensure the features comply with the SQIP Planning and New Development Element and the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions* (Design Manual) requirements (including any revisions thereof required under the City's revised NPDES MS4 Permit when adopted by the SWRCB and approval of the SQIP) and; therefore, with Regional Board requirements set forth in the City's NPDES Phase I Stormwater Permit.

Operation

Operation of the proposed project would change the land use within the project site's portion of Morrison Creek watershed from agricultural to urban. Conversion of agricultural land to urban residential and commercial development would impede rainfall from infiltrating into the soil as it does currently. Rainfall would instead run off the planned 49 percent addition of impervious surface area for the proposed development project and would be conveyed to storm drains and detention basins, and eventually to surface waters in the project area. This additional impervious surface area, in comparison to the naturally occurring hydrologic soil group characteristics present on the site and existing agricultural land, could increase the transport of urban pollutants in stormwater and non-stormwater runoff to nearby waterways within the Morrison Creek watershed.

Pollutants of concern that are likely to be discharged to and impact waterways within the Morrison Creek watershed during operation of the proposed project, include but are not limited to sediment, nutrients, trash, metals, bacteria, oil and grease, and organics. Urban storm water runoff discharges containing these pollutants can impact beneficial uses of nearby receiving waters including the Sacramento River and the Sacramento-San Joaquin Delta, by adversely affecting the water temperature, turbidity, and dissolved oxygen content the waterways, and negatively impacting aquatic life. The presence of increased contaminants in runoff from the project site, including sediment, could be discharged to the Morrison Creek watershed, the Sacramento River, and ultimately the Sacramento-San Joaquin Delta.

Because the proposed project is located within the city of Sacramento, it is subject to the Sacramento area-wide Phase I City of Sacramento NPDES Municipal Separate Storm Sewer System (MS4) Permit CAS082597 SQIP and the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions Design Manual* (Design Manual). The key elements of the NPDES permit requirements that apply to the proposed project are source control of urban pollutants and water quality treatment before the stormwater is discharged to local waterways. As described in the "Regulatory Setting" anticipated revisions to the Phase 1 MS4 permit are expected to become effective beginning in September 2008, with associated updates to both the SQIP and Design Manual that will require the incorporation of LID and HMP features to address both water quality and the amount of runoff from the proposed project.

The Design Manual lists seven source control measures designed to be incorporated into projects to prevent pollutants from combining with site runoff, which flows into municipal storm drain systems and local water bodies. The source control measures required depend on the type of project being developed (e.g. single-family residential, multi-family residential, commercial/light industrial, gasoline outlets, parking lots, heavy industrial, etc.). Based on the uses within the proposed project, it is likely that all of the source control measures would be required somewhere within the project site. Responsibility for each source control varies with each project. The source controls are described below:¹⁵

15 Sacramento Stormwater Quality Partnership, *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*, May 2007, Chapter 4.

- *Storm drain markings and signs.* Required for all project types. Includes “No dumping-drains to creek/river” messages at storm drain inlets and “No dumping” signs at public access points along channels and creeks.
- *Fueling areas.* Required for commercial/light industrial, auto repair shops, retail gasoline outlets, restaurants, heavy industrial, and sometimes hillside development projects. Includes criteria for the siting and design of vehicle and equipment fueling areas to prevent leaked fuels and fluids from entering the storm drain system.
- *Loading areas.* Required for commercial/light industrial, auto repair shops, retail gasoline outlets, restaurants, heavy industrial, and sometimes hillside development projects. The manual includes design specifications aimed at minimizing the chance that spilled or leaked fluids or other materials accumulated in loading areas enters the storm drainage system.
- *Outdoor storage areas.* Required for commercial/light industrial, auto repair shops, retail gasoline outlets, restaurants, heavy industrial, and sometimes hillside development projects. This source control is intended to prevent materials in outdoor storage areas from being washed off site with runoff. The manual includes design requirements to ensure that water does not come in contact with stored materials or pollutants that may leach out from the materials.
- *Outdoor work areas.* Required for commercial/light industrial, auto repair shops, retail gasoline outlets, restaurants, heavy industrial, and sometimes hillside development projects. The manual describes how to design outdoor work areas or work areas that are open to the outdoors to prevent pollutants or other substances that may be present in the area from coming into contact with stormwater runoff and being carried into the storm drainage system or local water bodies.
- *Vehicle/Equipment wash areas.* Required for multi-family residential, commercial/light industrial, auto repair shops, retail gasoline outlets, restaurants, heavy industrial, and sometimes hillside development projects. This source control ensures design and placement of vehicle/equipment wash areas so that wash water containing pollutants such as oil, grease, metals, suspended solids, food waste/fats/oils, detergents, and other cleaning chemicals, does not enter the storm drain system or local water bodies.
- *Waste management areas.* Required for multi-family residential, commercial/light industrial, auto repair shops, retail gasoline outlets, restaurants, parking lots, heavy industrial, and sometimes hillside development projects. This manual specifies how to design waste and recycling storage areas so that spilled or leaked wastes do not enter the storm drainage system.

Stormwater Drainage System Options

The preferred stormwater drainage system includes two wet water quality/detention ponds, at least two dry water quality/detention ponds and an enhanced wetland area. The preferred system includes enhancement of the seasonal wetlands. The preferred system provides detention storage in the seasonal wetland area for periods of heavy rainfall. The preferred system provides water quality

treatment for existing developed areas within the drainage shed and the proposed project. In the preferred system, stormwater runoff treatment would be primarily provided through the use of on-site detention facilities, which would reduce the rate at which stormwater leaves the site and would also provide water quality features that remove pollutants from runoff. Stormwater from the site as well as neighboring development to the north of the project site would flow through the stormwater pipeline network to the open space area located in the eastern portion of the site. Stormwater flows into this area would be subject to either active or passive water quality treatment including the use of storm grates, bio-swales, bio-slopes, or be channeled into one of two water quality/detention basins. The proposed water quality and flood control storage volume in the basins as well as the 28-acres of seasonal wetlands would be approximately 200 acre-feet. Additional information regarding the design (depth, volume, etc.) of the water quality basin is presented in Impact 5.5-2, below. See Figure 5.5-1 for a map of the existing and proposed stormwater drainage facilities within the project site.

After treatment in the detention/water quality basins, stormwater would be routed via a new pipe into the existing Pump Station 89's (Sump 89 pump station) forebay and then pumped into the Morrison Creek/Beach Lake.

The alternate drainage system consists of three wet water quality/detention ponds, at least two dry water quality/detention ponds and avoidance of much of the wetland area. Stormwater runoff treatment would be primarily provided through the use of these on-site detention facilities, which would reduce the rate at which stormwater leaves the site and would also provide water quality treatment to remove pollutants from runoff. Stormwater from the site would flow through the stormwater pipeline network to the wet or dry water quality/detention ponds. The proposed water quality and flood control storage volume in the five detention basins would be approximately 200 acre-feet. Additional information regarding the design (depth, volume, etc.) of the water quality basins is presented in Impact 5.5-2, below.

After treatment in the detention/water quality basins, stormwater would be routed via a new pipe into the existing Pump Station 89's (Sump 89 pump station) forebay and then pumped into the Morrison Creek/Beach Lake.

As indicated in the Regulatory Setting, the SWRCB is in the process of finalizing and adopting a revised NPDES MS4 permit. Programs that implement the NPDES permit, such as the SQIP and Design Manual, must be revised by the Permittees and submitted to the CVRWQCB for review and approval in early 2009. Once the SQIP and Design Manual BMP requirements have been approved, prior to issuance of any grading permit or building permit for the proposed project, the City must ensure the additional BMP requirements mandated under the revised SQIP and Design Manual to meet MEP requirements and hydromodification management plan (HMP) strategies under the SQIP are incorporated into project design, monitored, and maintained.

The updated NPDES Phase 1 MS4 permit will require the use of LID/runoff reduction measures. The PUD Design Guidelines for the proposed project indicates the LID stormwater management techniques would be incorporated into a project design that would allow for localized and effective

water quality management, such as the integration of wetland habitat areas and stormwater detention ponds. This element would include restoration of an historic drainage swale to a functional wetland feature that runs through the eastern portion of the project site and drains to Morrison Creek. This open space area would include a 50-foot upland buffer and an on-site surface storm drainage swale that would flow through water quality basins into a stormwater detention basin. All of the runoff entering the swale would be subject either to active or passive treatment including the use of storm grates, bioswales, bioslopes, water quality basins, and other LID strategies. Modification and enhancement of an existing underground piped drainage system that conveys flows from off-site development through the project site is anticipated to include the use of the proposed detention basins in the project site, a type of passive treatment that is expected to improve runoff water quality. Another example of planned LID is the use of pervious paving techniques in parking areas. The alternate stormwater design (see Figure 2-4 in Chapter 2, Project Description), does not include the restoration of the wetland area, but includes detention basins and other passive and active water treatment elements and will be required to comply with the Phase 1 MS4 permit requirements.

As discussed above, compliance with the Sacramento-area Phase I NPDES Municipal Separate Storm Sewer System (Permit CAS082597) and implementation of the Design Manual, compliance with the City's Stormwater Management and Control Code, General Plan policies related to hydrology and water quality, and the State NPDES General Permit for Stormwater Discharges Associated with Construction and the associated SWPPP would all be required during construction and operation of the project. In addition, the project would be required to implement an ESC Plan, source and treatment control measures, and LID measures to reduce pollutants in storm water and non-stormwater discharges to the MEP. These are all currently accepted practices that would be required during construction and operation of the project to attain federal and state water quality standards in order to protect beneficial uses of local receiving waters.

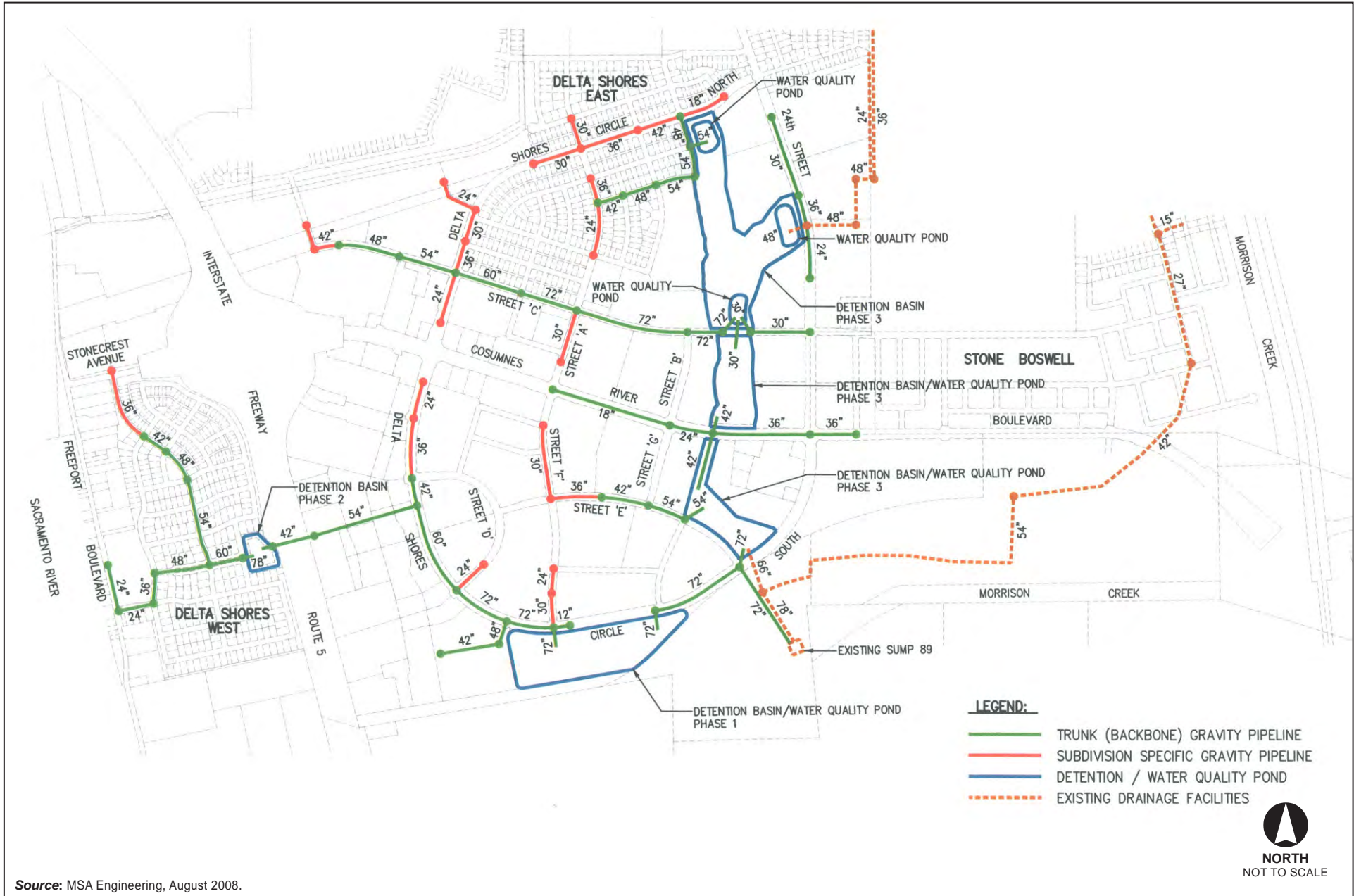
Therefore, because the project has incorporated all applicable local, state, and federal requirements into project design and the City of Sacramento will be responsible for ensuring compliance with these requirements, including new provisions of the revised MS4 permit pertaining to enhanced BMPs and LID, the proposed project would not violate water quality standards or degrade water quality. Impacts would be ***less than significant***.

Mitigation Measure

None required.

5.5-2 Implementation of the proposed project would result in an increase in the rate and amount of stormwater runoff that could exceed the capacity of the existing stormwater collection infrastructure.

The existing drainage system within Drainage Basin 89 was designed and constructed in the 1960s to convey surface water runoff from anticipated development within the Basin. The proposed project, as planned, would increase the amount of impervious surface area within Basin 89 due to the conversion of 782 acres of currently undeveloped land to urban land use. This would result in a substantial increase in stormwater runoff compared to existing conditions.



Source: MSA Engineering, August 2008.

FIGURE 5.5-1
Existing and Proposed Stormwater Drainage Facilities



OD5131100

Delta Shores

Based on the analysis of the SSWMM stormwater runoff model results for the proposed project, the project drainage facilities are designed to accommodate time based flows from the existing upstream development and the 49 percent increase in impervious surface area attributed to the project.

New drainage pipelines and manholes would be installed and sized to handle the runoff based on the City's design criteria. These new pipelines would, additionally, be sized to accommodate the runoff from the existing upstream developments, and vacant property in the area that could be developed in the future that discharge, or would discharge, into the proposed drainage system. Post-project stormwater runoff from the Delta Shores/Basin 89 drainage would flow through the upgraded pipeline network to one of two flood control and water quality detention basins located in the southern portion of the project site.

Under the preferred drainage system as described in Impact 5.5-1, the proposed detention basins east of I-5 would jointly serve as wet basins for water quality treatment and flood control detention. The detention basins would be sized to handle the greater of a 100-year 10-day or 100-year 24 hour rainstorm event, with a detention basin sized at approximately 50 acre-feet of lake storage (i.e., normal winter water level between storm events) and 200 acre-feet of detention storage. The basins will temporarily store stormwater runoff so as not to the pumping station capacity of Sump 89 which is approximately 145 cfs. The project also includes a small detention basin on the west side of I-5 to reduce peak flows.¹⁶

After storage and treatment in the detention/water quality basin, stormwater would flow into Pump Station 89's forebay and would be pumped into the Morrison Creek/Beach Lake. The existing pump station would be improved to handle the developed runoff generated from all upstream property discharging into the proposed detention basins. The design capacity of the retrofitted pump station would remain the same. The pump station would be configured so as to satisfy the City's current design requirements.

Therefore, the upgrade of the Basin 89 drainage system and pump station and the design and construction of the on-site detention basins that would be sized to handle runoff from the project site for the greater of a 100-year, 10-day or 100-year 24-hour storm event, would not create or contribute stormwater runoff that would exceed the capacity of existing or planned stormwater drainage systems. Therefore, impacts associated with increased stormwater runoff would be ***less than significant***.

Under the alternative drainage system (as described in Impact 5.5-1), the proposed wet and dry detention basins would jointly serve as water quality treatment and flood control detention. The detention basins would be sized to handle the greater of a 100-year 10-day or 100-year 24-hour rainstorm event. The detention basins have a cumulative volume of approximately 50 acre-feet of lake storage (i.e., normal winter water level between storm events) and a combined water quality and detention storage of approximately 200 acre-feet. The basins would temporarily store stormwater runoff so as not to exceed the pumping capacity of Sump 89 which is approximately 145 cfs. The project also includes a small detention basin on the west side of I-5 to reduce peak flows.

16 Barron Caronite, PE, M&H, email communication, July 31, 2008.

After storage and treatment in the detention/water quality basins, stormwater would flow into Pump Station 89's forebay and would be pumped into the Morrison Creek/Beach Lake. The existing pump station will be retrofitted to handle the developed runoff generated from all upstream property discharging into the proposed detention basins. The design capacity of the retrofitted pump station will remain the same. The pump station would be configured so as to satisfy the City's current design requirements.

Therefore, the upgrade of the Basin 89 drainage system and pump station and the design and construction of on-site detention basins that would be sized to handle runoff from the project site for the greater of a 100-year, 10-day or 100-year 24-hour storm event, would not create or contribute stormwater runoff that would exceed the capacity of existing or planned stormwater drainage systems. This would demonstrate consistency with the hydromodification management requirements of the revised NDPEs Phase 1 MS4 permit when it is adopted. Therefore, impacts associated with increased stormwater runoff would be *less than significant*.

Mitigation Measure

None required.

5.5-3 Implementation of the proposed project could expose people or property to risk of flooding from failure of a levee.

Flood control levees are constructed and maintained for a variety of reasons, including to protect human life, to provide flood protection, to protect private and public property, to protect historic structures and communities, to protect riparian and upland habitat, to promote interstate and intrastate commerce, to protect water quality in the state and federal water projects, and to protect recreational uses. The proposed project must comply with federal, state and local levee controls to prevent levee encroachments detrimental to levee maintenance, and to protect occupants from levee failure.

The storm-based analysis for the project predicts higher peak flows that could result in flooding problems in the Basin. As such, drainage facilities for the project would be sized to accommodate time based flows from the project and flows from existing upstream developed areas that flow into the basin, which would manage surface runoff and prevent flooding (see also Impact 5.5-2, above).

Exposure to Flood Hazard

The area within Basin 89 is protected from flooding by levees on the southern, western, and eastern boundaries with the western and southern boundaries providing 100-year level of protection. SAFCA has indicated that the currently designated A99 Zone would be revised to Shaded Zone X by 2012 and a levee wall near Franklin Boulevard would be constructed in 2008. A portion of the proposed project is located within the A99 Zone and would also be subject to the Shaded Zone X revision. Zone A99 is designated as a special flood hazard area to be protected from 100-year flood by a Federal flood protection system under construction. The Shaded Zone X designation is defined on FEMA flood insurance rate maps as areas of 500-year flood; areas of 100-year flood with

average depths of 1-foot or with drainage areas less than 1-square mile; and areas protected by levees from 100-year flood.

SAFCA also plans to fortify levees with 200-year protection in the project area, on the eastern side, north of Brookfield Road, and the surrounding Sacramento area.¹⁷ Additional levee improvements and safety measures in the project area include improving levee integrity of over 80 levees that have sustained critical erosion damage over the years. Flood Safe California, a strategic initiative to improve flood protection for the people of California, will build upon California's ongoing flood management work and included critical erosion levee repairs that were completed in 2007.

Project Development Near Existing Morrison Creek Levee

The project proposes developed land uses (commercial and residential) along the southern boundary of the project site, adjacent to the Morrison Creek levee. There would be a setback of at least 69 feet from the toe of the levee and the closest commercial/residential.¹⁸ There would be no earthwork or construction within that setback area. The proposed detention/water quality basin would be set back from the toe of the protecting levee a minimum of 50 feet.¹⁹

Therefore, existing levee protection, compliance with SAFCA's planning and maintenance of flood control levees, and future improvement of the levee within Basin 89 would reduce the potential exposure of people or property to flooding from failure of a levee, and the impact would be **less than significant**.

Mitigation Measure

None required.

5.5-4 Implementation of the proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or lowering of the local groundwater table level.

Groundwater is recharged by surface waters, local precipitation, and contributions from peripheral basins with groundwater levels generally higher closer to the surface waters. The proposed project is located within the approximate 248,000-acre South American Groundwater Subbasin. Groundwater recharge in the City of Sacramento and within the proposed project area primarily occurs within open space areas and within river and creek channels and has been measured at the project site at depths ranging from approximately 3 to 14 feet below ground level, with groundwater levels closest to the surface in the western portion of the project site, closer to the Sacramento River.²⁰ The

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- 17 Civil Engineering Solutions, *Delta Shores Development, Sacramento, California, Preliminary Drainage Study*, March 18, 2007. Job No. 2005.63, page 5.
- 18 Civil Engineering Solutions, *Delta Shores Development, Sacramento, California, Preliminary Drainage Study*, March 18, 2007. Job No. 2005.63, Figure 11.
- 19 Civil Engineering Solutions, *Delta Shores Development, Sacramento, California, Preliminary Drainage Study*, March 18, 2007. Job No. 2005.63, Figure 10.
- 20 Wallace-Kuhl & Associates, Inc., *Geotechnical Engineering Report, Delta Shores*, July 31, 2006, page 7.
-

western portion of the project site is within an area that borders a groundwater recharge zone (i.e., the Sacramento River).²¹

Existing soil conditions at the project site have characteristically slow infiltration rates and high to moderately high runoff potential. Implementation of the project would impede infiltration by adding impervious surface area over an area that is presently undeveloped. However, the approximately 782-acre site constitutes only 0.003 percent of the South American Groundwater Subbasin. Infiltration of surface water, particularly where pervious soils are located in open space areas within the Subbasin, would continue to facilitate groundwater recharge. Recharge would also continue to occur within river and creek channels within the approximate 248,000-acre Subbasin.

Further, runoff reduction control measures described in the Design Manual, as revised to meet the revised NPDES Phase 1 MS4 permit after its adoption by the SWRCB (see "Regulatory Setting"), would also be required as part of the project design to provide the opportunity for groundwater recharge, as well as to control runoff volume and water quality impacts. Runoff reduction control measures, one key element of LID design, includes, but are not limited to, replacing conventional impervious surfaces with pervious surfaces such as porous concrete/pavement, alternative driveways, disconnecting impervious surfaces by disconnecting pavement and roof drains, and planting more tree as interceptors. Implementation of landscaping alternatives to also facilitate recharge includes open space yards, streetscapes, road medians, and parking lot/sidewalk planters. Although the Design Manual (2007) encourages, but does not require the use of these LID measures, a LID evaluation would be prepared for the project to determine the technical and economic feasibility of increasing the use of these runoff reduction control measures. Constraining factors (soil type, security issues, zoning requirement conflicts, and public safety) may limit the feasibility of implementing specific LID measures and would be considered when assessing the use of LID measures for the project.

The proposed project would not rely on groundwater supply, and groundwater recharge would continue to occur within open space areas and within river and creek channels within the Sacramento Valley Groundwater Basin. Compliance with the Design Manual would provide the opportunity for groundwater recharge in the proposed project area to occur. Therefore, there would be no net deficit in aquifer volume or lowering of the local groundwater table level. Impacts would be ***less than significant***.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

Potential impacts on water quality and hydrology can be contributed to by development within the watershed area that exists not only within the city limits, but also outside of the city limits. The cumulative setting for water quality and hydrology considers development within the Sacramento River watershed. Cumulative impacts on storm drainage focus on the City's drainage systems.

21 County of Sacramento, *Sacramento County General Plan*, 1993.

5.5-5 Implementation of the proposed project, in combination with other development within the City, could result in an increase in the rate and amount of surface and/or stormwater runoff discharged to the City's drainage system, which could result in localized flooding.

The proposed project, in addition to other development in the city would increase the amount of impervious surfaces that would increase the rate and amount of stormwater runoff discharged to City drainage facilities. Increases in stormwater flows could result in localized flooding. This is considered a significant cumulative impact. As discussed under Impact 5.5-3, the proposed project includes development of an approximately 782-acre master planned community with a maximum of 5,092 residences and one large and one small mixed-use retail centers. The project would increase the amount of impervious surface by 49 percent over existing conditions and could likely increase the rate and volume of stormwater runoff into the City's drainage systems.

The proposed project drainage facilities would be sized to accommodate project flows and flows from existing development located upstream of the project site to manage surface runoff and prevent flooding. The two detention basins would be sized to handle the greater of a 100-year, 10-day or 100-year 24-hour rainstorm event, and would provide storage for approximately 50 acre-feet of lake storage and 200 acre feet of detention storage, which includes 50 acre-feet of water quality storage. The drainage system would be adequately sized to handle stormwater flows from the project site.

Therefore, the proposed project would reduce the impact of increased stormwater runoff or exceedance of infrastructure capacity and reduce the project's contribution to cumulative flooding impacts in the area *less than significant*.

Mitigation Measure

None required.

5.5-6 The proposed project, in combination with other development in the City, could result in the increased discharge of stormwater runoff containing urban pollutants, to local waterways which could adversely affect surface water quality in the lower Sacramento River watershed.

The proposed project, in combination with other development in the lower Sacramento River watershed, could increase urban runoff and potentially increase the concentrations of urban pollutants into the Sacramento River. As development within the watershed occurs, there could be an increase in the amount of groundwater activities and addition of impervious surface areas over existing conditions. Sediment and urban pollutants could be transported in stormwater runoff and non-stormwater runoff to nearby waterways including the Sacramento River.

The proposed project and other development projects in either the City or the County would be required to comply with the following permits and plans:

- Sacramento-area Phase I NPDES Municipal Separate Storm Sewer System Permit CAS082597,
- Stormwater Quality Design Manual for the Sacramento and South Placer Regions (Design Manual) including associated BMPs, and LID measures to reduce pollutants in storm water and non-stormwater discharges to the Maximum Extent Practicable (MEP),
- City of Sacramento Stormwater Management and Discharge Control Code,
- City of Sacramento General Plan policies related to hydrology and water quality, and the protection and preservation of natural resources,
- State NPDES General Permit for Stormwater Discharges Associated with Construction and associated SWPPP,
- Erosion and Sediment Control Plan,
- Post-Construction Stormwater Quality Plan.

Therefore, the project's contribution would not be considerable and cumulative impacts on water quality would be *less than significant*.

Mitigation Measure

None required.

5.5-7 The proposed project, in addition to development within the City, could expose people or property to risk of flooding from failure of a levee.

The City is protected by a series of flood control levees constructed and maintained for a variety of reasons, as described previously. The proposed project, in addition to development within the city, would increase people and property exposed to potential flooding as a result of failure of a levee. This is considered a significant cumulative impact.

The area within Basins 89 and G267 is protected from flooding by levees on the southern, western, and eastern boundaries with the western and southern boundaries providing 100-year level of protection. SAFCA has indicated that the currently designated A99 Zone would be revised to shaded Zone X by 2012 and a levee wall near Franklin Boulevard would be constructed in 2008. A portion of the proposed project is located within the A99 Zone and would also be subject to the shaded Zone X revision. Zone A99 is designated as a special hazard area to be protected from 100-year flood by Federal flood protection system under construction. SAFCA also plans to fortify levees to obtain 200-year protection for the city of Sacramento.²²

The proposed project drainage facilities/improvements would be set back from the toe of the protecting levee to allow for a 50-foot landward maintenance zone. A geotechnical analysis may also be initiated to discern any water seepage issues associated with the proximity of the

22 Sacramento Area Flood Control Agency, *Flood Watch*, Volume 7, Spring 2008.

construction of the proposed water quality detention basin to the protecting levee.²³ In addition, the proposed project must comply with federal, state and local levee controls to prevent levee encroachments detrimental to levee maintenance, and to protect occupants from levee failure.

Therefore, existing levee protection, compliance with SAFCA's planning and maintenance of flood control levees, and future improvement of the levee within Basin 89 would reduce the proposed project's contribution to exposure of people or property to flooding from failure of a levee to ***less-than-significant levels***.

Mitigation Measure

None required.

23 Civil Engineering Solutions, *Delta Shores Development, Sacramento, California, Preliminary Drainage Study*, March 18, 2007. Job No. 2005.63, page 16.

5.6 NOISE

INTRODUCTION

This section describes the existing noise environment in the area of the proposed project site and the potential of the proposed project to significantly increase noise levels due to project construction and operation.

Comments raised in response to the NOP that related to noise (see Appendix B) included a request for the project to conduct a noise level analysis for the proposed project and implement necessary mitigation to attenuate noise levels, if necessary. These concerns are addressed in this section.

The analysis included in this section was developed based on a field investigation to measure existing noise levels, a review of noise standards in the City of Sacramento 1988 General Plan, draft City of Sacramento 2030 General Plan, and noise assessment methodologies, including the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction model and others contained in the Federal Transit Administration's *Transit Noise and Impact Assessment* document. Traffic inputs for the noise prediction model were provided by the transportation consultant.

ENVIRONMENTAL SETTING

Characteristics of Sound, Noise, and Vibration

Sound

Sound is created when vibrating objects produce pressure variations that move rapidly outward into the surrounding air. The main characteristics of these air pressure waves are amplitude, which we experience as a sound's loudness, and frequency, which we experience as a sound's pitch. The standard unit of sound amplitude is the decibel (dB); it is a measure of the physical magnitude of the pressure variations relative to the human threshold of perception. The human ear's sensitivity to sound amplitude is frequency-dependent; it is more sensitive to sound with a frequency at or near 1000 cycles per second than to sound with much lower or higher frequencies.

Most "real world" sounds (e.g., a dog barking, a car passing, etc.) are complex mixtures of many different frequency components. When the average amplitude of such sounds is measured with a sound level meter, it is common for the instrument to apply different adjustment factors to each of the measured sound's frequency components. These factors account for the differences in perceived loudness of each of the sound's frequency components relative to those that the human ear is most sensitive to (i.e., those at or near 1000 cycles per second). This practice is called "A-weighting." The unit of A-weighted sound amplitude is also the decibel. However, when reporting measurements to which A-weighting has been applied, an "A" is appended to dB (i.e., dBA) to make this clear. Table 5.6-1 lists representative environmental sound levels.

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 1000 feet	105	
	—100—	
Gas Lawnmower at 3 feet	95	
	—90—	
	85	Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime	75	
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area	65	Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
	55	Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
	45	
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime	35	
	—30—	Library
Quiet Rural Area during Nighttime	25	Bedroom at Night, Concert Hall (background)
	—20—	
	15	Broadcast/Recording Studio
	—10—	
	5	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

Source: California Department of Transportation, Noise, Air Quality, and Hazardous Waste Management Office, *Technical Noise Supplement*, October 1998, page 18.

Noise

Noise is the term generally given to the “unwanted” aspects of intrusive sound. Many factors influence how a sound is perceived and whether or not it is considered annoying to a listener. These include the physical characteristics of a sound (e.g., amplitude, frequency, duration, etc.), but also non-acoustic factors (e.g., the acuity of a listener’s hearing ability, the activity of the listener during exposure, etc.) that can influence the judgment of listeners regarding the degree of “unwantedness” of a sound.

All quantitative descriptors used to measure environmental noise exposure recognize the strong correlation between the high acoustical energy content of a sound (i.e., its loudness and duration) and the disruptive effect it is likely to have as noise. Because environmental noise fluctuates over time, most such descriptors average the sound level over the time of exposure, and some add “penalties” during the times of day when intrusive sounds would be more disruptive to listeners. The most commonly used descriptors are:

Equivalent Energy Noise Level (L_{eq}) is the constant noise level that would deliver the same acoustic energy to the ear of a listener as the actual time-varying noise over the same exposure time. No “penalties” are added to any noise levels during the exposure time; L_{eq} would be the same regardless of the time of day during which the noise occurs.

Day-Night Average Noise Level (L_{dn}) is a 24-hour average L_{eq} with a 10 dBA “penalty” added to noise levels during the hours of 10:00 p.m. to 7:00 a.m. to account for increased sensitivity that people tend to have to nighttime noise. Because of this penalty, the L_{dn} would always be higher than its corresponding 24-hour L_{eq} (e.g., a constant 60 dBA noise over 24 hours would have a 60 dBA L_{eq} , but a 66.4 dBA L_{dn}).

Community Noise Equivalent Level (CNEL) is an L_{dn} with an additional 5 dBA “penalty” for the evening hours between 7:00 p.m. and 10:00 p.m.

Community noise exposures are typically represented by 24-hour descriptors, such as a 24-hour L_{eq} or L_{dn} . One-hour and shorter-period descriptors are useful for characterizing noise caused by short-term activities, such as the operation of construction equipment.

Environmental noise levels in residential areas are generally considered low when the L_{dn} is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of settings with low daytime background noise levels are isolated, natural settings where noise levels can be as low as 20 dBA L_{eq} , or quiet, suburban, residential areas far from busy streets where daytime noise levels can be around 40 dBA L_{eq} . Residential structures are routinely designed to limit interior noise levels to 45 dBA L_{dn} or less to reduce the potential for sleep disruption. In general, the higher the L_{dn} in a residential area, the greater the proportion of residents who report themselves “highly annoyed” with their noise exposure; and for a set increase in L_{dn} , the proportion of resident’s in the “highly annoyed” category increases faster at higher L_{dn} s than at lower L_{dn} s.¹

Noise levels from a particular source decline as distance to a receptor increases. The weather and even the makeup of intervening terrain can also help intensify or reduce noise levels at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically “hard” locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically “soft” locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures, such as a row of buildings, a solid wall, or a berm located between the receptor and the noise source. California homes built prior to 1970 generally provide an exterior-to-interior noise level reduction up to about 20 dB with closed windows. Homes built within the last 30 years generally provide an exterior-to-interior reduction up to about 30 dB with closed windows.

Ground-borne Vibration

Vibrating objects in contact with the ground radiate energy. If a vibrating object is massive enough and/or close enough to an observer, its vibrations are perceptible. Vibration magnitude is measured in vibration decibels (VdB) relative to a reference level of 1 micro-inch per second, the human

1 Federal Transit Administration, *Transit Noise and Vibration Impact Exposure*, May 2006, Chapter 3 and Appendix B.

threshold of perception. The background vibration level in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans, which is around 65 VdB. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where damage can occur in fragile buildings. Common vibration sources and the human and structural response to ground-borne vibration are illustrated in Table 5.6-2.

Human/Structural Response	Velocity Level (VdB)	Typical Sources (50 feet from source)
Threshold, minor cosmetic damage to fragile buildings	—100—	Blasting from construction projects
	95	Bulldozers and other heavy tracked construction equipment
Difficulty with tasks such as reading a VDT screen	—90—	
	85	High speed rail, upper range
Residential annoyance, infrequent events (e.g. commuter rail)	—80—	Rapid transit, upper range
		High speed rail, typical
Residential annoyance, frequent events (e.g. rapid transit)		Bus or truck over bump
	—70—	
Limit for vibration sensitive equipment/ Approximate threshold for human perception of vibration		
		Bus or truck, typical
	—60—	
	55	Typical background vibration
	—50—	
Source: U.S. Department of Transportation Federal Railroad Administration, <i>High-Speed Ground Transportation Noise and Vibration Impact Assessment</i> , October 2005, pages 6-7.		

Accurate estimates of ground-borne vibration are complicated due to the many factors that influence vibration levels at potential receivers. Main factors that have significant effects on levels of ground-borne vibration are:

Geology: Soil conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Experience has shown that vibration propagation is more efficient in clay soils as well as areas with shallow bedrock. The latter condition seems to channel or concentrate the vibration energy close to the surface, resulting in ground-borne vibration problems at large distances from the source. Factors such as layering of the soil and depth to water table can also have significant effects on the propagation of ground-borne vibration.

Receiving Building: Ground-borne vibration problems occur almost exclusively inside buildings. Therefore, the characteristics of the receiving building are a key component in the evaluation of

ground-borne vibration. Vibration may be perceptible to people who are outdoors, but it is very rare for outdoor vibration to cause complaints. The vibration levels inside a building depend on the vibration energy that reaches the building foundation, the coupling of the building foundation to the soil, and the propagation of the vibration through the building structure. The general guideline is that the more massive a building is, the lower its response to incident vibration energy in the ground.²

Existing Conditions

Existing Noise-Sensitive Receptors

Some land uses are more sensitive to noise than others. These sensitive uses are commonly referred to as “sensitive receptors,” and normally include residences, hospitals, churches, libraries, schools, and retirement homes. Noise sensitive land uses are typically given special attention because activities at these uses require relatively quiet environments.

Existing sensitive land uses near the project site include: the Meadowview and North Delta Shores residential neighborhoods immediately north of the project site; three schools north of the project site: St. Anne Catholic School (the closest school building is approximately 650 feet north of the project site), John Still Elementary School (the closest school building is approximately 600 feet north of the project site), and newly-constructed elementary school (the closest school building is approximately 400 feet north of the project site); and the residences located in the Town of Freeport, immediately west of the project site. See Figure 5.6-1 for the locations of these sensitive land uses in relation to the project site.

The schools are separated from the project site by an open space/playing field area and Meadowview Park. While the open space areas and park are immediately adjacent to the project site, the school buildings are approximately 400 to 650 feet north of the project site. The North Delta Shores neighborhood is located adjacent to the northern boundary of the project site immediately east of Interstate 5 (I-5). This neighborhood has been completed within the past five years using newer construction materials and techniques which would have a greater exterior-to-interior noise reduction. The existing Meadowview neighborhood, which is also adjacent to the northern boundary of the project site on its eastern side, consists of older homes that have been constructed within the past 30 years. These homes are still expected to experience an exterior-to-interior noise reduction similar to the North Delta Shores neighborhood since they were both built within the past 30 years, however, the more recently built homes may benefit from more efficient construction techniques and materials.

The Town of Freeport in unincorporated Sacramento County consists of homes and businesses located on either side of Highway 160, between the Sacramento River and the western portion of the proposed project site. Residential homes are intermixed between commercial, hotel, and restaurant uses. Many of these residences back up to the proposed project site and would be exposed to construction and operational noise. Some of these homes were built as early as the 1920s and

2 U.S. Department of Transportation, Federal Railroad Administration, *High-Speed Ground Transportation Noise and Vibration Impact Assessment*, October 2005, pages 6-7.

would be sensitive to an increase in temporary and ambient noise levels due to older construction techniques and materials used for insulation.

The Sacramento Regional County Sanitation District (SRCSD) operates its treatment plant and maintains the bufferlands on 2,500 acres south of the project site. East of the project site is fallow agricultural land that is currently undeveloped. There are residential neighborhoods further east across Morrison Creek, but these uses are over 2,000 feet from the project site. Areas northeast of the project site (i.e., areas around Mack Road, Franklin Boulevard, and Cosumnes River Boulevard) consist mostly of residential neighborhoods that range from older construction to newer construction with sound walls scattered along different parts of those roadways.

Existing Ambient Daytime Noise Levels

The scientific instrument used to measure noise is a sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA.

Existing ambient daytime noise levels were measured at six selected locations over 15 minute periods in and around the project site on May 3, 2007. These locations are identified in Figure 5.6-1. The noise levels were measured using a Larson-Davis Model 720 precision sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. The average noise levels and sources of noise measured at each location are identified in Table 5.6-3. At each monitoring location, the primary source of noise was the nearest roadway.

Noise Measurement Location	Primary Noise Sources	Noise Level Statistics		
		L _{eq}	L _{min}	L _{max}
(1) – 8050 Freeport Boulevard	Traffic along Freeport Boulevard	71.5	48.2	92.2
(2) – 8045 Franklin Boulevard and Becket Way	Traffic along Franklin Boulevard and Becket Way	70.1	53.2	82.8
(3) – 7945 Detroit Boulevard	Ambient noise; aircraft overhead	52.9	44.1	72.2
(4) – 7798 24th Street and Laramore Way	Traffic along 24th Street (no traffic from Laramore Way)	58.0	48.3	79.5
(5) – 7660 Manorside Drive and Monarch Avenue	Traffic along Manorside Drive and Monarch Avenue	60.1	50.1	78.0
(6) – Between 2113 and 2121 Meadowview Road	Traffic along Meadowview Road	73.5	57.4	87.2
* 1200 feet west of I-5 ²	Traffic on I-5 (AM peak hour)	61.6	54.5	68.7
* 1200 feet west of I-5 ²	Traffic on I-5 (PM peak hour)	54.1	45.4	79.0

Notes:
 1. Monitoring was conducted between 3:45 p.m. and 6:30 p.m. on May 3, 2007.
 2. Monitoring was conducted on April 18, 2007 through April 19, 2007 during the AM and PM peak hours.
 Source: PBS&J, 2007.



FIGURE 5.6-1
Noise Monitoring Locations

D51311.00

Delta Shores

Existing Roadway Noise

The project site is located in the southernmost portion of the city and is bisected by I-5, which is a major north/south route that connects the Los Angeles and San Diego metropolitan areas to northern California. Approximately 14,000 trucks travel along I-5 through the project site every day.³ The noise generated by I-5 traffic is detectable as far away as 24th Street and Laramore Way (identified as noise location 4 on Figure 5.6-1). There is an existing overpass along I-5 in the western portion of the project site that connects Stone Creek Avenue west of I-5 to a levee access road east of I-5. Currently there is no access from I-5 to this overpass and it only provides access for local traffic to cross I-5. This overpass is proposed to be reconstructed as part of the Cosumnes River Boulevard project in order to provide access from I-5 and to connect to the future Cosumnes River Boulevard extension. On this portion of I-5 there is a fairly heavy volume of traffic that operates throughout the day, especially during commute hours.

Existing Ground-borne Vibration

Usually, the most likely existing source of ground-borne vibration at a project site is roadway truck and bus traffic. Trucks and buses typically generate ground-borne vibration velocity levels of around 63 VdB, but could reach 72 VdB where trucks and buses pass over bumps in the road. Loaded trucks can create even higher levels of VdB. The site is currently undeveloped so there is no bus or truck traffic. The only source of ground-borne vibration near the project site is I-5. As discussed above, truck traffic is heavy on I-5.

Regulatory Context

The following guidance from federal and state agencies, and from the California Code of Regulations, the City of Sacramento General Plan, and the City of Sacramento Municipal Code are applicable to the proposed project.

Federal

The Federal Noise Control Act (1972) addressed the issue of noise as a threat to human health and welfare, particularly in urban areas. In response to the Noise Control Act, the Environmental Protection Agency (EPA) published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*.⁴ Table 5.6-4 summarizes EPA recommendations for residential and other noise-sensitive land uses (i.e., that yearly average L_{eq} not exceed 70 dBA or less to prevent measurable hearing loss over a lifetime; and that L_{dn} not exceed 55 dBA outdoors and 45 dBA indoors to prevent activity interference and annoyance). The EPA intent was that these findings not necessarily be considered as standards, criteria, or regulatory goals, but as advisory exposure levels below which there is no reason to suspect that the general population would be at risk from any of the identified health or welfare effects of noise.

3 California Department of Transportation, Traffic and Vehicle Data Systems Unit, *2005 Annual Average Daily Truck Traffic on the California State Highway System*, November 2006.

4 U.S. Environmental Protection Agency, Office of Noise Abatement and Control, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974.

Effect	Level	Area
Hearing	L_{eq} (24 hr.) < 70 dBA ¹	All areas
Outdoor activity interference and annoyance	L_{dn} < 55 dBA	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
Outdoor activity interference and annoyance	L_{eq} (24 hr) < 55 dBA	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	L_{dn} < 45 dBA	Indoor residential areas
Indoor activity interference and annoyance	L_{eq} (24 hr) < 45 dBA	Other indoor areas with human activities such as schools, etc.

Note:
 1. Noise exposure at the identified level would have to continue over a period of forty years before any hearing loss would result.
 Source: U.S. Environmental Protection Agency, Office of Noise Abatement and Control, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974.

The EPA Levels report also identified 5 dBA as an adequate margin of safety before an increase in noise level would produce a significant increase in the severity of community reaction (i.e., increased complaint frequency, annoyance percentages, etc.) provided that the existing baseline noise exposure did not exceed 55 dBA L_{dn} .

The Federal Transit Administration (FTA) has also developed criteria for judging the significance of ground-borne vibration, as shown in Table 5.6-5.

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch/second)		
	Frequent Events ¹	Occasional Events ²	Infrequent Events ³
<i>Category 1:</i> Buildings where vibration would interfere with interior operations.	65 ⁴	65 ⁴	65 ⁴
<i>Category 2:</i> Residences and buildings where people normally sleep.	72	75	80
<i>Category 3:</i> Institutional land uses with primarily daytime uses.	75	78	83

Notes:
 1. "Frequent Events" is defined as more than 70 vibration events of the same source per day.
 2. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
 3. "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.
 4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.
 Source: Federal Transit Administration, *Transit Noise Impact and Vibration Assessment*, May 2006.

State

California General Plan Guidelines

The 2003 *State of California General Plan Guidelines* promotes use of the L_{dn} or CNEL descriptors for evaluating land use and noise compatibility. Denotation of a land use as "normally acceptable" implies that the highest noise level in that band is the maximum desirable to assure an acceptable

indoor noise level in buildings that do not incorporate any special acoustic insulation features. The *Guidelines* also provide an interpretation as to the suitability of various types of construction with respect to the range of outdoor noise exposure. The objective of the *Guidelines* is to provide local communities with a means of judging the noise environment it deems to be generally acceptable while recognizing the variability in perceptions of environmental noise that exist between communities and within a given community.

Title 24

Title 24 of the California Code of Regulations codifies Sound Transmission Control requirements, which establishes uniform minimum noise insulation performance standards for new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings. Specifically, Title 24 states that interior noise levels attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room of new dwellings. Dwellings are required to be designed so that interior noise levels will meet this standard for at least 10 years from the time of building permit application. Because the proposed project would construct a variety of multi-family residential units, Title 24 would apply. Title 24 would not apply to the detached single-family residential units that would be constructed as part of the proposed project.

Local

City of Sacramento 1988 General Plan

The California Government Code requires that a noise element be included in the general plan of each county and city in the state. The purpose of the noise element is to ensure that noise control is incorporated into the planning process. The noise element can help city planners achieve and maintain consistent noise levels for existing and proposed land uses. The City of Sacramento 1988 General Plan does not have a stand-alone Noise Element. Instead, goals, policies, and information related to noise are included in the Health and Safety element of the General Plan. This element establishes maximum acceptable interior and exterior noise level criteria for new single-family development, multi-family development, schools, and libraries. These City standards are shown in Figures 5.6-2a and 5.6-2b. The land use compatibility standards presented in Figure 5.6-2a are very similar to those in the State *General Plan Guidelines*, the only difference being the lack of overlap in the compatibility categories.

The General Plan specifies a maximum interior noise level in residential uses of 45 dB L_{dn} and a maximum exterior noise level of 60 dB L_{dn} ; the exterior standard also applies to rear yards for single-family development and in common outdoor use areas in multi-family development. In addition, the General Plan stipulates maximum interior instantaneous noise levels of 50 dBA in bedrooms and 55 dBA in other habitable rooms. There are no standards in the General Plan specifically for commercial and retail uses; however there is a 65 dBA L_{dn} exterior standard for commercial office buildings. Applicable policies from the draft Sacramento 2030 General Plan are listed below.

Each goal in the existing General Plan is implemented by a number of corresponding policies. The applicable goals and policies are listed below:

Goal A Future development should be compatible with the projected year 2016 noise environment.

Policies

1. Require an acoustical report for any project which would be exposed to noise levels in excess of those shown as normally acceptable in Figure 3. The contents of the acoustical report shall be as described in the Noise Assessment Report Guidelines. No acoustical report shall be required where City staff has an existing acoustical report on file which is applicable.
2. Require mitigation measures to reduce noise exposure to the "Normally Acceptable Levels" (Figure 3) except where such measures are not feasible. It is recognized that there are many areas within the City for which it is not feasible to provide further noise mitigation. It is also recognized that some projects, because of their location, design, or size may not be able to incorporate mitigation measures that are feasible for larger projects or for projects in different locations. Specifically, around McClellan Air Force Base, there are areas where the noise contours indicate that it may be clearly infeasible to achieve the "Normally acceptable" noise level. Projects in these areas may be allowed to exceed the maximum acceptable noise level. However, each project shall be subject to mitigation measures to the maximum extent feasible.
3. Land uses proposed where the exterior noise level would be below the "normally acceptable" limit may be approved without any requirement for interior or exterior mitigation measures.

Where the exterior noise is below the "normally acceptable" limit, it is assumed that any buildings involved are of normal conventional construction without any special interior noise provisions. This will, under normal circumstances, provide an acceptable interior noise level.

"Maximum acceptable" interior noise levels have not been established for land use categories in Figure 3. The types of interior use in these categories vary substantially. As a general rule, acceptable noise mitigation will be that which provides for interior noise levels comparable to the noise levels that would exist in buildings where the exterior noise is below the "normally acceptable" standard.

Goal C Eliminate or minimize the noise impacts of future development on existing land uses in Sacramento.

Policies

1. Review projects that may have noise generation potential to determine what impact they may have on existing uses. Additional acoustical analysis may be necessary to mitigate identified impacts.

There are areas of the City which are considered relatively quiet (ambient levels below "normally acceptable" noise levels). While new development in these areas might not cause the "normally acceptable" noise level for existing development to be exceeded, it is recognized that such new development might cause an increase in ambient noise considered significant in terms of impacts on existing uses.

Enforce the Sacramento Noise Ordinance as the method to control noise from sources other than transportation sources.

Goal D Reduce noise levels in areas where noise exposure presently exceeds the standards established in Figure 3.

Policies

2. Encourage the incorporation of the latest noise control technologies in all projects.

City of Sacramento 2030 General Plan

The City is in the process of preparing a new General Plan and it is anticipated that the new General Plan will be adopted sometime in late 2008 or early 2009. Therefore, applicable policies from the draft 2030 General Plan are included below.

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE L _{dn} OR CNEL db					
	55	60	65	70	75	80
Residential	////		////))))))	+++++
Transient Lodging – Motels, Hotels	////		////))))))	+++++
Schools, Libraries, Churches, Hospitals, Nursing Homes	////		////))))))	+++++
Auditoriums, Concert Halls, amphitheatres	////		////		+++++	
Sports Arena, Outdoor Spectator Sports	////		////		+++++	
Playgrounds, Neighborhood Parks	////		////))))))	+++++
Golf Courses, Riding Stables, Water Recreation, Cemeteries	////		////))))))	+++++
Office Buildings, business Commercial and Professional	////		////))))))	
Industrial Manufacturing, Utilities Agriculture	////		////))))))	

INTERPRETATION

////	NORMALLY ACCEPTABLE))))))	NORMALLY UNACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise requirements		New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.	
\\\\\\\\\\\\\\\\	CONDITIONALLY ACCEPTABLE	+++++	CLEARLY UNACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.		New construction or development clearly should not be undertaken.	

Source: Sacramento General Plan, 1988.



FIGURE 5.6-2A
Land Use Compatibility for Community Noise Environments

Applicable Area

Noise Source	Land Use	Interior	Exterior	Statement Requirements	Noise Element Requirements
Traffic or fixed source (Industrial, plants, etc.)	Single Family	X	X	None	$L_{dn} < 45 \text{ dB}^2$
	Single Family		X	None	$L_{dn} \leq 60 \text{ dB}$ in backyards
	Multi-Family ¹	X		$L_{dn} < 45 \text{ dB}$	$L_{dn} < 45 \text{ dB}$
	Multi-Family		X	None	$L_{dn} \leq 60 \text{ dB}$ in common outdoor use areas
	Schools	X		None	Noisiest hourly $L_{eq} \leq 40 \text{ dB}$ during school day
	Schools		X	None	$L_{dn} \leq 60 \text{ dB}$
	Libraries	X		None	Noisiest hour $L_{eq} \leq 45 \text{ dB}$
	Libraries		X	None	None
Aircraft	Single-Family	X		None	$L_{dn} \leq 45 \text{ dB}$ and maximum instantaneous levels of $\leq 50 \text{ dBA}$ in bedrooms and $\leq 55 \text{ dBA}$ in other habitable rooms ²
	Single-Family		X	CNEL $\leq 65 \text{ dB}$ (State Aeronautics Noise Standards) requirement does not apply to Mather and McClellan's AFB's	CNEL $\leq 60 \text{ dB}$ for Metro Airport CNEL $\leq 65 \text{ dB}$ for all others
	Multi-Family	X		$L_{dn} \leq 45 \text{ dB}$	$L_{dn} \leq 45 \text{ dB}$ and maximum instantaneous levels of $\leq 50 \text{ dBA}$ in bedrooms and $\leq 55 \text{ dBA}$ in other habitable rooms ²
	Multi-Family		X	CNEL $\leq 65 \text{ dB}$ (State Aeronautics Noise Standards) requirement does not apply to Mather and McClellan's AFB's	CNEL $\leq 60 \text{ dB}$ for Metro Airport CNEL $\leq 65 \text{ dB}$ for all others
	Schools	X		None	Noisiest hourly $L_{eq} \leq 40 \text{ dB}$ during school day
	Schools		X	CNEL $\leq 65 \text{ dB}$ (State Aeronautics Noise Standards) requirement does not apply to Mather and McClellan's AFB's	CNEL $\leq 60 \text{ dB}$ for Metro Airport CNEL $\leq 65 \text{ dB}$ for all others
	Libraries	X		None	Noisiest hour $L_{eq} \leq 45 \text{ dB}$
	Libraries		X	None	None
Rail Traffic	Single-Family	X		None	$L_{dn} \leq 45 \text{ dB}$ and maximum instantaneous levels of $\leq 50 \text{ dBA}$ in bedrooms and $\leq 55 \text{ dBA}$ in other habitable rooms ²
	Single-Family		X	None	$L_{dn} \leq 60 \text{ dB}$
	Multi-Family	X		$L_{dn} \leq 45 \text{ dB}$ unless there are less than 4 trains per day between 7:00 a.m. and 10:00 p.m. and there are no trains between 10:00 p.m. and 7:00 a.m.	$L_{dn} \leq 45 \text{ dB}$ and maximum instantaneous levels of $\leq 50 \text{ dBA}$ in bedrooms and $\leq 55 \text{ dBA}$ in other habitable rooms ²
	Multi-Family		X	None	$L_{dn} \leq 60 \text{ dB}$
	Schools	X		None	Noisiest hourly $L_{eq} \leq 40 \text{ dB}$ during school day
	Schools		X	None	Maximum instantaneous levels $\leq 85 \text{ dBA}$
	Libraries	X		None	Noisiest hour $L_{eq} \leq 45 \text{ dB}$
	Libraries		X	None	None

1 Multi-family includes hotel, motel, apartment houses, and dwellings other than detached single-family dwellings as defined by title 24, Part 2, California Administrative Code.
 2 The requirement for interior noise exposure is triggered when the exterior L_{dn} exceeds 60 dB.
 3 Projects for which U.S. Department of HUD financing is requested are subject to HUD noise requirements. The noise element requirements listed in this table are at least as stringent as the HUD requirements.

Source: Sacramento General Plan, 1988.



FIGURE 5.6-2B
Maximum Acceptable Interior and Exterior Noise Levels for New Development without Mitigation

0D5131100

Delta Shores

Policies

EC 3.1.1 **Exterior Noise Standards.** The City shall require noise mitigation for all development where the projected exterior noise levels exceed those shown in Table EC 1, to the extent feasible.

TABLE EC 1	
EXTERIOR NOISE COMPATIBILITY STANDARDS FOR VARIOUS LAND USES	
Land Use Type	Highest Level of Noise Exposure That is Regarded as "Normally Acceptable"^a (L_{dn}^b or CNEL^c)
Residential—Low Density Single Family, Duplex, Mobile Homes	60 dBA ^{d,e}
Residential—Multi-family	65 dBA
Urban Residential Infill ^f and Mixed-Use Projects ^h	70 dBA
Transient Lodging—Motels, Hotels	65 dBA
Schools, Libraries, Churches, Hospitals, Nursing Homes	70 dBA
Auditoriums, Concert Halls, Amphitheaters	Mitigation based on site-specific study
Sports Arena, Outdoor Spectator Sports	Mitigation based on site-specific study
Playgrounds, Neighborhood Parks	70 dBA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75 dBA
Office Buildings—Business, Commercial and Professional	70 dBA
Industrial, Manufacturing, Utilities, Agriculture	75 dBA
Notes:	
a. As defined in the <i>Guidelines</i> , "Normally Acceptable" means that the "specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements."	
b. L_{dn} or Day Night Average Level is an average 24-hour noise measurement that factors in day and night noise levels.	
c. CNEL or Community Noise Equivalent Level measurements are a weighted average of sound levels gathered throughout a 24-hour period.	
d. dBA or A-weighted decibel scale is a measurement of noise levels.	
e. The exterior noise standard for the residential area west of McClellan Airport known as McClellan Heights/Parker Homes is 65 dBA.	
f. With land use designations of Central Business District, Urban Neighborhood (Low, Medium, or High) Urban Center (Low or High), Urban Corridor (Low or High).	
g. All mixed-use projects located anywhere in the City of Sacramento.	
Source: Governor's Office of Planning and Research, <i>State of California General Plan Guidelines 2003</i> , October 2003.	

EC 3.1.2 **Exterior Incremental Noise Standards.** The City shall require mitigation for all development that increases existing noise levels by more than the allowable increment as shown in Table EC 2, to the extent feasible.

TABLE EC 2			
EXTERIOR INCREMENTAL NOISE IMPACT STANDARDS FOR NOISE-SENSITIVE USES (DBA)			
Residences and buildings where people normally sleep^a		Institutional land uses with primarily daytime and evening uses^b	
Existing L_{dn}	Allowable Noise Increment	Existing Peak Hour L_{eq}	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0
Notes:			
a. This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.			
b. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.			
Source: Federal Transit Administration, <i>Transit Noise Impact and Vibration Assessment</i> , May 2006.			

- EC 3.1.3 **Interior Noise Standards.** The City shall require new development to include noise mitigation to assure acceptable interior noise levels appropriate to the land use type: 45 dBA Ldn for residential, transient lodgings, hospitals, nursing homes and other uses where people normally sleep; and 45 dBA Leq (peak hour) for office buildings and similar uses.
- EC 3.1.4 **Interior Noise Standards for Single Events.** The City may require new development in areas subject to frequent, high-noise events (such as aircraft over-flights and trains) to meet the following interior noise standards during single noise events: 50 dBA SEL in bedrooms and 55 dBA SEL in other habitable rooms. In areas where high-noise events are especially frequent (e. g., near major truck routes), the City can require a more stringent standard of 45 dBA SEL in bedrooms unless it is demonstrated that sleep disturbance can be kept within acceptable limits at 50 dBA SEL).
- EC 3.1.5 **Operational Noise.** The City shall require mixed-use, commercial, and industrial projects to mitigate operational noise impacts to adjoining sensitive uses when operational noise thresholds are exceeded.
- EC 3.1.6 **Compatibility with Park and Recreation Uses.** The City shall limit the hours of operation for parks and active recreation areas in residential areas to minimize disturbance to residences.
- EC 3.1.7 **Construction Noise.** The City shall require development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses, to the extent feasible.
- EC 3.1.8 **Alternatives to Sound Walls.** The City shall encourage the use of design strategies and other noise reduction methods along transportation corridors in lieu of sound walls to mitigate noise impacts and enhance aesthetics.

Sacramento Municipal Code

The Sacramento Municipal Code also contains regulations concerning noise. These noise regulations are found in Title 8 – Health and Safety, Chapter 8.68 – Noise Control. Of the regulations in Chapter 8.68, not all are applicable to the proposed project. Of the applicable regulations, Section 8.68.060 sets standards for cumulative exterior noise levels at residential and agricultural properties. Section 8.68.060 exempts certain activities from Chapter 8.68, including “noise sources due to the erection (including excavation), demolition, alteration or repair of any building or structure” as long as these activities are limited to between the hours of 7 a.m. and 6 p.m. Monday through Saturday, and between the hours of 9 a.m. and 6 p.m. on Sunday. Section 8.68.060 also requires the use of exhaust and intake silencers for internal combustion engines, and provides for construction work to occur outside of the designated hours if the work is of urgent necessity and in the interest of public health and welfare for a period not to exceed three days.

Airport/Meadowview Community Plan

There are no goals, policies, or objectives in the Airport/Meadowview Community Plan related to noise that apply to the proposed project. As part of the 2030 General Plan the Airport /Meadowview Community Plan will also be updated and renamed the South Area Community Plan.

South Area Community Plan

There is one policy under the draft South Area Community Plan that addresses noise issues in this area of the City.

- SA.EC 1.3 **Noise Mitigation for Transportation Facilities.** The City shall consider the installation of noise barriers adjacent to residential areas along I-5 and the Union Pacific Railroad tracks.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The analysis in this section focuses on the nature and magnitude of the change in the noise environment associated with implementation of the proposed project. The primary temporary or short-term source of noise associated with the project would be construction activities. Construction noise could affect existing receptors, as well as possibly affecting newly created receptors. Permanent noise increases could be generated by an increase in traffic volumes associated with project-related trips. Secondary sources of noise would include the heating, ventilation, and air conditioning units that would be part of the proposed project. The net increase in noise levels associated with these activities and sources have been quantitatively estimated using methods discussed below. The levels are then compared to applicable noise standards and thresholds of significance.

Construction Noise

Construction noise was analyzed using data compiled by the U.S. EPA that lists typical noise levels at 50 feet for construction equipment and various construction activities. Construction noise was then calculated for various distances using equations defined by the FTA. Similarly, vibration from construction was evaluated using vibration reference data for common construction equipment and impact prediction equations from the FTA.

This section assumes that pile driving would not be included in any construction activities related to the proposed project because there are no high-rise structures proposed under the project that would require a pile driver.

Project-Related Traffic Noise

Analyses of existing and future noise environments were based on noise level monitoring and noise prediction modeling. Traffic noise levels from the I-5 freeway were modeled using the FHWA Traffic Noise Model Version 2.5 (TNM), while for local roads far from I-5 a simplified spreadsheet was used based on the FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise Emission Levels (CALVENO); Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. Traffic volumes used as data inputs in the TNM model were provided by the project traffic engineer. The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. Results from noise modeling are contained in Appendix H. The noise modeling results were confirmed by noise measurements taken in the field. Six sensitive receptor locations were chosen where traffic volumes were expected to increase due to the proposed project: 8050 Freeport Boulevard, 8045 Franklin Boulevard, 7945 Detroit Boulevard, 7798 24th Street, 7660 Manorside Drive, and between 2113 and 2121 Meadowview Road. An additional noise reading was performed approximately 1,200 feet west of I-5 during the AM and PM peak hour. See Table 5.6-3 for the results of these readings.

The City of Sacramento currently has a 45 dB L_{dn} interior noise standard and a 60 dB L_{dn} exterior noise standard. Attainment of the 45 dB L_{dn} interior noise standard can be achieved through stringent design standards such as those contained in Title 24. Because of its proximity to traffic on I-5, attainment of the 60 dB L_{dn} exterior noise standard would require mitigation that may be infeasible or impractical. According to Figure 5.6-2a, the City of Sacramento General Plan contains land use compatibility categories for community noise level exposure. For residential land uses, community noise exposure levels between 60 and 70 dB L_{dn} are conditionally acceptable. Under conditionally acceptable noise levels, new construction or development should only be undertaken after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. For this analysis, the City's current 45 dB L_{dn} interior noise standard and the conditionally acceptable 65 dB L_{dn} , is used to assess the significance of impacts. In addition, impacts are also evaluated using the City's proposed draft Sacramento 2030 General Plan policies in the event the City adopts the new General Plan prior to the project being reviewed and considered for approval.

Standards of Significance

For the purposes of this EIR, impacts on noise are considered significant if the proposed project would:

- result in exterior noise levels in the project area that are above the upper value of the normally acceptable category for various land uses due to the project's noise level increases;
- result in residential interior noise levels of L_{dn} 45 dB or greater caused by noise level increases due to the project;
- generate construction noise levels that exceed the standards in the City of Sacramento Noise Ordinance;
- expose existing, adjacent and/or planned residential and commercial structures to vibration peak particle velocities greater than 0.5 inches per second due to project construction, motor vehicle traffic and/or rail operations; or
- expose historic buildings and archeological sites to vibration peak particle velocities greater than 0.25 inches per second due to construction, highway traffic and rail operations.

Project-Specific Impacts and Mitigation Measures

5.6-1 Construction of the proposed project could temporarily expose existing sensitive receptors to increased noise levels.

During construction of the proposed project, noise levels would be produced by the operation of heavy-duty equipment and various other grading, demolition, and construction activities. Construction noise levels were estimated using FTA methodology, with the results shown in Table 5.6-6.

TABLE 5.6-6			
ESTIMATED CONSTRUCTION NOISE LEVELS (IN DBA)			
Construction Equipment	8-hour L_{eq}		
	25 feet	50 feet	75 feet
Demolition			
Track Hoe	96	90	86.5
Crane	94	88	84.5
Excavator / Loader	91	85	81.5
Water Truck	94	88	84.5
Site Work			
Crawler Tractor	91	85	81.5
Grader	91	85	81.5
Loader	91	85	81.5
Compactor	88	82	78.5
Water Truck	94	88	84.5
Dozer	91	85	81.5
Scraper	95	89	85.5
Foundation			
Backhoe	86	80	76.5
Loader	91	85	81.5
Forklift	85	79	75.5
Water Truck	94	88	84.5
Utilities			
Back Hoe	86	80	76.5
Water Truck	94	88	84.5
Forklift	85	79	75.5
Skip Loader	91	85	81.5
Roller	80	74	70.5
Slab on Grade			
Skip Loader	88	82	78.5
Bobcat Tractor	90	84	80.5
Forklift	85	79	75.5
Steel Erection			
Crane	94	88	84.5
Air Compressor	87	81	75.5
Generator	87	81	77.5
Forklift	85	79	77.5
Decking/Slabs			
Generator	87	81	77.5
Forklift	85	79	75.5
Concrete Pump	88	82	78.5
Completion			
Forklift	85	79	75.5
Note: Noise levels calculated from equations defined by the Federal Transit Administration's <i>Transit Noise and Vibration Impact Assessment</i> document, May 2006, pages 12-2 to 12-7. Source: PBS&J, 2007.			

As discussed in the environmental setting, there are sensitive uses surrounding the proposed project site, specifically residential neighborhoods and schools to the north and the Town of Freeport to the west which includes residential uses. Construction noise would affect surrounding uses to varying degrees throughout the period of construction under the proposed project, including: demolition (affecting primarily residential uses in the Town of Freeport); site grading; excavation for infrastructure and building foundations; building construction; and paving and landscaping installation. The Sacramento Municipal Code, Title 8 - Health and Safety, Chapter 8.68 – Noise

Control, limits construction activity to the period between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday. Construction is also limited to the hours between 9:00 a.m. and 6:00 p.m. on Sunday. Since typical sleeping hours fall outside of the time during which construction would occur, construction noise would not be expected to disturb the sleep of nearby residents. Office and commercial uses in the vicinity of the project site would be open during the day when construction would take place. The noise from construction could disturb people working in these buildings, making it difficult to concentrate. Older California building standards (pre-1970) generally provide a reduction of exterior-to-interior noise levels up to about 20 dB with closed windows; newer buildings generally provide a reduction up to about 30 dB. Therefore, the noise levels produced by the equipment (shown in Table 5.6-4) would be higher than what would actually be experienced within residential and commercial structures in the vicinity of the project. Students attending the schools immediately north of the project site could also be affected by construction activities while they are at school during the day.

In addition to effects on existing sensitive land uses, because the proposed project would be constructed in phases, residential uses constructed under the proposed project would also be exposed to construction noise from subsequent phases due to their close proximity to construction activity.

As indicated above, project construction activities would be limited to the hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday, and the hours of 9:00 a.m. to 6:00 p.m. on Sunday consistent with the City's ordinance. In addition, project construction is anticipated to occur in phases, as discussed in Chapter 2, Project Description. Full buildout of the project is anticipated to occur by 2015 at the earliest. Noise produced from construction-related activities would be exempt from the exterior noise limits at residential properties set by the Sacramento Municipal Code. However, construction activities could expose occupants of adjacent buildings to high levels of noise during the day. Consequently, the impact would be considered *significant*.

Mitigation Measures

Implementation of the following mitigation measure would reduce exposure of occupants on and off the project site to noise associated with project construction to the maximum extent feasible. Mitigation Measure 5.6-1(a) through (d) would ensure maximum reduction of noise impacts on receptors near construction areas by shielding construction activities and staging construction equipment away from residential and school uses, limiting construction hours to daytime hours, and use of exhaust and intake silencers on construction equipment. These measures would reduce the exposure of occupants both on and off the project site to the maximum extent feasible. Therefore, this impact would be *less than significant*.

5.6-1 *The project contractor(s) shall ensure that the following measures are implemented during all phases of project construction:*

- a) *Whenever construction occurs on parcels adjacent to existing off-site residential neighborhoods or schools or, when it occurs during later project stages on parcels near residential and other noise-sensitive uses built on-site during earlier project*

stages, temporary barriers shall be constructed around the construction sites to shield the ground floor and lower stories of the noise-sensitive uses. These barriers shall be of ¾-inch Medium Density Overlay (MDO) plywood sheeting, or other material of equivalent utility and appearance, and shall achieve a Sound Transmission Class of STC-30, or greater, based on certified sound transmission loss data taken according to ASTM Test Method E90. The barrier shall not contain any gaps at its base or face, except for site access and surveying openings. The barrier height shall be designed to break the line-of-sight and provide at least a 5 dBA insertion loss between the noise producing equipment and the upper-most story of the adjacent noise-sensitive uses. If, for practical reasons, which are subject to the review and approval of the City, a barrier cannot be built to provide noise relief to the upper stories of nearby noise-sensitive uses, then it must be built to the tallest feasible height.

- b) Construction activities shall comply with the City of Sacramento Noise Ordinance, which limits such activity to the hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday, the hours of 9:00 a.m. to 6:00 p.m. on Sunday, prohibits nighttime construction, and requires the use of exhaust and intake silencers for construction equipment engines.
- c) Construction equipment staging areas shall be located as far as possible from residential areas while still serving the needs of construction contractor(s). Prior to the approval of all construction related permits, including grading permits, improvement plans, and building permits, a plan shall be submitted for approval to the City showing the proposed location of all staging areas. This plan may be included with grading permit, improvement plan, and building permit submittals (i.e., it may be included in improvement plans) and can be reviewed and approved concurrently with permits.
- d) High noise activities, such as jackhammers, drills, impact wrenches and other generators of sporadic high noise peaks, shall be restricted to the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, unless it can be proved to the satisfaction of the City that the allowance of Saturday work on certain onsite parcels (i.e., those as far from noise-sensitive uses as possible) would not adversely affect nearby noise-sensitive receptors. Prior to any such work outside of the specified hours, the applicant shall obtain written approval from the City.

5.6-2 Ground-borne vibration from construction activity could cause structural damage to nearby buildings.

In addition to noise, construction activity also produces vibration. Construction-related ground-borne vibration is normally associated with impact equipment such as jackhammers and the operation of heavy-duty construction equipment such as trucks and bulldozers. Table 5.6-7 shows typical vibration levels for construction equipment.

Construction Equipment	PPV (in./sec.)				Approximate VdB at 25 Feet
	25 Feet	100 Feet	200 Feet	400 Feet	
Pile Driver (Impact)	0.644	0.081	0.028	0.010	104
Vibratory Roller	0.210	0.026	0.009	0.003	94
Large Bulldozer	0.089	0.011	0.004	0.001	87
Loaded Trucks	0.076	0.010	0.003	0.001	86
Jackhammer	0.035	0.004	0.002	0.001	79
Small Bulldozer	0.003	<0.001	<0.001	<0.001	58

Source: Derived from Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006, page 12-12.

Vibration can damage buildings constructed of reinforced concrete, steel, or timber if the strength of the vibration exceeds a peak particle velocity (PPV) of 0.5 inches per second; however, historic buildings or archeological sites would be at risk if the vibration peak particle velocities were greater than 0.25 inches per second.

The existing vacant dairy farm and associated farm buildings located in the western portion of the site that would be demolished as part of the project are located approximately 75 feet from existing residential and commercial buildings located adjacent to the project site in the Town of Freeport. It is unknown whether the existing buildings in the Town of Freeport closest to the dairy farm are historic buildings; however, many of the buildings in the Town of Freeport are older non-reinforced buildings which were constructed as early as the 1920s. Buildings of this age would be subject to structural damage at peak particle velocities as low as 0.25 inches per second. According to Table 5.6-7, the piece of construction equipment that would result in the highest vibration level would be the vibratory roller which has a vibration level of 0.210 inches per second at 25 feet. Because this vibration level is below the City of Sacramento's threshold of 0.25 inches per second for historic buildings, construction activities at a distance greater than 25 feet would not be considered significant.

Because no pile-driving would be used during construction, no impacts to the structural integrity of existing buildings would occur because vibration levels above 0.5 inches per second would not be generated. Further, as required under Section 8.68.060(E) of the City's Municipal Code, construction activities are limited to between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday, and therefore, construction activities would not occur during normal sleep hours.

Historic-age buildings in the Town of Freeport would not be within 25 feet of demolition or construction activities, and it is anticipated that these buildings would not experience vibration levels higher than 0.25 inches per second. In addition, because the proposed project would not require pile driving, vibration levels above 0.5 inches per second would not be experienced by noise and vibration-sensitive uses in the vicinity of the project site. Therefore, this impact would be ***less than significant***.

Mitigation Measure

None required.

5.6-3 Operation of the proposed project could permanently expose sensitive receptors to increased traffic noise levels from local roadways.

Existing sensitive noise receptors that would be affected by development of the proposed project are primarily residential uses located along Freeport Boulevard, Franklin Boulevard, Detroit Boulevard, 24th Street, Manorside Drive, and Meadowview Road. The concern for these adjacent existing residences is that many of the homes are single-family homes built close to the street. In addition, many of the homes are more than 30 years old and do not contain any of the modern construction techniques that help insulate a building from high exterior noise levels. Most of these residences are exposed to existing traffic noise from the local roads and I-5. Increases in ambient noise associated with development of the proposed project would come primarily from traffic.

The City of Sacramento General Plan's acceptable exterior noise standard for common outdoor areas at residential uses (dwellings other than detached single-family) is 60 dB L_{dn} . Table 5.6-8 shows the existing peak-hour L_{eq} (dBA) at six receptor locations that have the potential to be affected by development of the proposed project. However, the City's General Plan uses L_{dn} to assess noise impacts. L_{dn} is equal to the peak-hour L_{eq} minus two dBA.⁵ Noise measurements were taken at six specific locations (shown on Figure 5.6-1). These locations were selected to be representative of noise levels for sensitive receptors (i.e., residential neighborhoods) adjacent to roadways. Noise measurements at four of the six of the receptors (8050 Freeport Boulevard, 8045 Franklin Boulevard, 7660 Manorside Drive, and between 2113 and 2121 Meadowview Road) indicate that residences along each roadway experience noise levels from traffic that are above the City's 60 dB L_{dn} exterior noise standard. This includes existing residences along Freeport Boulevard, Franklin Boulevard, Manorside Drive, and Meadowview Road. With addition of traffic associated with the proposed project, none of the six receptors, or the residences along these roadways would experience an increase in noise above 3 dB. The modeled decibel increases range from 0.4 dBA to 2.7 dBA.

According to the City of Sacramento 1988 General Plan DEIR noise impact criteria, an increase of 3 dBA would constitute a significant increase.⁶ Therefore, because the contribution of traffic from the proposed project would not cause an increase in noise levels greater than 3 dB, impacts on existing offsite residences due to traffic increases on local roadways are considered ***less than significant***.

Under the proposed City of Sacramento 2030 General Plan, the incremental noise impact significance criterion would no longer be a fixed 3 dB, but would vary depending on the existing noise level, becoming more stringent for receptors exposed to higher existing noise levels. For example, for a residential receptor exposed to an existing noise level of 55 dBA L_{dn} , an increase of at least 3 dBA would be required before a significance call is made, but at 65 dBA, only a 1 dBA increase would be necessary. Of the six receptors for which traffic noise was modeled in Table 5.6-8, all would experience traffic noise increases as a result of the project, but five of the six

5 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006, page D-4.

6 City of Sacramento, *City of Sacramento General Plan Update Draft Environmental Impact Report*, SCH#86101310, prepared by Jones and Stokes Associates, March 1987, page AA-48.

would remain less than significant under the new criteria. However, the increase of 2.7 dBA at the residence at 7798 24th Street would be considered a *potentially significant impact*.

Receptor	Roadway Segment	Peak-Hour Noise Levels L_{eq} (dBA) ¹		
		Existing No Project	Existing Plus Project ¹	Increase
(1) – 8050 Freeport Boulevard, 5 ft from roadside	Freeport Boulevard, south of Stonecrest Avenue	65.8	66.4	0.6
(2) – 8045 Franklin Boulevard, 25 ft from roadside	Franklin Boulevard, north of Cosumnes River Boulevard	72.8	73.3	0.5
(3) – 7945 Detroit Boulevard, 1 ft from roadside	Detroit Boulevard, south of Meadowview Road	57.6	58.1	0.5
(4) – 7798 24th Street, 25 ft from roadside	24th Street, south of Meadowview Road	60.3	63.0	2.7
(5) – 7660 Manorside Drive, 30 ft from roadside	Manorside Drive, south of Meadowview Road	66.7	67.4	0.7
(6) – Between 2113 and 2121 Meadowview Road, 5 ft from roadside	Meadowview Road, west of Manorside Drive	71.7	72.1	0.4

Note:
1. Noise levels were calculated based on peak-hour traffic volumes provided by Fehr & Peers. PM peak-hour traffic volumes were used for all roadway segments, where the PM peak hour represented the worst-case noise level increase.
Source: PBS&J, 2007.

Mitigation Measure

Under the current adopted thresholds the impact would be considered less than significant; however, under the draft City of Sacramento 2030 General Plan, the increase in exterior noise levels at 7798 24th Street and all similarly exposed residences along this roadway would require either that their exterior noise levels be reduced to 60 dBA L_{dn} or below, or that interior noise levels would not exceed 45 dBA L_{dn} with the expected increase in traffic noise due to the project. Mitigation Measure 5.6-3 would require that soundwalls be constructed to minimize noise impacts, if feasible. However, at this time since it is not known if construction of soundwalls is feasible in this area and because draft policies contained in the draft 2030 General Plan could change before the plan is adopted it is not certain that this mitigation would reduce the impact to a less-than-significant level. Therefore, because of this uncertainty the impact under the draft 2030 General Plan would be **significant and unavoidable**.

5.6-3 *At the time of building permits, the project applicant or developer shall be required to comply with the City's adopted General Plan policies that pertain to acceptable noise levels. This may require construction of a soundwall, if appropriate and feasible given the exposure circumstances of the residence(s) along 24th Street, to minimize traffic noise.*

5.6-4 Operation of the proposed project could permanently expose sensitive receptors to increased traffic noise levels from Interstate 5.

An additional concern is that sensitive receptors located on the project site would be exposed to noise levels above accepted standards due to their proximity to I-5. A majority of the residential

uses in the eastern portion of the site are shielded from traffic noise on I-5 by the proposed Village Center (as shown in Figure 2-3 in Chapter 2, Project Description). In these areas exterior L_{dn} could be as high as 63.8 dB without taking into consideration the attenuation of noise that would occur from the Village Center proposed between the residential uses and I-5. With the commercial buildings proposed between the residential uses and I-5, noise is expected to be attenuated by 15 dB.⁷ Thus, exterior noise levels at the proposed residential uses would be approximately 48.8 dB, which is below the City's exterior noise standard of 65 dBA L_{dn} . In addition, Title 24, which specifies that interior noise levels attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room of new multi-family dwellings, would apply to these residential units. Thus, interior and exterior noise levels for these residences would not exceed the City's thresholds.

Single-family residential homes are proposed west of I-5 and could be located as close as 119 feet from the edge of the nearest southbound I-5 traffic lane;⁸ exterior sound levels at this location could be as high as 79.9 dBA L_{dn} . In addition, the project also proposes a small area of medium-density residential uses east of I-5 as close as 126 feet from the edge of the nearest northbound I-5 traffic lane;⁹ these homes could experience exterior noise levels as high as 78.7 dBA L_{dn} . These noise levels were confirmed with a separate noise reading performed during the AM and PM peak hours, west of I-5. At 1,200 feet west of I-5, the AM peak hour L_{eq} was measured at 61.6 dBA; the PM peak hour L_{eq} was 54.1 dBA (see Table 5.6-3). Assuming that new residential structures would provide 30 dBA of sound insulation, there is a potential for the residential interior noise standard of 45 dB L_{dn} and the exterior noise standard of 60 dB L_{dn} to be exceeded for all residences located within 1,200 feet east and west of I-5.

Under the draft Sacramento 2030 General Plan the impact would be judged under the same standard as the current threshold. Therefore, the impact would be the same as discussed above.

Because the proposed project would construct residential land uses in close proximity to I-5 on either side of the freeway, this would expose sensitive receptors to noise levels exceeding the 60 dB L_{dn} exterior standard and/or the 45 dB L_{dn} interior standard; therefore, this would be a *significant impact*.

Mitigation Measures

Attainment of the City's 45 dB L_{dn} interior noise standard at the proposed residential units east and west of I-5 would be attained with Mitigation Measure 5.6-4 (a) reducing the impact to less than significant.

For attainment of the City's 60 dB L_{dn} exterior noise standard, a barrier, such as a sound wall, would be the appropriate mitigation to attenuate exterior noise levels. However, TNM noise modeling performed for the project (see Appendix H), indicated that a sound wall of at least 27 feet would be required to mitigate exterior noise levels below the 60 dB L_{dn} exterior standard. This sound wall

7 Federal Highway Administration, *Roadway Construction Noise Model User's Guide*, January 2006, page A-1.

8 Impact Sciences, Inc., *Delta Shores Health Risk Assessment*, July 2007, page 7.

9 Impact Sciences, Inc., *Delta Shores Health Risk Assessment*, July 2007, page 7.

would be required along the entire western frontage of the project site and along the medium-density residential proposed north of the interchange in the eastern portion of the site. A sound wall of this height would be required due to the high noise levels associated with traffic along I-5. Construction of a 27-foot high sound wall on both sides of I-5 would not be feasible or practical. According to Figure 5.6-2a, the City of Sacramento General Plan also contains land use compatibility categories for community noise level exposure. For residential land uses, community noise exposure levels between 60 and 70 dB L_{dn} are conditionally acceptable. Under conditionally acceptable noise levels, new construction or development should only be undertaken after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Further analysis with TNM noise modeling showed that construction of a 15-foot high sound wall, which would be more practical and feasible than a 27-foot wall, would reduce exterior noise levels at residences adjacent to I-5 below 65 dB L_{dn} , which would meet the City's conditionally acceptable noise level. Thus, reducing exterior noise levels below 65 dB L_{dn} with the following mitigation would reduce the impact to a ***less-than-significant level***.

5.6-4 *The project applicant shall have a certified acoustical professional prepare a site-specific analysis for all residential uses fronting both sides of I-5 that details how exterior noise levels would achieve exterior noise levels less than 65 dB L_{dn} and interior noise levels less than 45 dB L_{dn} . The results of the analysis shall be submitted to the City of Sacramento for review and approval and appropriate recommended noise reduction measures/design features shall be incorporated into project design. Noise reduction measures/design features shall include, but are not limited to the following:*

- a) *Prior to final design review, all low-density and medium-density residences west of I-5 and medium-density residential residences east of I-5 (in the 8.62-acre parcel adjacent to I-5) shall be designed and constructed to Title 24 standards which specify that interior noise levels attributable to exterior sources shall not exceed 45 dBA L_{dn} in any habitable room of new dwellings.*
- b) *Prior to issuance of occupancy permits, the project applicant shall construct a sound wall west of the southbound lane of traffic along I-5 with a minimum height of 15 feet, that is capable of reducing exterior noise levels below 65 dB L_{dn} outside the closest residential units. The project applicant shall also construct a sound wall for residences proposed north of the interchange (in the 8.62-acre parcel adjacent to I-5) along the east side of the northbound lane of I-5 with a minimum height of 15 feet that is capable of reducing exterior noise levels below 65 dB L_{dn} outside the closest residential units.*

5.6-5 Operation of the proposed project could permanently expose sensitive receptors on the project site to increased noise produced by both on-site and off-site stationary and mobile sources.

In addition to increases in vehicle noise, operation of the proposed project would also introduce new stationary sources such as heating, ventilation and air conditioning (HVAC) equipment, garbage pickup activity, and truck activity at residential and commercial building loading docks.

HVAC systems would be installed to service the project's residential and commercial buildings. Noise generated by HVAC systems can vary significantly depending on the type of equipment and the size. The potential for noise impacts from such equipment would depend on its proximity to noise-sensitive uses, the equipment type and size, and whether the equipment would be surrounded by noise-abating enclosures.

On-site truck activity would be associated with garbage pickup and deliveries to project residential and commercial buildings. At this early stage of the project design/review process, the expected number of deliveries, types of trucks, truck circulation routes, and anticipated delivery times are not available. However, as the uses proposed for the site include large retail, it is likely that deliveries would be performed by heavy trucks. The large retail buildings would be located in the Village Center, closest to I-5. Loading areas for these buildings would be located behind the buildings and adjacent to I-5, with the retail building itself and its parking lot located between loading areas and residential uses. However, there are other, smaller retail buildings located in the Residential/Mixed-Use area and in the retail component of the Village Center north of the future extension of Cosumnes River Boulevard that could have loading areas close enough to affect nearby residential or other noise-sensitive land uses.

An existing Sacramento Job Corps facility is located immediately east of the project site. This facility contains a large open space area that is used for heavy equipment training. Equipment such as bulldozers, scrapers, and backhoes are used during the training hours at the facility which run Monday through Friday from 7:45 am to 3:30 pm.¹⁰ Because of wet weather, training operations tend to occur less frequently in winter.¹¹ Medium-density residential uses are proposed immediately adjacent to the Job Corps facility. Although the operation of heavy equipment would not occur during the evening or nighttime hours, noise levels from the equipment during the day may exceed the City's maximum acceptable exterior noise standard of 60 dB L_{dn} . As shown in Table 5.6-4, noise levels of bulldozers, scrapers, and backhoes are as high as 76.5, 81.5, and 85.5 dBA respectively, at 75 feet from the source. Operation of this equipment could occur as close as 100 feet to the proposed residential development resulting in 1-hour L_{eq} of 74.0, 79.0, and 83.0 dBA, respectively. These levels would exceed the City's maximum acceptable exterior noise standard. Under the draft Sacramento 2030 General Plan the impact would be judged under the same standard as the current threshold. Therefore, the impact would be the same as discussed above,

Due to the possibility of stationary source noise exceeding the standards established by the Sacramento Municipal Code at on-site residential and other noise-sensitive uses, the project's operational stationary source noise sources would be considered to have a *significant impact*.

10 Tracey Allen, Sacramento Job Corps Center, personal communication, September 18, 2007.

11 Tracey Allen, Sacramento Job Corps Center, personal communication, September 18, 2007.

Mitigation Measures

Implementation of Mitigation Measure 5.6-5(a) through (d) would substantially reduce predicted noise levels at noise sensitive receptors by requiring that commercial and/or office uses install noise attenuation devices and/or placement of stationary noise emitting equipment to ensure that operational stationary noise levels would meet or exceed the legal requirement of the Sacramento Municipal Code. In addition, Mitigation Measure 5.6-5(d) would ensure that noise levels at residential uses adjacent to the Sacramento Job Corps facility would achieve exterior noise levels less than 65 dB L_{dn} and an interior noise level of less than 45 dB L_{dn} , consistent with City of Sacramento noise standards under both the current and proposed standards. Implementation of the following mitigation measures would reduce this impact to a **less-than-significant level**.

- 5.6-5 a) *Prior to the issuance of building permits, the applicant shall submit engineering and acoustical specification for project mechanical HVAC equipment to the Planning Director (or their designee) demonstrating that the equipment design (types, location, enclosure, specifications) would control noise from the equipment to at least 10 dBA below existing ambient noise levels at nearby residential and other noise-sensitive land uses.*
- b) *Garbage storage containers and retail/commercial building loading docks shall be placed to allow adequate separation to shield adjacent residential or other noise-sensitive uses. If the placement of garbage storage containers or loading docks away from adjacent noise-sensitive uses is not feasible, these noise-generating areas shall be enclosed or acoustically shielded to reduce noise-related impacts to these noise-sensitive uses. The location of garbage storage containers and loading docks shall be shown on building plans reviewed by the City. If these noise-generating structures will be located near sensitive uses, a plan shall be submitted to the City for review and approval, demonstrating adequate acoustical shielding to reduce noise-related impacts to an appropriate level.*
- c) *Noise generating stationary equipment associated with proposed commercial and/or office uses, including portable generators, compressors, and compactors shall be enclosed or acoustically shielded to reduce noise-related impacts to noise-sensitive residential uses. Such shielding shall be detailed in all plans submitted to the City for approval which include these equipment types.*
- d) *Prior to tentative map approval, the project applicant shall have a certified acoustical professional prepare a site-specific analysis for residential uses adjacent to the Sacramento Job Corps facility that details how exterior noise levels would achieve exterior noise levels less than 65 dB L_{dn} and an interior noise level of less than 45 dB L_{dn} . The results of the analysis shall be submitted to the City of Sacramento for review and approval and appropriate recommended noise reduction measures/design features shall be incorporated into project design and be printed on all construction documents. Noise reduction measures/design features shall include, but are not limited to the following:*

- *All residences immediately west of the Sacramento Job Corps facility shall be designed and constructed to Title 24 standards which specify that interior noise levels attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room of new dwellings.*
- *The project applicant shall construct a rear-yard sound wall of adequate height and building specifications, as determined by the acoustical professional, between residential uses located adjacent to the Sacramento Job Corps facility that would reduce exterior noise levels to less than 65 dB L_{dn} and interior noise levels to less than 45 dB L_{dn} .*
- *All prospective buyers shall be informed of the operational activities that occur at the Sacramento Job Corps facility site and the noise levels associated with those activities. All residential contracts shall include a disclosure statement that a purchaser, lessee, or transferee signs at the time of sale, purchase, contract of sale, transfer, or lease of real property.*

If noise generating operations at the Job Corps facility are permanently halted prior to construction of noise sensitive uses within the vicinity, the above mitigation would not be required.

Cumulative Impacts and Mitigation Measures

The cumulative context for construction noise and vibration impacts associated with the proposed project consists of all existing and future construction activities that could affect the project site or surrounding uses in south Sacramento. Noise associated with stationary sources (i.e., HVAC systems, truck deliveries, Sacramento Job Corps Facility, etc.) attributed to project operations would affect on-site project uses and is considered a localized noise source that would not contribute to the cumulative noise environment. Therefore, on-site stationary noise sources are not evaluated in a cumulative context.

Noise associated with project construction is also a localized noise source that would not contribute to the cumulative noise environment. In addition, compliance with the City's noise ordinance mitigates any noise impact.

5.6-6 Traffic generated by the proposed project, in conjunction with traffic from planned future development in other surrounding areas of the City and County, could permanently expose sensitive receptors to increased cumulative noise levels from local roadways.

The proposed project would, in combination with cumulative development in the city, increase noise levels experienced by sensitive receptors due to increased traffic (local and interstate traffic noise sources). The proposed project would also contribute to future traffic volumes along area roadways, which would result in increases in traffic noise levels at off-site receptors.

Noise from motor vehicles associated with the proposed project and other cumulative development that would be built over the next approximately 20 years would have an effect on local sensitive

receptors. Cumulative noise analysis done for the environmental review of the Cosumnes River Boulevard and I-5 Interchange project indicated that there would be no cumulative scenario in which cumulative noise impacts resulting from the extension of Cosumnes River Boulevard would exceed noise thresholds. Since this analysis found that cumulative noise levels associated with the extension of Cosumnes River Boulevard would be less than significant, residential uses developed adjacent to the extension, both as part of the proposed project and as part of other future development, would not be adversely affected in the cumulative context. Table 5.6-9 shows cumulative traffic noise levels both with and without the proposed project at the identified sensitive receptors. As shown in the table, traffic noise increments would range from 0.2 dBA to 2.0 dBA. The highest increase (2.0 dBA) would occur along 24th Street.

Receptor	Roadway Segment	Peak-Hour Noise Levels (dBA) ¹		
		Cumulative No Project	Cumulative Plus Project ¹	Increase
(1) – 8050 Freeport Boulevard, 5 ft from roadside	Freeport Boulevard, south of Stonecrest Avenue	69.7	70.0	0.3
(2) – 8045 Franklin Boulevard, 25 ft from roadside	Franklin Boulevard, north of Cosumnes River Boulevard	73.9	74.2	0.3
(3) – 7945 Detroit Boulevard, 1 ft from roadside	Detroit Boulevard, south of Meadowview Road	61.8	62.0	0.2
(4) – 7798 24th Street, 25 ft from roadside	24th Street, south of Meadowview Road	62.2	64.2	2.0
(5) – 7660 Manorside Drive, 30 ft from roadside	Manorside Drive, south of Meadowview Road	68.9	69.5	0.6
(6) – Between 2113 and 2121 Meadowview Road, 5 ft from roadside	Meadowview Road, west of Manorside Drive	72.6	72.9	0.3

Note:
1. Noise levels were calculated based on peak-hour traffic volumes provided by Fehr & Peers. PM peak-hour traffic volumes were used for all roadway segments, where the PM peak hour represented the worst-case noise level increase.
Source: PBS&J, 2007.

According to the City of Sacramento General Plan DEIR noise impact criteria, an increase of 3.0 dB would constitute a significant increase. Because the increase in noise levels for cumulative conditions due to the project's contribution would be less than the City's noise impact criteria, this impact is considered cumulatively ***less than significant***.

Under the proposed City of Sacramento 2030 General Plan, the incremental noise impact significance criterion would no longer be a fixed 3 dB, but would vary depending on the pre-project noise level, becoming more stringent for receptors exposed to higher noise levels. For example, for a residential receptor exposed to a pre-project noise level of 55 dBA L_{dn}, an cumulative increase of at least 3 dBA would be required before a significance call is made, but at 65 dBA, only a 1 dBA increase would be necessary. Of the six receptors for which traffic noise was modeled in Table 5.6-9, all would experience cumulative traffic noise increases with the project, but all would remain ***less than significant*** under the new criteria.

Mitigation Measure

None required.

5.6-7 Traffic generated by the proposed project, in conjunction with traffic from planned future development in other surrounding areas of the City and County, could permanently expose sensitive receptors to increased cumulative noise levels from Interstate 5.

Traffic associated with the proposed project, in combination with traffic from cumulative development in the area, would increase noise levels experienced by sensitive receptors located in residential land uses adjacent to I-5. West of I-5, cumulative noise levels could reach as high as 82.1 dBA at the residence closest to the edge of the nearest southbound lane of traffic. East of I-5, cumulative noise levels could reach as high as 80.9 dBA at the residence closest to the edge of the nearest northbound lane of traffic.

At full buildout, the proposed project would contribute approximately 1,600 vehicles on I-5 during the PM peak hour, in addition to the approximately 15,000 vehicles that would already occur on I-5 under cumulative conditions. The increase in traffic volumes on I-5 under cumulative conditions would result in an increase in noise levels. This increase in noise levels has the potential to exceed the City's exterior and interior noise standards at the residences located immediately east and west of I-5. Exceedance of the City's exterior noise standards would result in a significant impact. According to the City of Sacramento General Plan DEIR noise impact criteria, an increase of 3.0 dB would constitute a significant increase in noise levels. A 3.0 dB increase is equivalent to a doubling of traffic. Because the proposed project would not contribute traffic to I-5 that would increase noise levels by 3 dB, the project's contribution to cumulative noise levels near I-5 is not considerable. Therefore, this impact is considered cumulatively ***less than significant***.

Under the proposed City of Sacramento 2030 General Plan, the incremental noise impact significance criterion would no longer be a fixed 3 dB, but would vary depending on the pre-project noise level, becoming more stringent for receptors exposed to higher noise levels. Considering the very high levels (i.e., exceeding 80 dBA L_{dn}) to which residences located immediately east and west of I-5 would be exposed under future cumulative conditions, any increase caused by the proposed project would be considered *significant*.

Mitigation Measure

Under the draft City of Sacramento 2030 General Plan, the closest residences to I-5 would require either that their exterior noise levels be reduced to 60 dBA L_{dn} or below by a sound wall, or that exterior noise levels be reduced to at least 65 dBA L_{dn} , with assurance that interior noise levels not exceed 45 dBA L_{dn} . The latter could be assured by installing appropriate acoustic insulation features (e.g., installing windows with a higher Sound Transmission Class rating) to the project residential uses nearest I-5. This would reduce the impact to ***less than significant***.

5.6-7 Implement Mitigation Measure 5.6-4.

5.7 PUBLIC SERVICES

5.7 PUBLIC SERVICES

INTRODUCTION

This section of the EIR describes existing service providers; law enforcement (police services), fire protection, schools, parks, solid waste, and evaluates the ability of providers to meet the proposed project demand.

One comment letter was received in response to the NOP regarding the provision of public services (see Appendix B). The letter was received from the Sacramento Fire Department and requested additional access points to the western portion of the project site and that the location of the proposed fire station be approved by the Fire Department. The applicant is addressing these concerns.

Sources used to prepare this section include the City of Sacramento 1988 General Plan, General Plan Update Technical Background Report (June 2005), the Airport/Meadowview Community Plan (adopted April 17, 1984), the draft City of Sacramento 2030 General Plan, the Delta Shores Planned Unit Development Guidelines (PUD Guidelines, August 2008), project plans, various documents and information provided by service providers, and relevant environmental and planning documents. A specific list of sources used for the analysis of each service is provided under each sub-section, below.

POLICE PROTECTION

This section describes existing police protection services in the project area. Existing plans and policies relevant to police protection issues associated with implementation of the project are provided. Specifically, information for this section was obtained from project plans, the City of Sacramento General Plan (1988), the General Plan Update Technical Background Report (2005), the draft City of Sacramento 2030 General Plan, the Airport/Meadowview City Community Plan (1984), communication with Sacramento Police Department (SPD) staff, and other relevant environmental and planning documentation.

ENVIRONMENTAL SETTING

The proposed project would be served by the SPD for law enforcement services. The SPD is staffed by 804 sworn police officers as of October 2007,¹ 438 civilian staff, and 27 part-time non-career employees and received 949,586 calls for service in 2006, resulting in 320,025 calls dispatched.² The SPD currently houses its main headquarters at the Public Safety Center, Chief Deise/Kearns Administration Facility, located at 5770 Freeport Boulevard. The SPD has two substations from

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- 1 Lieutenant Eric Poerio, Sacramento Police Department, Crime Prevention through Environmental Design, written communication to Rochelle Amrhein, Associate Planner, City of Sacramento Development Services and Jessica Heuer, Analyst, PBS&J, January 16, 2008.
 - 2 Lieutenant Eric Poerio, Sacramento Police Department, Crime Prevention through Environmental Design, written communication, June 8, 2007.

which patrol divisions operate. The William J. Kinney Police Facility serves the northern portion of the city, and is located in the northeast portion of the city. The Joseph E. Rooney Police Facility is located approximately four miles north of the project site at 5303 Franklin Boulevard. Police protection services for the project site are served out of the Joseph E. Rooney Police Facility.

The SPD has an unofficial goal of providing 2.0 to 2.5 sworn police officers per 1,000 residents and one civilian support staff per two sworn officers. The department is currently providing 1.7 officers per 1,000 residents.³ The SPD is in the process of preparing a Master Plan, which is expected to provide more specific information regarding the needs of the department and plans for determining appropriate levels of service.

The SPD maintains mutual aid agreements as part of a statewide emergency response system. Locally, the SPD maintains memorandums of understanding (MOUs), which are basically contracts to provide services, with Regional Transit and school districts within the city, with the exception of the Grant Joint Unified School District, which employs its own police force. The SPD has specialized staff to work with Regional Transit and in public high schools.⁴

Regulatory Context

Federal

There are no federal regulations regarding police protection services that pertain to the proposed project.

State

There are no state regulations regarding police protection services that pertain to the proposed project.

Local

City of Sacramento 1988 General Plan

The following goals and policies from the City of Sacramento General Plan are applicable to the proposed project.

PUBLIC FACILITIES AND SERVICES ELEMENT

- Goal A** **Provide and maintain a high quality of public facilities and services to all areas of the City.**
- Goal B** **Time all new public facilities and services as closely as possible to approved urban expansion.**
- Goal E** **Design public facilities in such a manner as to ensure safety and attractiveness.**

3 Lieutenant Eric Poerio, Sacramento Police Department, Crime Prevention through Environmental Design, written communication, June 8, 2007.

4 City of Sacramento, Township 9 Draft EIR, February 2007, page 6.9-2.

Police Services

Goal A Provide the highest level of police service to protect City residents and businesses.

Policies

1. Continue Police Department participation in the review of subdivision proposals and in assisting the Public Works Department with traffic matters.
2. Maintain communication with residents and businesses in order to learn about developing crime problems and to educate people on crime prevention measures and programs.

City of Sacramento 2030 General Plan

The City currently is in the process of updating its General Plan and anticipates adopting the 2030 General Plan by late 2008. Therefore, applicable policies from the 2030 General Plan are included below.

Goal PSH 1.1 Crime and Law Enforcement. Work cooperatively with the community, regional law enforcement agencies, local government and other entities to provide quality police service that protects the long-term health, safety and well-being of our city, reduce current and future criminal activity, and incorporate design strategies into new development.

Policies

- PSH 1.1.2 **Response Time Standards.** The City shall strive to achieve and maintain appropriate response times for all call priority levels to provide adequate police services for the safety of all city residents and visitors.
- PSH 1.1.3 **Staffing Standards.** The City shall maintain optimum staffing levels for both sworn police officers and civilian support staff in order to provide quality police services to the community.
- PSH 1.1.4 **Timing of Services.** The City shall ensure that development of police facilities and delivery of services keeps pace with development and growth in the city.
- PSH 1.1.8 **Development Fees for Facilities and Services.** The City shall require development projects to contribute fees for police protection services and facilities.

Airport/Meadowview Community Plan

The following goals, objectives, and policies are from the Airport/Meadowview Community Plan (adopted April 17, 1984) are applicable to the proposed project.

PUBLIC FACILITIES AND SERVICES ELEMENT

Goal 1 Ensure that the level of City services in the Airport Meadowview community meet City-wide standards.

Objective 4 Minimize the impact of crime on the community through the use of crime prevention programs and by the most efficient deployment of police manpower.

Policies

1. Ensure that necessary public facilities and services are provided to meet projected demands.
12. Encourage citizen and merchant groups to make use of crime and fire prevention programs. These programs include home alert, armed robbery and burglary protection, security systems, and employee training and personal safety programs.

South Area Community Plan

There is one policy under the draft South Area Community Plan that addresses law enforcement issues in this area of the city.

SA.PHS 1.2 **Public Service Coordination.** The City shall coordinate among the various agencies in the South Area in order to better provide public services across Sacramento County and city borders.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

This impact analysis determines whether the proposed project would require new or expanded facilities in order to house additional officers required to respond to on-site emergencies, the construction of which would result in physical environmental effects. Reductions in service levels can be indicative of significant project impacts and the need for additional staff and/or police facilities. Proper staffing levels ensure appropriate service levels and response times for police protection.

The SPD has an unofficial goal of providing 2.0 to 2.5 sworn officers for every 1,000 residents. This analysis uses ratios ranging from 2:1,000 to 2.5:1,000 sworn officers to residents and 1:2 ratio for civilian support staff to sworn officers, along with information provided by the SPD to estimate staffing needs to serve the proposed project.

The analysis of required additional SPD staff and facilities is largely based on the residential population generated by a project. To determine the number of residents generated by the project, the number of dwelling units is multiplied by the average persons per household for the City of Sacramento. According to the U.S. Census, the City of Sacramento has an average of 2.57 persons per household. Based on this figure, the maximum population generated by the project would be approximately 13,421 persons based on a maximum of 5,222 dwelling units.

Standards of Significance

For the purposes of this EIR, impacts on law enforcement are considered significant if the proposed project would:

- require, or result in, the construction of new, or the expansion of existing, facilities related to the provision of police protection.

Project-Specific Impacts and Mitigation Measures

5.7-1 The proposed project could result in the construction of new, or expansion of existing, police facilities, which could result in adverse environmental impacts.

The proposed project would develop a maximum of 5,092 new homes of varying densities, which would result in a population of approximately 13,086. In addition to residential uses, the proposed project would develop over 140 acres of commercial uses, over 160 acres of parks, open space, wetland preserve areas, and trails, along with various public facilities. Based on a staffing ratio of 2 sworn officers for every 1,000 residents, the proposed project would result in the need for

approximately 26 sworn officers in order to maintain current service levels. Using the higher ratio of 2.5 officers per 1,000 residents, the residential portion of the project would generate the need for up to 33 new sworn officers. In addition to sworn personnel, the SPD requires civilian support staff at a ratio of one for every two sworn officers; this would result in the need for between 13 and 17 support personnel. Other specific uses proposed within the project, such as the retail component, would generate the need for even more staff, including between 1 and 4 additional sworn officers and 1 to 2 support staff.⁵ In total, development of the proposed project would require the addition of between 41 and 56 new employees to the SPD staff, depending on the staffing ratio used.

The SPD has stated that the three existing police facilities within the city are already staffed beyond capacity, and could not accommodate the additional staff needed to serve the proposed project. Additionally, the SPD has identified that additional facilities are needed in the downtown core area, Meadowview, and North Natomas in order to provide efficient police protection services in the fastest growing areas of the City.⁶ Therefore, due to the location and staffing needs of the proposed project, a new facility would be needed to maintain public safety within the project site.

The SPD is developing a Master Plan designed to accommodate city-wide department needs for the next 10 years. The SPD has determined that a new police substation is needed in the Meadowview area to provide for a rapidly increasing population. At this time, the SPD anticipates that the facility would be located near 24th Street and Meadowview Road, just north of the project site. This facility would have the capacity to accommodate approximately 200 staff and would serve the project site as well as the area generally bound by the Sacramento River on the west, Highway 99 on the east, Florin Road on the north, and the city limit and Sheldon Road to the south, but the proposed project would be the first substantial project that pushes the existing Joseph E. Rooney Police Facility beyond capacity.⁷ The new substation would be funded, in part, by a fair share contribution to be paid by the project developer. The SPD would add personnel on an add-needed basis as the project builds out to meet proposed project service goals. However, the new police facility is not anticipated to be built within the next five years, so it is likely that at least a portion of the proposed project would be in operation prior to development of the new police facility. In addition, as stated above, Delta Shores is the first substantial project that would push the existing police facility far beyond its capacity. Therefore, unless fair share funding can be guaranteed toward the development of the new Meadowview police facility, this would be a *potentially significant impact*.

Mitigation Measure

Implementation of the following mitigation measure would ensure that the project developer pay its fair share of funding toward the development of the new Meadowview police facility consistent with the new General Plan policy PHS 1.1.8, which would result in a ***less-than-significant impact***.

5 Lieutenant Eric Poerio, Sacramento Police Department, Crime Prevention through Environmental Design, written communication to Rochelle Amrhein, Associate Planner, City of Sacramento Development Services and Jessica Heuer, Analyst, PBS&J, January 16, 2008.

6 City of Sacramento, *2006-2011 Capital Improvement Plan*, Public Safety Program Overview, page E-2.

7 Lieutenant Eric Poerio, Sacramento Police Department, Crime Prevention through Environmental Design, written communication to Rochelle Amrhein, Associate Planner, City of Sacramento Development Services and Jessica Heuer, Analyst, PBS&J, January 16, 2008.

5.7-1 *Prior to the issuance of building permits, the project developer shall enter into a funding agreement with the City of Sacramento Department of Development Services to pay its fair share contribution toward the development of the Sacramento Police Department's new Meadowview Area facility. The fair share contribution for the proposed project has been determined to be \$1,182,000.00, per the City. Implementation of this funding agreement shall be monitored by the City's Planning Department.*

Cumulative Impacts and Mitigation Measures

The cumulative context for the provision of police protection services is the service boundary of the SPD, which coincides with the city limits of Sacramento.

5.7-2 The proposed project, in combination with other development in the city, could result in the construction of new, or expansion of existing police facilities, which could result in adverse environmental impacts.

The proposed project would add up to approximately 13,086 new residents to one of the fastest-growing areas in the city, in combination with existing demand as well as the area generally bound by the Sacramento River, Florin Road, Highway 99, and the city limits. This would create an increased need for police protection services in the city that would be provided by SPD which could potentially cause a decrease in service to other communities in the city. Other development within the SPD service area that serves the project could further increase the demand on police protection services in the Meadowview area of the city.

As discussed under Impact 5.7-1, the SPD is developing a Master Plan designed to plan for city-wide department needs in the future. The SPD has determined that a new police substation is needed in the Meadowview area. The SPD would add personnel on an as-needed basis as projects build out to meet service goals and would use existing facilities until such time the new sub-station is operational. However, because the existing facility alone could not accommodate the new staff that would be needed by either the proposed project or other development projects within the city, this would be a *significant cumulative impact*. Because the proposed project would be the first large project in the Meadowview area that would push the existing police facility far beyond its capacity, the proposed project's contribution to the cumulative impact would be considerable and this would be a significant cumulative impact.

Mitigation Measure

Implementation of the following mitigation measure would ensure that the project developer pay its fair share of funding toward the development of the new Meadowview police facility, which would result in a ***less-than-significant cumulative impact***.

5.7-2 *Implement Mitigation Measure 5.7-1.*

FIRE PROTECTION

This section describes existing fire protection services in the project area. Existing plans and policies relevant to fire protection issues associated with implementation of the project are provided. Potential impacts on fire protection services due to the project are evaluated based on analyses of service levels and project data. In addition, mitigation measures intended to reduce impacts to fire protection services are proposed, where appropriate.

Information for this section was obtained from project plans, the City of Sacramento 1988 General Plan, the Airport/Meadowview Community Plan, the draft City of Sacramento 2030 General Plan, the Sacramento Fire Department (SFD) website, communication with SFD staff, and other environmental and planning documentation for the project area.

ENVIRONMENTAL SETTING

The SFD provides fire suppression, emergency medical services, fire prevention, and special operations services within the City of Sacramento. Special operations include hazardous materials response, domestic preparedness, urban search and rescue, swift water rescue, and specialized/technical rescue services. The SFD employs approximately 535 fire suppression personnel and 100 fire prevention personnel and support staff.⁸ The SFD is divided into three offices: 1) the Office of the Fire Chief, providing fiscal management, special projects, and public information, 2) the Office of Operations, providing emergency services, special operations, and shift operations, and 3) the Office of Administrative Services, providing support to operations staff, including fire prevention, training, technical services, human resources, and emergency planning.⁹

Fire stations are strategically located throughout the city to provide assistance to area residents (see Figure 5.7-1). Each fire station operates within a specific district that covers a 1.5 mile radius geographical area around the station.¹⁰ Locating fire stations according to 1.5-mile radius service areas allows responders to arrive on a call within these response time goals.¹¹ In more densely populated areas and where call volumes are higher and occur simultaneously, a shorter radius is necessary.¹² A list of SFD fire stations and their respective equipment is provided in Table 5.7-1. The location of existing fire stations is illustrated in Figure 5.7-1.

The closest fire station to the project site is Station 16, located approximately one mile north of the project site at 7363 24th Street. Other fire stations nearby include Station 57, approximately three miles northeast, and Station 7, four miles east. Being the closest station at this time, Station 16 would be the most likely to respond to an incident occurring at the project site. Additional resources could respond from other nearby stations, if needed. All SFD fire stations have minimum hazardous

8 Lloyd Ogan, Deputy Chief, Operations, Sacramento Fire Department, written communication, May 8, 2007.

9 City of Sacramento, *FY 2006/07 Proposed Budget*, Section 15 – Fire, page 160.

10 Michelle Basurto, Program Specialist, Sacramento Fire Department, written communication, October 11, 2007.

11 Michelle Basurto, Program Specialist, Sacramento Fire Department, written communication, October 11, 2007.

12 Michelle Basurto, Program Specialist, Sacramento Fire Department, written communication, October 11, 2007.

TABLE 5.7-1

FIRE STATION FACILITIES AND EQUIPMENT

Station No.	Address	Battalion	Equipment
1	624 Q Street	1	Engine, Medic
2	1229 I Street	1	Engine, Truck, Medic,
4	3145 Granada Way	1	Engine, Medic
5	731 Broadway	1	Engine, Truck
14	1341 N. C Street	1	Engine
19	1700 Challenge Way	1	Engine
6	3301 M.L.King Blvd	2	Engine, Truck, Medic
8	5990 H Street	2	Engine
10	5642 66th Street	2	Engine, Truck, Medic,
56 ¹	3720 47th Avenue	2	Engine, Medic
60	3301 Julliard Drive	2	Engine
3 ¹	7208 W. Elkhorn Blvd	3	Engine
15	1591 Newborough Dr	3	Engine
17	1311 Bell Ave	3	Engine, Truck, Medic,
18 ¹	746 N. Market St	3	Engine
20	2512 Rio Linda Blvd	3	Engine, Truck, Medic,
30	1901 Club Center Dr	3	Engine, Truck, Medic,
7	6500 Wyndham Dr	4	Engine, Truck, Medic,
11	785 Florin Road	4	Engine
12	4500 24th Street	4	Engine
13	1100 43rd Avenue	4	Engine, Medic
16	7363 24th Street	4	Engine, Truck
57 ¹	7927 East Parkway	4	Engine

Note:

1. Stations located in contracted areas, not within city limits

Source: Michelle Basurto, Program Specialist, Sacramento Fire Department, written communication, October 11, 2007.

materials response capabilities, but Station 7 is the closest station to the project site with advanced hazardous materials response capabilities.¹³

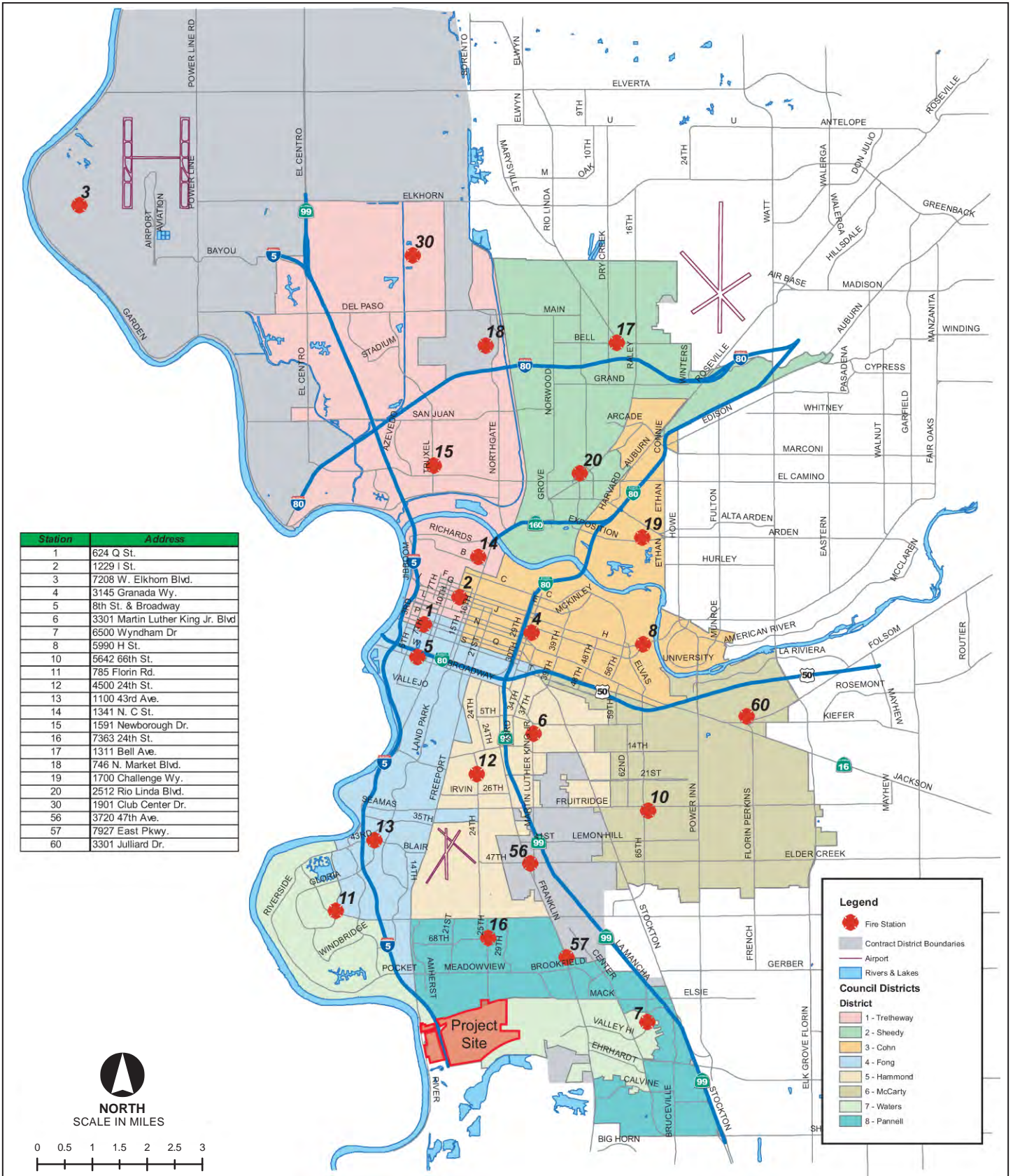
Stations are staffed by four-person companies for engine and truck companies and two-person companies for each medic unit. At a full station, which would include an engine, a truck, and a medic unit, there would be 10 staff per shift, for three shifts per day.¹⁴

The SFD has automatic aid agreements with all the fire departments and fire protection districts that receive dispatch services from the Sacramento Regional Fire/EMS Communications Center (SRFECC).¹⁵ The SRFECC is a Joint Powers Authority comprised of the SFD, Sacramento Metropolitan Fire District, Elk Grove Fire Department, Folsom Fire Department, and Galt Fire Protection District.

13 King Tunson, Sacramento Fire Department, written communication, January 9, 2008.

14 Angie Shook, Prevention and Plan Review, Sacramento Fire Department, written communication, May 8, 2007.

15 Captain Jim Doucette, Public Information Officer, Sacramento Fire Department, written notes, June 20, 2006.



Source: City of Sacramento, 2007.

FIGURE 5.7-1
Sacramento Fire Department Station Locations



D51311.00

Delta Shores

The SRFECC also provides dispatch services for the Courtland Fire Protection District, Herald Fire Protection District, McClellan Air Force Base Fire Department, Walnut Grove Fire Protection District, and Wilton Fire Protection District.¹⁶

In 2006, SFD responded to more than 69,000 calls for service.¹⁷ The average response time for all SFD engine companies in 2006 was 4.5 minutes, except in cases where additional resources are needed, which currently takes more than 9 minutes.¹⁸ Two major factors are considered when defining response times for fire and emergency medical services (EMS): 1) the critical timeframe that responders have to successfully assist victims of cardiac arrest (i.e., chances of surviving a cardiac arrest deteriorate approximately 10 percent for each minute that passes before cardio-pulmonary resuscitation (CPR) and/or defibrillation is initiated.), and 2) the critical timeframe that responders have to gain control of a fire, minimizing the impact on the structure and nearby structures.¹⁹ Based on these two critical issues, the SFD has a goal to have its first responding company, which provides for fire suppression and paramedic services, arrive within a 4 minute response time 90 percent of the time and medic units within 8 minutes, 90 percent of the time.²⁰ In the case of a fire, the goal is to have its first responding company arrive within a 4 minute response time 90 percent of the time, and an additional 10 responders within 8 minutes, 90 percent of the time.²¹ Locating fire stations according to 1.5-mile radius service areas allows responders to arrive on a call within these response time goals.²² In more densely populated areas and where call volumes are higher and occur simultaneously, a shorter radius is necessary.²³

Regulatory Context

Federal

There are no federal regulations regarding fire protection services that pertain to the proposed project.

State

California Occupational Safety and Health Administration

In accordance with California Code of Regulations, Title 8 Sections 1270 “Fire Prevention” and 6773 “Fire Protection and Fire Equipment”, the California Occupational Safety and Health Administration (Cal OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly

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- 16 Sacramento City Fire Department website, <www.cityofsacramento.org/fire>, accessed June 20, 2006.
- 17 Lloyd Ogan, Deputy Chief, Operations, Sacramento Fire Department, written communication, May 8, 2007.
- 18 Lloyd Ogan, Deputy Chief, Operations, Sacramento Fire Department, written communication, May 8, 2007.
- 19 Michelle Basurto, Program Specialist, Sacramento Fire Department, written communication, October 11, 2007.
- 20 Michelle Basurto, Program Specialist, Sacramento Fire Department, written communication, October 11, 2007.
- 21 Michelle Basurto, Program Specialist, Sacramento Fire Department, written communication, October 11, 2007.
- 22 Michelle Basurto, Program Specialist, Sacramento Fire Department, written communication, October 11, 2007.
- 23 Michelle Basurto, Program Specialist, Sacramento Fire Department, written communication, October 11, 2007.

combustible materials, fire hosing sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all fire fighting and emergency medical equipment.

Uniform Fire Code

The Uniform Fire Code (UFC) 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 UFC 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, which includes regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise building, childcare facility standards, and fire suppression training.

Local

City of Sacramento 1988 General Plan

The following goals and policies from the City of Sacramento General Plan are applicable to the proposed project.

Fire Service

Goal A Provide adequate fire service for all areas of the City.

Policies

1. Continue to support all efforts directed at providing the best fire protection services for the east cost.
2. Ensure that adequate water supplies are available for fire-fighting equipment in newly developing areas.
3. Work with the various fire protection districts bordering the City in establishing centralized communications and fire-fighter training facilities.
4. Promote greater coordination of land use development proposals with the Fire Department in order to insure adequate on-site fire protection provisions.
5. Promote greater use of fire sprinkler systems for both commercial and residential use.

City of Sacramento 2030 General Plan

The City is in the process of updating its General Plan anticipated to be adopted in late 2008. Therefore, applicable policies from the draft 2030 General Plan are included below.

Policies

- PSH 2.1.2 **Response Time Standards.** The City shall strive to maintain appropriate emergency response times to provide optimum fire protection and emergency medical services to the community.
- PSH 2.1.3 **Staffing Standards.** The City shall maintain optimum staffing levels for sworn, civilian, and support staff, in order to provide quality fire protection and emergency medical services to the community.
- PSH 2.1.4 **Response Units and Facilities.** The City shall provide additional response units, staffing, and related capital improvements, including constructing new fire stations, as necessary, in areas where a company experiences call volumes exceeding 3,500 in a year to prevent compromising emergency response and ensure optimum service to the community.
- PSH 2.1.5 **Timing of Services.** The City shall ensure that the development of fire facilities and delivery of services keeps pace with development and growth of the city.
- PSH 2.1.6 **Locations of New Stations.** The City shall ensure that new fire station facilities are located strategically throughout the city to provide optimal response times to all areas.
- PSH 2.1.7 **Future Station Locations.** The City shall require developers to set aside land with adequate space for future fire station locations in areas of new development.
- PSH 2.1.10 **Regional Cooperative Delivery.** The City shall work with the various fire protection districts and other agencies to promote regional cooperative delivery of fire protection and emergency medical services.
- PSH 2.1.11 **Development Fees for Facilities and Services.** The City shall require development projects to contribute fees for fire protection services and facilities.
- Goal PSH 2.2 Fire Prevention Programs and Suppression. The City shall deliver fire prevention programs that protect the public through education, adequate inspection of existing development, and incorporation of fire safety features in new development.**

Policies

- PSH 2.2.2 **Development Review for New Development.** The City shall continue to include the Fire Department in the review of development proposals to ensure projects adequately address safe design and on-site fire protection and comply with applicable fire and building codes.
- PSH 2.2.4 **Water Supplied for Fire Suppression.** The City shall ensure that adequate water supplies are available for fire-suppression throughout the city, and shall require development to construct all necessary fire suppression infrastructure and equipment.

Airport/Meadowview Community Plan

The following goals, objectives, and policies are from the Airport/Meadowview Community Plan (adopted April 17, 1984) and are applicable to the proposed project.

PUBLIC FACILITIES AND SERVICES ELEMENT

- Goal 1 Ensure that the level of City services in the Airport Meadowview community meet City-wide standards.**

Policies

1. Ensure that necessary public facilities and services are provided to meet projected demands.
12. Encourage citizen and merchant groups to make use of crime and fire prevention programs. These programs include homes alert, armed robbery and burglary protection, security surveys, and employee training and personal safety programs.
13. Require that a new fire station able to handle hazardous materials be provided within any proposed high technology industrial development; or facilities and services adequate to serve any alternative developments within the developing southern area, based on a fire response radius of two miles.

South Area Community Plan

The City anticipates adopting the South Area Community Plan as part of the 2030 General Plan. The following policy is relevant to fire protection in the Community Plan area.

SA.PHS 1.2 **Public Service Coordination.** The City shall coordinate among the various agencies in the South Area in order to better provide public services across Sacramento County and city borders.

Sacramento City Code

The following City ordinances from the Sacramento City Code are applicable to the proposed project:

Section 8.100.540 - All buildings or portions thereof shall be provided with the degree of fire resistive construction as required by the California Building Code for the appropriate occupancy, type of construction and location on property or in fire zone; and shall be provided with the appropriate fire-extinguishing systems or equipment required by the California Building Code.

Chapter 15.36 includes numerous codes relating to the inspection and general enforcement of the City of Sacramento fire code, control of emergency scenes, permits, general provisions for safety, fire department access, equipment, and protection systems, and many standards for fire alarm systems, fire extinguisher systems, commercial cooking operations, combustible materials, heat producing appliances, exit illumination, emergency plans and procedures, etc.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

Demands for fire service have been determined in consultation with SFD staff. This impact analysis determines whether the proposed project would require the construction or expansion of existing facilities necessary to house additional firefighters required to respond to emergency and fire suppression calls associated with the project. The SFD does not have an official staffing ratio goal. The department uses a number of measures to determine need for fire protection services, including providing for one station for every 1.5 mile service radius, for every 16,000 population, and/or areas where a company experiences call volumes exceeding 3,500 in a year.²⁴ Siting fire stations within these criteria generally enable the SFD to respond to emergency calls within its 4 to 6 minute response time goal. This analysis will assess whether calls for service generated within the project site could be responded to within 4 to 6 minutes based on population served, distance to the nearest station, and input from the SFD.

Standards of Significance

For the purposes of this EIR, impacts on fire protection are considered significant if the proposed project would:

24 Michelle Basurto, Program Specialist, Sacramento Fire Department, written communication, October 11, 2007.

- require, or result in, the construction of new, or the expansion of existing, facilities related to the provision of fire protection.

Project-Specific Impacts and Mitigation Measures

5.7-3 The proposed project could result in the construction of new, or expansion of existing fire facilities, which could result in adverse environmental impacts.

The proposed project would develop a maximum of 5,092 new homes of varying densities, which would result in a population of approximately 13,086. In addition to residential uses, the proposed project would develop over 140 acres of commercial uses, over 160 acres of parks, open space, wetland areas, and trails, along with various public facilities.

Based on the fire department's goal ratio of one station for every 16,000 residents, the project alone would not require the need to construct a new facility, although the addition of 13,086 residents would make up a substantial portion of that demand. In addition, portions of the project site are not within 1.5 miles of a fire station, so it is unlikely that those stations would be able to respond to incidents within those areas of the project site within the 4 to 6 minute response time goal. Based on this information, the SFD determined that the proposed project would exceed current SFD service levels and adversely affect response times.²⁵ However, land for a new fire station is included within the eastern portion of the project site. Development of this fire station would ensure that the entire project site is located within 1.5 miles of a fire station, as well as provide additional coverage to some areas outside of the project site. The SFD has indicated that this fire station would be adequate to provide fire protection services to the project site and surrounding areas.²⁶ The SFD would construct the station however no timeline has been established at this time. The SFD had originally asked the project applicant to provide an interim fire station to ensure that full fire protection coverage was provided to the residential uses proposed west of I-5. However, since that time, the project applicant has revised the phasing plan for the proposed project to ensure that the permanent fire station planned north of Cosumnes River Boulevard would be in full operation prior to the development of the area west of I-5. The SFD has determined that this would ensure adequate fire protection for the entire project site.²⁷

The physical effects of constructing these facilities have been addressed in this EIR. The exact location of the fire station would need to be approved by the SFD prior to approval the final land use diagram. Therefore, because the proposed project includes the development of a fire station that would be constructed to meet the SFD's needs and would serve the project this is considered a ***less-than-significant impact***.

Mitigation Measure

None required.

25 King Tunson, Sacramento Fire Department, written communication, January 9, 2008.

26 King Tunson, Sacramento Fire Department, written communication, January 9, 2008.

27 King Tunson, Sacramento Fire Department, personal communication, July 22, 2008.

Cumulative Impacts and Mitigation Measures

The cumulative context for the provision of fire protection services is the southern area of the City of Sacramento, which is the service area for the project. Because fire protection services are based on the fastest response possible, impacts on fire services resulting from growth in other portions of the city, such as in the North Natomas area, would not likely cause much of an affect on the project site and surrounding area. Development in areas served by the same fire stations that would likely respond to an incident at the project site would be more likely to affect fire protection services at the project site. Areas within the Airport/Meadowview or south area also have similar densities and land uses, and would be most affected by development of the proposed project.

5.7-4 The proposed project, in combination with other development in the southern portion of the city, could result in the construction of new, or expansion of existing fire facilities, which could result in adverse environmental impacts.

The proposed project would add up to approximately 13,086 new residents to one of the fastest-growing areas in the city. The project combined with other development within the service area would undoubtedly create an increased need for fire protection services that would be provided by the SFD. Development of the proposed project could potentially cause a decrease in levels of service to other areas of the city served by the SFD, especially those areas currently served by Stations 16, 57, and 7, which are the closest stations to the project site. Other cumulative development within the Airport/Meadowview area and south Sacramento could further increase the demand on fire protection services provided by those stations.

Population projections for the Airport/Meadowview block group are estimated at 60,248 by 2025, up from 37,804 in 2003.²⁸ This would be an increase of 22,444 people, of which the project would account for less than 14,000 residents. However, the project's contribution on a cumulative level would be considerable. Based on SFD's measures for determining the need for new facilities, including one fire station per 16,000 residents, the 1.5 mile service area radius surrounding each fire station, and additional stations for areas with more than 3,500 calls for service each year, the Airport/Meadowview areas would require at least one additional station in order to provide adequate fire protection services to the entire area. The development of a new fire station within this area could possibly result in adverse impacts on the environment. The physical effects of constructing this new facility would be evaluated at the time a specific location and the funding is available to construct the facility.

The proposed project includes the development of a new fire station that would serve the project site as well as areas immediately adjacent to the project boundaries. Environmental impacts resulting from the development of the proposed fire station are analyzed in appropriate sections of this EIR.

Because adequate fire protection service would be provided to serve the proposed project site through construction of a new fire station, it is anticipated that the cumulative demand generated by

28 City of Sacramento, Development Services Department, Planning Division, Long Range Planning, *Population Housing and Employment Report*, December 2004, page 22.

the project as well as other development in this area of the city would serve not only the project, but other development in the area, resulting in a ***less-than-significant cumulative impact***.

Mitigation Measure

None required.

SCHOOLS

INTRODUCTION

This section describes existing schools and school services in the project area. Existing facilities are listed and any expansion of existing facilities or the construction of new facilities is also discussed. Potential impacts on existing schools as a result of implementation of the proposed project are evaluated, based on whether the proposed project would create an increased demand for schools that would exceed the current or projected capacity such that new or physically altered school facilities would be constructed.

Information for this section was obtained from project plans, the City of Sacramento 1988 General Plan, the draft City of Sacramento 2030 General Plan, the Airport/Meadowview Community Plan, the Sacramento City Unified School District (SCUSD) Facilities Master Plan 2006-2015, the SCUSD website, the California Department of Education website, and other environmental and planning documentation for the project area.

ENVIRONMENTAL SETTING

The SCUSD provides school services to the project site and surrounding area. The SCUSD operates 88 schools, including 54 elementary schools (K-6), 6 K-8 schools, 8 middle schools (6 serve grades 7-8, 2 serve grades 6-8), 6 high schools, 1 continuation school, 1 independent study school (K-12), 1 alternative school, 6 charter schools, and 5 adult education centers.²⁹ For the 2005-2006 school year, the SCUSD had an enrollment of 50,408 students³⁰ in grades K-12, making it one of the 10 largest school districts in the state.³¹

The project site is located within the service areas of the new John Still Elementary School for grades K-6, John Still Middle School for grades 7 and 8, and Luther Burbank High School for grades 9-12.³² John Still Elementary School opened in September 2007 and is located approximately one-quarter mile north of the project site on John Still Drive. The elementary school is located adjacent to John Still Middle School, which, prior to the 2007-2008 school year, was known as John Still Elementary School and served the area as a K-8 school. With the opening of the elementary school, it was converted to a middle school serving grades 7-8. The SCUSD also reorganized some school attendance areas to accommodate these changes.

Due to the opening of the new John Still Elementary School, conversion of the previously existing John Still School from a K-8 school to a middle school, and the resulting reorganization of the school attendance areas, the exact capacities and enrollments at these schools are somewhat transitional. At this time, three classes from the new John Still Elementary School are being housed at the John Still Middle School campus, due to lack of capacity at the new school. Current enrollment at the new

29 Sacramento City Unified School District website, <www.scusd.edu>, accessed July 3, 2007.

30 California Department of Education, Educational Demographics Unit, District Summary Data, <<http://dq.cde.ca.gov>>, accessed March 16, 2007.

31 Sacramento City Unified School District website, <www.scusd.edu>, accessed July 3, 2007.

32 Sacramento City Unified School District, School Assignment Area Maps for Elementary, Middle, and High Schools for 2007/2008.

school is approximately 520 students, while the school's actual capacity is closer to 420.³³ According to information provided by the SCUSD, the capacity of the previously existing John Still School was 1,184 for the 2006-2007 school year.³⁴ It should be noted that the school still served grades K-8 at that time, but since the facility size was not reduced as part of the conversion of the school to a middle school, this analysis assumes the same capacity. Due to the conversion and reorganization of school attendance areas, enrollment numbers are also considered to be transitional. Facility capacity at Luther Burbank High School for the 2006-2007 school year was 3,060.³⁵ However, for the 2007-2008 school year, it was determined that a capacity of 3,050 was not accurate for Luther Burbank High School, so the SCUSD reduced the school's capacity to 2,000 students in order to comply with applicable regulations.³⁶ According to the California Department of Education, enrollment at Luther Burbank High School for the 2006-2007 school year was 2,047.³⁷ Based on this information, including the fact that capacities and enrollments at John Still Elementary School and John Still Middle School are transitional at this time, this analysis assumes that all of these schools are currently over-enrolled beyond capacity.

Regulatory Context

Federal

There are no federal regulations regarding schools that pertain to the proposed project.

State

California State Assembly Bill 2926 (AB 2926) – School Facilities Act of 1986

AB 2926 authorizes entities to levy statutory fees on new residential and commercial/industrial development in order to pay for school facilities. AB 2926, entitled the "*School Facilities Act of 1986*," was expanded and revised through the passage of AB 1600, which added Section 66000 *et seq.* of the Government Code.

Proposition 1A/Senate Bill 50

Proposition 1A/Senate Bill (SB) 50 (Chapter 407, Statutes of 1998) is a school construction measure that defined the Needs Analysis process in Government Code Sections 65995.5-65998. Under the provisions of SB 50, school districts may collect fees to offset the costs associated with increasing school capacity as a result of development. The fees (referred to as Level One fees) are assessed based upon the proposed square footage of residential, commercial/industrial, and/or parking structure uses. Level Two fees require the developer to provide one-half of the costs of

33 Andy O'Neil, Assistant Principal, John Still Elementary School, Sacramento City Unified School District, personal communication, November 14, 2007.

34 Jim Dobson, Director of Planning and Construction, Sacramento City Unified School District, personal communication, October 9, 2007.

35 Jim Dobson, Director of Planning and Construction, Sacramento City Unified School District, personal communication, October 9, 2007.

36 Paul Woods, Senior Vice President, Economic Planning Systems, Inc., written communication, August 11, 2008.

37 California Department of Education, Educational Demographics Unit, Dataquest – School Level Enrollment Reports, <http://dq.cde.ca.gov/dataquest>, accessed November 14, 2007.

accommodating students in new schools, while the state would provide the other half. Level Three fees require the developer to pay the full cost of accommodating the students in new schools and would be implemented at the time the funds available from Proposition 1A are expended. School districts must demonstrate to the state their long-term facilities needs and costs based on long-term population growth in order to qualify for this source of funding. However, voter approval of Proposition 55 on March 2, 2004, precludes the imposition of the Level Three fees for the foreseeable future. Therefore, once qualified, districts may impose only Level Two fees, as calculated according to SB 50. Under this statute, payment of statutory fees by developers would serve as total CEQA mitigation to satisfy the impact of development on school facilities.

Local

City of Sacramento 1988 General Plan

The following City of Sacramento General Plan goals and policies are applicable to the proposed project.

Goal A Continue to assist school districts in providing quality education facilities that will accommodate projected student enrollment growth.

Policies

1. Assist school districts with school financing plans and methods to provide permanent schools in existing and newly developing areas in the City.
2. Involve school districts in the early stages of the land use planning process for the future growth of the City.
3. Designate school sites on the General Plan and applicable specific plans of the City to accommodate school district needs.

City of Sacramento 2030 General Plan

The City is currently in the process of revising its General Plan and anticipates adopting its new 2030 General Plan by the end of 2008. Therefore, applicable policies from the draft 2030 General Plan are included below.

Policies

- ERC 1.1.1 **School Locations.** The City shall work with school districts at the earliest possible opportunity to provide school sites and facilities that are located in the neighborhoods they serve.
- ERC 1.1.2 **Locational Criteria.** The City shall continue to assist in reserving school sites based on each school district's criteria and on the City's following location criteria:
- Locate elementary schools on sites that are safely and conveniently accessible, and away from heavy traffic, excessive noise, and incompatible land uses.
 - Locate school sites centrally with respect to their planned attendance areas.
 - Locate schools in areas where established and/or planned walkways, bicycle paths, or greenways link schools with surrounding uses.
 - Locate, plan, and design new schools to be compatible with adjacent uses.
- ERC 1.1.4 **Joint-Use Development.** The City shall work with school districts to explore opportunities for joint-use development that integrates uses for recreation, cultural, and non-school-related activities at new and existing facilities.

Airport/Meadowview Community Plan

The following goals, objectives, and policies are from the Airport/Meadowview Community Plan (adopted April 17, 1984) and are applicable to the proposed project.

PUBLIC FACILITIES AND SERVICES ELEMENT

Goal 1 **Ensure that the level of City services in the Airport Meadowview community meet City-wide standards.**

Objective 2 **Provide high quality education and facilities in proper locations, as determined by the Sacramento City Unified School District.**

Policies

7. Continue designation of the John Bigler site for an elementary school, and ensure provision of two additional elementary school sites within the currently undeveloped southern area of the community, to meet the need identified by Sacramento City Unified School District.
8. The City and the Sacramento City Unified School District together should develop a program to aid in providing adequate school facilities.
9. Incorporate the recommendations and policies of the Recreation Master Plan when it is completed and adopted. The preliminary recommendations pertaining to park site acreage include:
 - a) development of a neighborhood school park adjacent to the future elementary school site which is designated in the southeast area of the community; and
 - b) expansion of Meadowview Park westward and development of appropriate acreage and facilities so that the status changes from a neighborhood park to a community park, as defined by the Recreation Master Plan.

South Area Community Plan

The following policy from the South Area Community Plan is applicable to the project.

SA.ERC 1.1 **School District Coordination.** The City shall work with the Sacramento City Unified School District and Elk Grove Unified School District to ensure that adequate school facilities, including alternative or charter schools, are available in the South Area.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

Impacts on schools are determined by analyzing the projected increase in demand for schools as a result of the proposed project and comparing the projected increase with the schools' remaining capacities to determine whether new or altered facilities would be required. Impacts on schools are considered to be less than significant with payment of the state Department of Education Development Fee, which was enacted to provide for school facilities construction, improvements, and expansion.

Construction activities are not anticipated to result in an additional demand for schools, nor are the commercial elements of the proposed project. The operational analysis focuses on the number of residential units that would result from development of the proposed project. Consequently, this analysis includes only the residential component of the proposed development.

Estimates for the number of students that would be generated by a project are usually calculated using standard student generation rates used by school districts. However, this analysis uses the student generation estimate provided in the SCUSD's Facilities Master Plan 2006-2015. The Facilities Master Plan estimated student generation for some of the larger anticipated development projects within the SCUSD service area, including the Delta Shores project.

The SCUSD Facilities Master Plan 2006-2015 estimated that under a worst-case scenario, the Delta Shores project, based on an estimate of 6,400 homes to be constructed, would generate up to 3,435 students at buildout. The Master Plan estimated a student distribution of 60 percent for grades K-6, 18 percent for middle school, and 22 percent for high school. This would result in 2,070 K-6 students, 625 middle school students, and 760 high school students.³⁸ However, the proposed project includes the development of 5,092 residences, so the student generation estimates from the SCUSD's Master Plan are overstated. Based on the estimate of 3,435 students, the Master Plan anticipated that each home developed within the project would generate 0.537 students. Using this rate, the project, as proposed with a maximum of 5,092 homes, would generate approximately 2,734 students, 701 fewer than estimated in the Master Plan. Using the distribution percentages provided by the Master Plan (60 percent K-6, 18 percent 7-8, and 22 percent 9-12), approximately 1,640 students would be elementary school students, 492 would be middle school students, and 601 would be high school students. Therefore, this analysis uses these estimates in the evaluation of the need for new or expanded school facilities.

Standards of Significance

For the purposes of this EIR, impacts on schools are considered significant if the proposed project would:

- require, or result in, the construction of new, or the expansion of existing, facilities related to the provision of school services.

Project-Specific Impacts and Mitigation Measures

5.7-5 The proposed project would result in the construction of new, or expansion of existing school facilities, which could result in adverse environmental impacts.

The proposed project would develop up to 5,092 new homes within the project site, which would add school children to the area who would attend SCUSD schools. As described in the Methods of Analysis, above, and based on the estimates and methodologies provided in the SCUSD's Facilities Master Plan, the proposed project would generate a total of approximately 2,734 students, including 1,640 elementary (K-6) school students, 492 middle (7-8) school students, and 601 high (9-12) school students.

As stated in the Environmental Setting, the capacities and enrollments at John Still Elementary School and John Still Middle School are currently undergoing changes due to the recent opening of the elementary school, conversion of the previously existing school, and reorganization of school

38 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-51.

boundaries. This has resulted in a transitional student enrollment exceeding available capacity at the new elementary school, as well as made it difficult to pin-point exact capacity data for the middle school; therefore, the analysis assumes over-enrollment at both schools. Luther Burbank High School is also over-enrolled.

The proposed project includes land for the future development of two elementary schools, although because the SCUSD has expressed that they may not need both elementary schools, the project includes an option to not develop one of the schools and instead develop that area with low density residential. The CDE's 2000 "School Site Analysis and Development" guidebook includes the assumption that land purchased for school sites would be in a ratio of approximately 2 to 1 between the developed grounds and the building area. For example, a school that houses kindergarten through sixth grade and has an enrollment of 600 children, the recommended acreage is 9.2 acres. Since both elementary schools within the proposed project are similarly sized, this analysis assumes that both schools would be sized to accommodate 600 students each, for a total of 1,200 students. With 1,640 new K-6 students expected to be generated by the proposed project, this would still result in the need for additional K-6 school facilities to serve the approximately 440 additional students. If the SCUSD determines that the elementary school proposed in the northern portion of the project site is not needed at that location, this would mean that over 1,000 elementary school students generated within the proposed project would attend schools located off-site. It is anticipated that at full buildout of the project adequate elementary and middle school capacity may be available at the John Still Elementary and Middle school. However, because no middle school is included in the proposed project to accommodate the 7-8 grade students generated by the proposed project, new middle school facilities would also be required. In addition, since Luther Burbank High School is already over-enrolled, high school students generated by the proposed project would require new or expanded high school facilities.

The project applicant and/or developer(s) would be required to contribute fees towards school facilities funding. Funding for new school construction is provided through state and local revenue sources. Due to the passage of Proposition 1A in November 1998, SB 50 (Chapter 407, Statutes of 1998) was enacted to change the way school districts can levy developer fees. SB 50 has resulted in full state preemption of school mitigation. SB 50 enables the district to collect a fee that is equal to the current statutory Level I fees. Where justified, SB 50 allows the district to collect additional fees in an amount that would approximate 50 percent of the cost of additional facilities. The collection of the 50 percent mitigation fees is with the assumption that the State School Facility funding program remains intact and that state funds are still available for partial funding of new school facilities. If the funds are not available, districts may collect up to 100 percent mitigation fees under certain circumstances. Although school impact fees are often insufficient to fund 100 percent of new school facility construction and operation, the California State Legislature has declared the school impact fee to be full and adequate mitigation under CEQA. Because the proposed project would be required to pay all applicable fees, the impact would be considered ***less than significant***. The physical environmental impacts resulting from construction and operation of up to two elementary schools, including increase in traffic, air pollutants and noise, are analyzed in this EIR.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

The cumulative context for the analysis of school services is development within the service area of the SCUSD through 2015, which currently is the planning period of the SCUSD's Facilities Master Plan.

5.7-6 The proposed project could contribute to the cumulative need for the construction of new, or expansion of existing, school facilities within the SCUSD service area. The construction or expansion of these facilities could result in adverse environmental impacts.

According to the SCUSD Facilities Master Plan, the SCUSD is tracking 28 development projects proposed within its service area, including the proposed project. The Facilities Master Plan estimates that these 28 projects could generate up to 15,086 new students within the SCUSD service area.³⁹ Currently, 52 SCUSD schools are operating at 90 percent capacity, which the SCUSD considers overcrowded. Of these, 28 schools are operating with more students than their capacities can accommodate, with several in the south area.⁴⁰ With so many of its schools nearing or already exceeding capacity, combined with the addition of over 15,000 students to the SCUSD by 2015, several new schools would be required to continue to provide adequate school services within the district. The project includes two new elementary schools that would help to accommodate students generated by the project. In addition, several existing schools would require expansions and improvements as well. Each of the schools constructed to accommodate the increase in student enrollment could potentially result in adverse impacts on the physical environment. However, each project to be constructed within the SCUSD service area, including the proposed project, would be required to pay the Department of Education Development Fees to contribute toward funding to pay for new schools and expansions to existing schools. Since the California State Legislature has declared payment of the school impact fee to be full and adequate mitigation under CEQA, payment of these fees by each project within the SCUSD service area would make this a ***less-than-significant cumulative impact***.

Mitigation Measure

None required.

39 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-12.
40 City of Sacramento, *General Plan Update Technical Background Report*, September 27, 2006, Section 5.6, Schools, page 5.6-2.

PARKS

This section summarizes the parks and recreational facilities provided in the City of Sacramento. Existing facilities are listed and any expansion of existing facilities or the construction of new facilities is discussed. Existing plans and policies relevant to parks and recreation are also provided. Potential impacts on parks and recreation as a result of the proposed project are evaluated, based on the guidelines in the City of Sacramento Parks and Recreation Master Plan (PRMP) and whether the proposed project would create an increased demand for the provision of park services that would exceed the current or planned level of facilities.

Information for this section was obtained from project plans, the City of Sacramento 1988 General Plan, General Plan Update Technical Background Report (2005), draft City of Sacramento 2030 General Plan, and the City of Sacramento Parks and Recreation Master Plan 2005-2010.

ENVIRONMENTAL SETTING

The City of Sacramento Department of Parks and Recreation (Department) maintains more than 3,100 acres of both developed and undeveloped parkland, and manages more than 204 parks, 81 miles of on- and off- road bikeways and trails, 17 lakes, ponds, or beaches, over 20 aquatic facilities, and 18 community centers.^{41,42} The Department also manages the 15-acre Camp Sacramento, which is located in El Dorado County.⁴³ The City of Sacramento Parks and Recreation Master Plan (PRMP) identifies 11 planning areas. The proposed project is located within Planning Area 11, also known as the Airport/Meadowview Planning Area.

Parks in the Sacramento area are generally categorized into three distinct park types by the Department: 1) Neighborhood, 2) Community, and 3) Regional parks. Neighborhood Parks are generally 5 to 10 acres in size and are used primarily by people who live within ½ mile of the park. These facilities may include a tot lot, adventure area, unlighted sports fields, and picnic areas. Urban plazas and pocket parks are also considered neighborhood parks, but are smaller in size with less than 5 acres and are generally more appropriate for denser urban areas. They serve the same basic functions as do the Neighborhood Parks, but on a smaller scale. Community Parks are 10 to 60 acres in size and are developed to meet the requirements of a large portion of city residents, generally serving populations within 2 to 3 miles. Community Parks include the same features as Neighborhood Parks, but may include additional amenities, such as large picnic areas, a community garden, a skate park, restrooms, on-site parking, bicycle trail, nature area, dog park, and lighted sports fields or courts. Community centers, water play areas, and swimming pools may be located in some specialized Community Parks. Regional Parks are developed to serve whole communities, and often include destination attractions, such as a marina, amusement area, zoo, or other region-wide attractions. In addition to developed parkland, the Department maintains open space and parkways, which are natural areas that have been set aside for environmental enhancement. Parkway are generally narrow and linear situated along a waterway, abandoned railroad, or other

41 City of Sacramento, *General Plan Technical Background Report*, September 27, 2005, page 5.3-1-2.

42 City of Sacramento, *Parks and Recreation Master Plan 2005-2010*, adopted December 2004, Services Chapter, page 1.

43 City of Sacramento, *General Plan Technical Background Report*, September 27, 2005, page 5.3-2.

corridor, and often act pedestrian and bicycle linkages between residential areas, schools, parks, and trail systems.⁴⁴

City parks contain a variety of recreational facilities, with areas available for organized sports, including soccer fields, baseball diamonds, tennis courts, volleyball courts, and basketball courts. Additionally, benches, picnic tables, and barbecues are available for informal recreation activities. There are many play areas for children in the City's parks. Biking and walking trails are also utilized. In addition, swimming pools and wading and play pool facilities are available to the public. Additional recreational facilities include community centers; bocce ball courts; equestrian trails; four 18-hole golf courses; and two 9-hole golf courses.⁴⁵ Specialized recreational facilities include the Shepherd Garden & Art Center, the Southside Jogging Center, the Mangan Rifle and Pistol Range, and the Sacramento Horsemen's Association.⁴⁶

The Department also provides for community services as well as recreational and leisure time opportunities. The Department offers adult and youth sports classes; special events; after-school, summer, and aquatic programs; community classes and enrichment programs; and reservations for baseball and softball fields, picnics, and facilities.

Existing Parks and Recreational Facilities

In the city, there are a total of approximately 704 acres of Neighborhood Parks, 861 acres of Community Parks, 665 acres of Regional Parks, 319 acres of parkway areas, and 634 acres of open space areas.⁴⁷ The Airport/Meadowview Planning Area contains 17 parks totaling approximately 131 acres, approximately 93 acres of which is developed parkland, while approximately 38 acres is undeveloped. The Airport/Meadowview Planning Area contains 74.4 acres of Neighborhood Parks and 79.0 acres of Community Parks.⁴⁸ The Bill Conlin Youth Regional Sports Complex is the only regional facility in the Planning Area.

There are six parks within one mile of the project site, including the Bill Conlin Regional Youth Sports Complex and the Pannell/Meadowview Community Park, which includes a community center and swimming pool. Other neighborhood parks within this range include Freeport Park, Meadowview Park, Anthony Park, all of which are located south of Meadowview Road, and Kemble Park. Three park sites are also located within one mile of the project site, including one in the North Delta Shores Subdivision, adjacent to the project site to the north. The Bill Conlin Regional Youth Sports Complex includes approximately 17.3 acres of recreational facilities and is located on the west side of I-5 just north of the western portion of the project site. The Pannell/Meadowview Community Park is 12.54 acres, and is approximately ½ mile north of the project site. Other parks include the 4.11-acre

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- 44 City of Sacramento, *Parks and Recreation Master Plan 2005-2010*, Adopted December 2004, Policy Chapter, page 16.
- 45 The City's golf courses are managed by the City of Sacramento Convention, Culture and Leisure Department.
- 46 City of Sacramento, *General Plan Technical Background Report*, September 27, 2005, page 5.3-8 – 5.3-9.
- 47 City of Sacramento, *General Plan Technical Background Report*, September 27, 2005, page 5.3-3.
- 48 City of Sacramento, *General Plan Technical Background Report*, September 27, 2005, page 5.3-3.

Freeport Park, approximately 1/2 mile north, the 8.13-acre Meadowview Park, less than 1,000 feet north of the project site, and the 1.7-acre Kemble Park, approximately one mile northeast.

Planned Parks and Recreational Facilities

The PRMP contains a service level goal of 5.0 acres of neighborhood and community parks per 1,000 residents.⁴⁹ The PRMP outlines the total amount of acres needed by 2010 in order to meet this goal. The PRMP projects a population for the city based on the City's Planning Department, the 2000 US Census, and the Department of Finance. The Parks and Recreation Department has policies in place that require formal updates to the PRMP a minimum of every five years. A technical update to the PRMP is underway with adoption anticipated by the end of 2008.

By 2010, the City of Sacramento is expected to grow to 497,544 residents. In order to serve this population, the City must increase the amount of acres dedicated to parks and open space. The acreage service level analysis in the PRMP identifies the need for approximately 315 acres of neighborhood/community serving acres by 2010 to serve city residents. The analysis also identifies the need for 460 acres of citywide/regionally serving acres by 2010 to meet the Service Level Goal of 8.0 acres per 1,000 residents for regional parks. The City would also need 168 miles of trails or bikeways to meet the Service Level Goal of 0.5 miles per 1,000 residents by 2010.⁵⁰

Regulatory Context

Federal

There are no federal regulations regarding parks and/or recreation that pertain to the proposed project.

State

Government Code 65560

Government Code 65560 defines open space as:

- (b) "Open space land" is any parcel or area of land or water which is essentially unimproved and devoted to an open space use as defined in this section, and which is designated on a local, regional or state open space plan as any of the following:
 - (1) Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays and estuaries; and coastal beaches, lake shores, banks of rivers and streams, and watershed lands.
 - (2) Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of ground water basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.

49 City of Sacramento, *Parks and Recreation Master Plan 2005-2010*, Adopted December 2004, Assessment Chapter, Table 8, page 7.

50 City of Sacramento, *Parks and Recreation Master Plan 2005-2010*, Adopted December 2004, Assessment Chapter, pages 7-8.

- (3) Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lake shores, beaches, and rivers and streams; and areas which serve as links between major recreation and open space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.
- (4) Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high re risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

Quimby Act

California Government Code Section 66477, Subdivision Map Act, referred to as the Quimby Act, permits local jurisdictions to require the dedication of land and/or the payment of in-lieu fees solely for park and recreation purposes. The required dedication and/or fee are based upon the residential density, parkland cost, and other factors. Land dedicated and fees collected pursuant to the Quimby Act may only be used for developing new, or rehabilitating existing park or recreational facilities.

Local

City of Sacramento 1988 General Plan

The following goals and policies from the City of Sacramento General Plan are applicable to the proposed project.

Goal A Provide adequate parks and recreational services in all parts of the City, adapted to the needs and desires of each neighborhood and community. Attempt to achieve the Acreage Service Level Goals established in the Parks and Recreation Master Plan.

Policies

1. Encourage private development of recreational facilities that complement and supplement the public recreational system.
2. Give high priority to acquiring land and improving parks, open space and recreation uses in redevelopment, Community/Specific Plan and infill target areas where these uses are deficient.
3. Encourage joint development of parks with compatible uses such as new schools, libraries and detention basins.
4. Apply Smart Growth and environmental sustainability principles to park and recreation facility planning, location, design and management.
5. Design parks to enhance and preserve natural site characteristics and environmental values.
7. Locate community and regional parks and linear recreational areas on or adjacent to major thoroughfares.
9. Continue the practice of partnering with school districts and the community to provide neighborhood or community serving outdoor recreation facilities on and adjacent to public schools.
11. Ensure adequate public access to the American and Sacramento Rivers in developing areas.

City of Sacramento 2030 General Plan

The City anticipates adopting its new 2030 General Plan by the end of 2008. The City is in the process of updating the General Plan and anticipates adopting a new General Plan by the end of 2008. Therefore, applicable policies from the draft 2030 General Plan are included below.

Goal ERC 2.1 Integrated Parks and Recreation System. Provide an integrated system of parks, open space areas, and recreational facilities that are safe and connect the diverse communities of Sacramento.

Policies

ERC 2.1.2 Connected Network. The City shall connect all parts of Sacramento through integration of recreation and community facilities with other public spaces and rights-of-way (e.g., buffers, medians, bikeways, sidewalks, trails, bridges, and transit routes) that are easily accessible by alternative modes of transportation. (MPSP)

Goal ERC 2.2 Parks, Community and Recreation Facilities and Services. Plan and develop parks, community and recreation facilities, and services that enhance community livability; improve public health and safety; are equitably distributed throughout the city; and are responsive to the needs and interests of residents, employees, and visitors.

Policies

ERC 2.2.2 Timing of Services. The City shall ensure that the development of parks and community and recreation facilities and services keeps pace with development and growth within the city.

ERC 2.2.3 Service Level Goals. The City shall develop and maintain parks and recreational facilities in accordance with the goals in Table ERC 1.

TABLE ERC 1	
PARKS, COMMUNITY FACILITY, AND RECREATION FACILITY SERVICE LEVEL GOALS	
Park Types	Acres per 1,000 Residents
Neighborhood Serving: Urban plazas, pocket parks and/or Neighborhood Parks	2.5 acres
Community Serving: Community Parks	2.5 acres
Citywide/Regionally Serving: Regional Parks, Parkways, and/or Open Space	8.0 acres
Linear Parks/Parkways and Trails/Bikeways	0.5 linear miles
Community Facilities	# of Units
Neighborhood Centers (Clubhouses)	1 per neighborhood ^a
Multi-Use Recreation Complexes (including Community Centers)	1 per 30,000
Recreation Facilities	# of Units per Residents
Aquatic Facilities:	
Play Pool/Water Spray Feature	1 per 15,000
Outdoor Complex: Swimming and Wading Pool	1 per 30,000
Off Leash Dog Parks (Neighborhood/Community)	1 per 60,000
Picnic Areas (Large Group/Class I)	1 per 30,000
Playgrounds: Tot Lots, Adventure Play Areas	1 per 2,500
Skateboard Parks (Neighborhood/Community)	1 per 35,000
Community Gardens	1 per 50,000
Nature Interpretation Centers	2 total ^b
Fields	
Softball, including: Adult, Youth	1 per 7,500 (total)
Lighted	1 per 45,000
Baseball, including: Adult, Youth (Little League)	1 per 7,500 (total)
Lighted	1 per 45,000
Soccer, including: Bantam, Full Size	1 per 7,500 (total)
Lighted	1 per 30,000
Courts	
Volleyball	1 per 10,000
Basketball, including Youth, High School	1 per 5,000
Tennis	1 per 10,000
Notes:	
a. As defined by the service area of all public elementary schools.	
b. One north and one south of the American River.	

- ERC 2.2.4 **Meeting Service Level Goals.** The City shall require new residential development to dedicate land, pay in-lieu fees, or otherwise contribute a fair share to the acquisition and development of parks or recreation facilities to meet the service level goals in Table ERC 1. For development in urban infill areas where land dedication is not feasible, the City shall explore creative solutions in providing park and recreation facilities that reflect the unique character of the area it serves.
- ERC 2.2.7 **Capital Investment Priorities.** The City shall give priority to the following parks and recreation capital investments:
- Acquiring land for or constructing parks and recreation facilities where adopted Service Level Goals are not being met
 - Acquiring, restoring and preserving large natural areas for habitat protection and passive recreation use such as walking, hiking, and nature study
 - Acquiring and developing areas for recreation use and public access along the banks of the American and Sacramento Rivers
 - Building and improving parks and facilities to ensure safety for users and adjacent properties
- ERC 2.2.10 **Range of Experience.** The City shall provide a range of small to large parks and recreational facilities. Larger parks and complexes should be provided at the city's edges and along the rivers as a complement to smaller sites provided in areas of denser development.
- ERC 2.2.12 **Compatibility with Adjoining Uses.** The City shall ensure that the location and design of all parks, recreation, and community centers are compatible with existing adjoining uses.
- ERC 2.2.14 **Youth "Friendliness."** The City shall provide parks and facilities for youth between the ages of 10 and 18 to ensure safe gathering places for their recreation.
- ERC 2.2.17 **Joint-Use Facilities Co-located.** The City shall support the development of parks and recreation facilities co-located with public and private facilities (e.g., schools, libraries, and detention basins).
- ERC 2.2.18 **Private Commercial Recreational Facilities.** The City shall encourage the development of private commercial recreational facilities to help meet recreational interests of Sacramento's residents, workforce, and visitors.
- Goal ERC 2.4 Rivers, Creeks, and Natural Resource Areas. Provide positive recreational experiences and enjoyment of nature through the development, maintenance, patrol, and preservation of the rivers, creeks, and natural resource areas.**

Policies

- ERC 2.4.1 **Service Levels.** The City shall provide 0.5 linear mile of parks/parkways and trails/bikeways per 1,000 population.
- ERC 2.4.3 **Connections to Other Trails.** The City shall maintain existing and pursue new connections to local, regional, and state trails.

Airport/Meadowview Community Plan

The following goals, objectives, and policies are from the Airport/Meadowview Community Plan (adopted April 17, 1984) and are applicable to the proposed project.

PUBLIC FACILITIES AND SERVICES ELEMENT

- Goal 1** Ensure that the level of City services in the Airport Meadowview community meet City-wide standards.
- Objective 3** Provide safe and adequate park sites, facilities and recreational opportunities at convenient times and locations, and protect important open space areas within the community; in coordination with the Recreation Master Plan and the Bufferlands Management Plan.

Policies

9. Incorporate the recommendations and policies of the Recreation Master Plan when it is completed and adopted. The preliminary recommendations pertaining to park site acreage include:
 - a) development of a neighborhood school park adjacent to the future elementary school site which is designated in the southeast area of the community; and
 - b) expansion of Meadowview Park westward and development of appropriate acreage and facilities so that the status changes from a neighborhood park to a community park, as defined by the Recreation Master Plan.
10. Encourage provision of private recreational features, facilities and open space to supplement public recreational facilities.

South Area Community Plan

The following policies from the South Area Community Plan are applicable to the project.

- SA.ERC 1.2 **Park and Recreation Facility Deficiencies.** The City shall develop park and recreation facilities to remedy the deficiencies in the South Area identified by the Parks and Recreation Master Plan such as: neighborhood parks, community parks, baseball fields, dog parks, basketball courts, playgrounds, and play pools/waterspray features.
- SA.ERC 1.3 **Regional Park.** The City shall provide for development of a new regional park in Delta Shores that is designed to take advantage of the existing environmental features. The City shall work with the Sacramento Regional Sanitation District in connecting it with the Regional Sanitation bufferlands.
- SA.ERC 1.4 **Connecting Trail System.** The City shall create a trail system that connects the regional park in Delta Shores with other neighborhood, community, and regional parks in the South Area and in the region as well as existing bicycle and pedestrian trails.
- SA.ERC 1.6 **Parkway System to Sacramento River.** The City shall create an expanded bikeway/trail recreational area that links the Laguna and Jacinto Creek parkways to the Sacramento River Parkway system.
- SA.ERC 1.7 **Town of Freeport Open Space and Greenway Buffers.** The City shall create an open space and greenway buffer to connect the Town of Freeport with the Sacramento River and to provide an appropriate transition between development to the north and east of the Town of Freeport and along the Sacramento River.

City of Sacramento Municipal Code*Chapter 12.72 Park Buildings and Recreational Facilities*

This City Code includes regulations associated with building and park use, fund raising, permit procedures, and various miscellaneous provisions related to parks. Park use regulations include a list of activities that require permits for organized activities that include groups of 50 or more people for longer than 30 minutes; amplified sound; commercial and business activities; and fund raising activities. This code also includes a list of prohibited uses within parks such as unleashed pets, firearms of any type, riding bicycles, drinking alcoholic beverages, or smoking within children's playground areas. Activities such as golfing, swimming, and horseback riding are only permitted within the appropriate designated areas.

Chapter 16.64 Parks and Recreational Facilities

Chapter 16.64 establishes the City's standards for the dedication of parkland and/or the payment of in-lieu fees. This chapter outlines the mechanism to allow the City to acquire new parkland at the

rate of 5 acres of neighborhood and community park acres per 1,000 new residents. This chapter sets forth the standard that five acres of property for each 1,000 persons residing within the City be devoted to local recreation and park purposes. Where a recreational or park facility has been designated in the general plan or a specific plan, and is to be located in whole or in part within a proposed subdivision to serve the immediate and future needs of the residents of the subdivision, the subdivider shall dedicate land for a local recreation or park facility sufficient in size and topography to serve the residents of the subdivision. The amount of land to be provided shall be determined pursuant to the appropriate standards and formula contained within the chapter. Under certain circumstances, the City may allow a subdivider to pay a fee equal to the value of the land prescribed for dedication in lieu of dedication, along with a 20% mark-up to cover the cost of off-site improvements. The following sections from Chapter 16.64 from the City of Sacramento Municipal Code are applicable to the proposed project:

16.64.010 General requirement.

As a condition of approval of a final subdivision map or parcel map, the subdivider shall dedicate land, pay a fee in lieu thereof, or both, at the option of the city, for park or recreational purposes at the time and according to the standards and formula contained in this chapter. (Prior code § 40.16.1601)

16.64.020 General standards.

It is found and determined that the public interest, convenience, health, welfare and safety require that five acres of property for each one thousand (1,000) persons residing within the city be devoted to local recreation and park purposes. (Prior code § 40.16.1602)

16.64.030 Standards and formulas for dedication of land.

Where a recreational or park facility has been designated in the general plan or a specific plan, and is to be located in whole or in part within the proposed subdivision to serve the immediate and future needs of the residents of the subdivision, the subdivider shall dedicate land for a local recreation or park facility sufficient in size and topography to serve the residents of the subdivision. The amount of land to be provided shall be determined pursuant to the following standards and formula: Where the city requires the dedication of land, the subdivider or owner shall dedicate land for local recreational or park facilities according to the formula $D \times F = A$ in which:

D = the number of dwelling units

F = a "factor" herein described

A = the buildable acres to be dedicated.

A buildable acre is a typical acre of the subdivision, with a slope less than ten (10) percent, and located in other than an area on which building is excluded because of flooding, public rights-of-way, easements, or other restrictions.

The factors of .0149, .0112, and .0088 are constants which, when multiplied by the number of dwelling units permitted in the subject area, will produce five acres per thousand population. Unless the subdivider enters into an agreement with the city for a lower density, the number of dwelling units shall be calculated as follows:

- A. When a rezoning application accompanies the tentative map, density shall be calculated according to the highest density of the zoning designation applied for; provided, that when rezoning to the R-1A zone is requested for individual lots in a predominately single-family subdivision in order to develop halfplex units on the lots and the development of the halfplex units will not cause the density of the subdivision to exceed the maximum density allowed in the R-1 zone, the number of dwelling units shall be based on single-family density;
- B. When the tentative map is not accompanied by a rezoning application, density shall be calculated according to the highest density of the existing zoning designation or existing specific plan density designation, whichever allows the highest density; provided, however, that

upon completion of build-out, if the actual number of dwelling units built is less than the highest density permitted in the applicable zone, then the subdivider may, within five years after payment of the fee, apply for a refund, without interest, of the difference between the fee actually paid and a fee calculated on the basis of the actual density.

The factors referred to above are as follows:

FS = .0149 relating to single-family dwelling units

FT = .0112 relating to two-family dwelling units

FM = .0088 relating to multiple-family dwelling units

Fmh = .0088 relating to mobile-home dwelling units

The subdivider shall: (1) provide full street improvements, including but not limited to curbs, gutters, street paving, traffic control devices, street lights, and sidewalks, to land which is dedicated pursuant to this section; (2) provide for chain link fencing meeting city standards along the property line of that portion of the subdivision contiguous to the dedicated land; (3) provide improved surface drainage through the site; and (4) provide other improvements which the city council determines to be essential to the acceptance of the land for recreational purposes. (Prior code § 40.16.1603)

16.64.060 Use of fees.

Fees collected pursuant to this chapter shall be used and expended solely for the acquisition, improvement, and expansion of the public parks, playgrounds and recreational facilities reasonably related to serve the needs of the residents of the proposed subdivision. Said fees may also be used for the development of recreational areas and facilities on public school grounds which provide a desirable recreational site and immediate access to a public street. (Prior code § 40.16.1606)

Chapter 18.44 Park Development Impact Fee

Chapter 18.44 imposes a park development impact fee on residential and non-residential development within the city. Fees collected pursuant to Chapter 18.44 are primarily used to finance the construction of new park facilities or to rehabilitate existing facilities.

City of Sacramento Parks and Recreation Master Plan 2005-2010

The City of Sacramento Parks and Recreation Department prepared the *2005-2010 Parks and Recreation Master Plan*, which was adopted by the City Council on December 7, 2004. The Master Plan is considered part of the City's General Plan, Conservation and Open Space Element. The Master Plan calls for a ratio of approximately 13 park acres per 1,000 residents (2.5 ac/1,000 residents for neighborhood parks, 2.5 ac/ 1,000 residents for community parks and 8 ac/1,000 residents for regional parks, along with a service level goal of 0.5 mils of trail or bikeways for every 1,000 residents). The categories of City Parks and standards are as follows:⁵¹

- Neighborhood Park: Developed to serve the recreation needs of residents within a one half-mile radius of the park and is often situated adjacent to an elementary school. Improvements are usually oriented toward the recreation needs of children. The size is generally from 2 to 10 acres, depending on the nature of the service area. The standard for this type of park is 2.5 acres per 1,000 residents of the City.
- Community Park: Developed to meet the recreational needs of residents within a three mile radius. The size ranges from 6 to 60 acres. In addition to neighborhood park elements, a community park might have restrooms, large landscaped areas, a community center, a swimming pool, lighted sport fields, and specialized equipment not found in a neighborhood park. Some of the small sized community parks may be dedicated for one particular use. Some elements in a community park may

51 City of Sacramento, *General Plan*, Section 6 – Conservation and Open Space Element, adopted January 19, 1988, page 7-25.

be under lease to a community group. The standard for this type of park is 2.5 acres per 1,000 residents of the City.

- **City Regional Park:** Contains a wide range of improvements usually not found in local community or neighborhood facilities. These parks serve an area within a 30-minute driving time radius and the size is generally larger than 75 acres. In addition to neighborhood and community park type improvements, a regional facility may include a golf course, a marina, amusement areas, a zoo, or nature areas. Some elements in a regional park may be under lease to community groups. The standard for this type of park is 5 acres per 1,000 residents in the City.
- **City Parkway:** A linear park or closely interconnected system of City or school parks located along a roadway, waterway, bikeway, or other common corridor. The size of parkways varies and the overall shape is generally elongated and narrow. No special standard for this type of facility has been established. The City has a service level goal of 0.5 miles of trails or off-street bikeways per 1,000 residents. The trails may be located within the parkway.
- **Open Space:** Open spaces are natural areas that are retained to enhance the environmental beauty of the City. Active recreational uses of these sites may be non-existent or limited. No standard for this type of facility has been established.
- **School Parks:** The City of Sacramento Department of Parks and Recreation has sought ways to more efficiently provide park sites and recreational facilities. The Department encourages the development of parks on land owned by a school district and designated under special agreement with the Department of Parks and Recreation for joint development, operation, or maintenance by both agencies to meet general public and school recreation needs.

The Master Plan sets service goals for recreation facilities. Those goals for neighborhood centers and community centers are as follows:

- **Neighborhood Center:** 1 per neighborhood as defined by service area of an elementary school.
- **Community Center:** 1 per 30,000 population.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The proposed project must demonstrate adequate parkland is provided to serve the project, demonstrating compliance with the Quimby Act and Chapter 16.64 of the Sacramento Municipal Code. As stated above under the Regulatory Context, the amount of land dedication or fee payment for parks under the Quimby Act varies based on residential density, parkland costs, and other factors. In-lieu fees for park development may also be paid if a project does not meet the City's parkland dedication goals. The Quimby Act factors determined to be appropriate for this analysis and calculations for appropriate parkland dedication are shown below in Table 5.7-2. To ensure that the proposed project provides adequate parkland, park requirements listed in Table 5.7-2 are based on a total of 5,222 units instead of the proposed 5,092 units.

Standards of Significance

For the purposes of this EIR, impacts on parks and recreation are considered significant if the proposed project would:

- require, or result in, the construction of new, or the expansion of existing, facilities related to the provision of parks or recreation.

TABLE 5.7-2					
HOUSING UNITS AND PARK ACREAGES CALCULATIONS					
QUIMBY REQUIREMENTS					
Residential Uses	Maximum Allowable Densities				
	Max. DUs/acre allowed	Max. No. of DUs allowed	Total Acres	Quimby Unit Type Factors	Parks Area Required (Acres)
High Density Residential					
(15-27 du/acre)	27	1,896	70.3	0.0088	16.685
Medium Density Residential					
Attached Single Family Residences	14	1,233	88.3	0.0088	10.850
Detached Single Family Residences	14	1,233	88.3	0.0149	18.372
Low Density Residential					
Single Family	7	675	136.9	0.0149	10.058
Mixed-Use Podium Style Housing					
(23-29 du/acre)	29	185	19.93	0.0088	1.628
TOTAL		5,222	403.73		57.592
<p>Note: Section 16.64.030 of the Sacramento Municipal Code requires park land dedication according to the formula: $A = D \times F$; where A is the buildable acres of parkland to be dedicated; D is the number of dwelling units, and F is a factor established by City Ordinance which, when multiplied by the number of dwelling units, will produce five acres of parkland per thousand residents. Source: Mary de Beauvieres, Principal Planner, Park Planning & Development Services, Sacramento Department of Parks and Recreation, written communication to Rochelle Amrhein, Associate Planner, Environmental Planning Services, City of Sacramento Development Services Department, July 22, 2008.</p>					

Project-Specific Impacts and Mitigation Measures

5.7-7 The proposed project would increase the demand for parks at the project site and in the project vicinity, which could result in the need for additional parks and park facilities, the construction of which could result in adverse environmental impacts.

Based on maximum allowable residential development, the proposed project could develop up to 5,222 new homes in the Airport/Meadowview Planning Area, which would result in a population of up to approximately 13,421 people. As shown in Table 5.7-2, 57.592 acres of parkland would be required for the proposed project based on the appropriate Quimby Act unit type factors.⁵²

The proposed project includes the development of over 65 acres of developed parkland and trails. In total, the proposed project would provide 59.96 acres of parks that would be accepted by the City Parks Department for the purpose of fulfilling the project's park dedication requirement. The trails and 1.86 acres of mini-park would not count toward this requirement. In addition to this, the proposed project includes a community center and over 50 acres of open space and restored wetland areas, which could also serve project residents for recreational purposes, but do not count toward parkland dedication credit, per the City's Parks Department policies. However, the proposed project provides parkland in excess of the 57.592 acres required by the Quimby Act and Chapter 16.64 of the Municipal Code. Therefore, the proposed project would not result in the need for additional park facilities, making this a ***less-than-significant impact***.

52 The City's Quimby Code (Section 16.64.030) requires that parkland dedication be based upon the maximum density allowed under the zoning designations that are requested in the development application. The project's parkland dedication requirement is based on maximum density allowed.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

The cumulative context for the analysis of parks is the Airport/Meadowview Planning Area within the City of Sacramento.

5.7-8 The proposed project, in combination with other development projects in the Airport/Meadowview Planning Area, would increase the demand for parks, which could result in the need for additional parks and park facilities, the construction of which could result in adverse environmental impacts.

The project, combined with other cumulative development in the Airport/Meadowview Planning Area would increase the demand for parks and park facilities, the construction of which could result in adverse impacts on the physical environment. The Airport/Meadowview Planning Area has a total of 153.4 acres of parkland. The General Plan Technical Background Report (2005) prepared for the City's draft 2030 General Plan identifies the South Sacramento/Meadowview area as underserved for parkland.⁵³ Further development of the proposed project and other projects in the Airport/Meadowview area would add to this demand for the development of more parks, potentially resulting in adverse environmental impacts, making this cumulative impact significant. However, the project would provide adequate park facilities within the project site to serve demand created by project residents. In fact, the proposed project provides more parkland than required for the proposed project, helping to lessen the cumulative deficiency of parkland in the Airport/Meadowview area, therefore making the proposed project's contribution to this demand *not considerable*. Therefore, this would be a ***less-than-significant cumulative impact***.

Mitigation Measure

None required.

53 City of Sacramento, *General Plan Technical Background Report*, September 27, 2005, page 5.3-8.

SOLID WASTE

This section describes existing solid waste collection services in the project area. Existing plans and policies relevant to solid waste issues associated with implementation of the project are provided. Potential impacts on solid waste collection services associated with implementation of the project are evaluated based on an analysis of service levels and project data. In addition, mitigation measures intended to reduce impacts on solid waste collection services are proposed, where appropriate.

Information for this section was obtained from project plans, the City of Sacramento 1988 General Plan, the draft City of Sacramento 2030 General Plan the Airport/Meadowview Community Plan, the California Integrated Waste Management Board, communication with City of Sacramento Solid Waste Division staff, and other environmental and planning documentation for the project area.

ENVIRONMENTAL SETTING

Within the City of Sacramento commercial waste collection is performed by both the City and permitted private haulers. Residential and commercial solid waste collected by the City is transported to the Sacramento Recycling and Transfer Station (8491 Fruitridge Road) and is then transported to the Lockwood Landfill, near Sparks, Nevada. Commercial waste collected by private companies is disposed of at a variety of facilities including the Sacramento County Kiefer Landfill, the Yolo County Landfill, Forward Landfill, L and D Landfill, and several privately run transfer stations.⁵⁴ Private haulers can deliver waste to the landfill of their choice; they typically select the most cost-efficient option.

In 2005, the City of Sacramento alone disposed of a total of 669,000 tons of solid waste. The total generation, including the disposal of waste from private haulers in the city, generated 1.13 million tons of waste with approximately 52 percent diversion rate.⁵⁵

There are three large volume transfer stations that generally serve the project site - Sacramento Recycling and Transfer Station, owned by BLT Enterprises, and North Area Transfer Station, owned by the County of Sacramento Public Works Department, and Elder Creek Transfer Facility owned by Allied Waste. Currently, the Sacramento Recycling and Transfer Station is permitted for a maximum daily disposal of 2,500 tons.⁵⁶ The North Area Transfer Station accepts up to 2,400 tons per day of construction/demolition, industrial, green materials, tires, wood waste, and mixed municipal waste.⁵⁷

The Lockwood Regional Landfill is a Class I landfill on a total of 3,700 acres, 500 of which is currently used. The landfill currently accepts an average of between 8,000 and 9,000 tons per day. Approximately 200,000 tons per year (approximately 550 tons per day) are accepted from the City of Sacramento. Lockwood Landfill currently has enough remaining capacity to operate for 20 years,

54 City of Sacramento, *General Plan*, 1988, page 7-10.

55 City of Sacramento, *Township 9 DEIR*, February 2007, page 6.10-1.

56 CIWMB, *Transfer Station Profile*, <www.ciwmb.ca.gov>, accessed May 29, 2007.

57 CIWMB, *Transfer Station Profile*, <www.ciwmb.ca.gov>, accessed May 29, 2007.

although staff is currently working on an expansion that will add an additional 800 acres and 100 years of life to the landfill. The expansion is expected to be completed by sometime in 2008.⁵⁸

Kiefer Solid Waste Landfill, operated by the Sacramento County Department of Public Works, is the primary municipal solid waste disposal facility in Sacramento County. Kiefer Landfill, categorized as a Class III facility, accepts waste from the general public, businesses, and private waste haulers. More specifically, wastes accepted include: construction/demolition, mixed municipal, and sludge (biosolids). The facility is on a 1,084-acre site near the intersection of Kiefer Boulevard and Grantline Road. The permitted capacity for the landfill is 117,400,000 cubic yards (10,815 tons/day) and, as of 2000, the landfill had a remaining capacity of 112,900,000 cubic yards (96 percent).⁵⁹ The landfill has an estimated closure date of 2064.⁶⁰

Other landfills that could receive solid waste from the proposed project if a private hauler is selected for waste disposal include the Yolo County Landfill in Davis, Forward Landfill in Manteca, and L and D Landfill in Sacramento. If the project is served by a private waste disposal company, the waste could be delivered to a variety of landfills, depending on market conditions and capacity.

Regulatory Context

Federal

Resource Conservation and Recovery Act

Volume 40 of the Code of Federal Regulations, Part 258 (Resource Conservation and Recovery Act (RCRA, Subtitle D)) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

State

Assembly Bill 939

Regulation affecting solid waste disposal in California is embodied in California State Assembly Bill (AB) 939, which is known as the California Integrated Waste Management Act and was codified in the Public Resources Code and in Title 14 of the California Code of Regulations in 1992. AB 939 was designed to increase landfill life by diverting solid waste from landfills within the state and conserving other resources through increasing recycling programs and incentives. AB 939 requires that counties prepare Integrated Waste Management Plans to implement landfill diversion goals, and requires that cities and counties prepare and adopt Source Reduction and Recycling Elements (SRRE). The SRRE must set forth a program for management of solid waste generated with the jurisdiction of the respective city or county. Each source reduction and recycling element must include, but is not limited to, all of the following components for solid waste generated in the jurisdiction of the plan:

58 City of Sacramento, *Township 9 DEIR*, February 2007, page 6.10-2.

59 CIWMB, *Active Landfills Profile*, <www.ciwmb.ca.gov>, accessed May 29, 2007.

60 CIWMB, *Active Landfills Profile*, <www.ciwmb.ca.gov>, accessed May 29, 2007.

- A waste characterization component,
- A source reduction component,
- A recycling component,
- A composting component,
- A solid waste facility capacity component,
- An education and public information component,
- A funding component, and
- A special waste component.

The SRRE programs are designed to achieve landfill diversion goals by encouraging recycling in the manufacture, purchase and use of recycled products. AB 939 also requires that California cities implement plans designed to reduce waste deposited in landfills by 50 percent per person by December 31, 2000. The diversion rate is adjusted annually for population and economic growth when calculating the percentage achieved in a particular jurisdiction.

Local

Sacramento Regional Solid Waste Authority (SWA)

The Sacramento Regional Solid Waste Authority (SWA) is a joint powers authority consisting of a board of supervisors representing Sacramento County and the cities of Sacramento and Citrus Heights. The SWA enforces its ordinances to regulate commercial solid waste collection, permit franchised haulers, and promote recycling programs.

Business Recycling Ordinance

Prior City Ordinance 8 dealing with commercial solid waste was replaced by the Business Recycling Ordinance. Per the new ordinance, all businesses that generate 4 cubic yards or more of waste per week must have a recycling program that can divert 30% of the waste they generate.

City of Sacramento 1988 General Plan

The following goal from the City's 1988 General Plan is applicable to solid waste and the proposed project.

Goal	Provide adequate solid waste disposal facilities and services for collection, storage and reuse of refuse.
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City of Sacramento 2030 General Plan

The City anticipates adopting its new 2030 General Plan by the end of 2008. Therefore, applicable policies from the draft 2030 General Plan are included below.

Goal U 5.1 Solid Waste Facilities. Provide adequate solid waste facilities, meet or exceed State law requirements, and utilize innovative strategies for economic and efficient collection, transfer, recycling, storage, and disposal of refuse.

Policies

- U 5.1.4 **Residential and Commercial Waste Disposal.** The City shall continue to provide curbside trash and recycling collection service to single-family residential dwellings and offer collection service to commercial and multi-family residential development.
- U 5.1.5 **Yard Waste and Street Sweeping.** The City shall continue to provide garden refuse yard waste collection service to single-family residential dwellings and provide street sweeping service to commercial and residential development.
- U 5.1.7 **Diversion of Waste.** The City shall encourage recycling, composting, and waste separation to reduce the volume and toxicity of solid wastes sent to landfill facilities.
- U 5.1.11 **Recycled Materials in New Construction.** The City shall encourage the use of recycled materials in new construction.
- U 5.1.12 **Recycling and Reuse of Construction Wastes.** The City shall require recycling and reuse of construction wastes, including recycling materials generated by the demolition and remodeling of buildings, with the objective of diverting 85 percent to a certified recycling processor.

Airport/Meadowview Community Plan

The following goals, objectives, and policies are from the Airport/Meadowview Community Plan (adopted April 17, 1984) and are applicable to the proposed project.

PUBLIC FACILITIES AND SERVICES ELEMENT

Goal 1 Ensure that the level of City services in the Airport Meadowview community meet City-wide standards.

Policy

1. Ensure that necessary public facilities and services are provided to meet projected demands.

South Area Community Plan

The City anticipates adopting the South Area Community Plan as part of the 2030 General Plan. The draft plan does not contain any solid waste policies relevant to the proposed project.

Source Reduction Recycling Element

The California Integrated Waste Management Act of 1989 (Assembly Bill 939, noted above) mandates that each city shall prepare, adopt, and submit a SRRE. AB 939 required all cities to achieve a minimum diversion of 25 percent of the city's waste stream from landfilling by the year 1995 and 50 percent diversion by the year 2000. The City of Sacramento's Final Draft SRRE, approved in 1995, pledges to exceed the requirements of AB 939, where feasible, in an effort to achieve a 70 percent landfill avoidance goal adopted by City Council in August 1989. In order to achieve this goal, the City has implemented a number of programs, including curbside recycling, drop-off and buy-back centers, and compost programs. The City has met the 50 percent diversion mandated by AB 939 every year since 2000, with the exception of 2004. The 2004 diversion rate was 49 percent in the city due to commercial haulers not meeting the 30 percent diversion requirement pursuant to the franchise agreements with independent haulers. If the franchise agreements were consistently met, the city would have a diversion rate between 54 and 56 percent.

These agreements have been replaced with a business recycling-generator based recycling requirement implemented in March 2007.⁶¹ The City is currently looking into ways to increase solid waste diversion rates to up to 75 percent.⁶²

The City also requires construction and demolition recycling for construction projects. This is part of the conditions of approval for new construction and plans. The conditions require 95 percent diversion for asphalt and concrete and 50 percent for other materials. All construction projects must submit a plan of how they will achieve these diversion rates prior to receiving a building permit.⁶³

Sacramento Municipal Code

Chapter 17.72 of the City of Sacramento Municipal Code outlines the recycling and solid waste disposal regulations. These regulations are necessary in order to lengthen the lifespan of landfills, encourage recycling, and meet State mandated goals for waste reduction and recycling, specifically AB 939. These policies provide guidelines regarding the location, size and design features of recycling and trash enclosures in a manner by which adequate, convenient space for the collection, storage, and loading of recyclable and solid waste material is provided. In addition, developers are required to submit a "statement of recycling information" to the City's solid waste manager. The requirement for this statement includes: a site plan which includes design specifications, plans for demolition and construction, and any details of proposed education/public relations programs.⁶⁴

The Construction and Demolition Ordinance is targeted for adoption in fall of 2008, which would supercede the above. The proposed ordinance will (1) require the diversion of Construction and Demolition debris from landfill disposal in a greater volume than is presently experienced; (2) enable the City to meet the State mandate of 50 percent diversion and (3) move the City toward sustainability by working with neighboring jurisdictions to influence policy and create market incentives, and encourage building the infrastructure to promote waste reduction. The proposed ordinance will require projects meeting or exceeding 5,000 sf and a value of \$100,000 or greater divert 95 percent of inert waste (concrete and asphalt) and 50 percent of non-inert waste (mixed waste) from landfills receiving project-generated waste. Failure to meet these requirements would result in a diversion compliance fine and loss of security deposit.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The analysis uses the following solid waste generation rates used by the City of Sacramento to determine the proposed project's impact on solid waste facilities.⁶⁵

- Office/Retail = 31 tons/acre/year

61 City of Sacramento, *Township 9 DEIR*, February 2007, page 6.10-4.

62 City of Sacramento, *Township 9 DEIR*, February 2007, page 6.10-4.

63 City of Sacramento, *Township 9 DEIR*, February 2007, p.6.10-4 - 6.10-5.

64 City of Sacramento, Municipal Code, Chapter 17.72, *Recycling and Solid Waste Disposal Regulations*, <www.qcode.us.codes/sacramento/>, accessed June 4, 2007.

65 City of Sacramento, *Township 9 DEIR*, February 2007, page 6.10-5.

- Residential = 1.5 tons/unit/year for single family, 0.7 tons/unit/year for attached units.

Standards of Significance

For the purposes of this EIR, impacts on landfills are considered significant if the proposed project would:

- require, or result in, the construction of new landfills or the expansion of existing facilities to accommodate the project's solid waste disposal needs.

Project-Specific Impacts and Mitigation Measures

5.7-9 The proposed project could result in the construction of new, or expansion of existing, solid waste facilities, which could result in adverse environmental impacts.

The proposed project would develop a maximum of 5,092 new homes of varying densities, which would result in a population of approximately 13,086. In addition to residential uses, the proposed project would develop over 145 acres of commercial uses, over 65 acres of parks and trails, 50 acres of open space and wetland restoration areas, and various public facilities, including a community center,.

As shown in Table 5.7-3, the proposed project would generate approximately 16.6 tons per day (6,075 tons per year) at project buildout. This would increase the daily amount of waste accepted at Lockwood Landfill from the City of Sacramento by up to approximately four percent before diversion and recycling. Annual solid waste disposal collected exclusively by the City would increase by approximately three percent before recycling. Total solid waste disposal, including solid waste collected by private haulers, would increase by less than one percent with the proposed project. Implementation of State-mandated recycling requirements would reduce the proposed project's solid waste contribution even further.

SOLID WASTE GENERATION			
Land Use	Units	Generation Rate	Solid Waste in Tons
Residential – Single Family	3,167 du	1.5 tons/unit/year	4,751 tons/yr
Residential - Attached	1,925 du	0.7 tons/unit/year	1,348 tons/yr
Office/Retail ¹	152.5 acres	31 tons/acre/year	4,728 tons/yr
TOTAL per year			6,075 tons/year
TOTAL per day			16.6 tons per day
Notes:			
1. Includes 2.6 acres for the Community Center and 19.9 acres of Residential/Mixed-Use.			
Source: PBS&J, 2008.			

There is currently capacity to accommodate the proposed project's solid waste generation based on capacity at the Lockwood Landfill. The City only has exclusive rights for solid waste disposal for single-family residential land uses with up to four attached units. If the residential land use has greater than four attached units, the contract for solid waste disposal is commercial and available in

the competitive market.⁶⁶ Private waste haulers operate in the city of Sacramento, so the destination of the solid waste is uncertain. The destination for waste from the competitive market is also uncertain. Nonetheless, there are several landfills in northern California and northwestern Nevada with adequate capacity that could serve the proposed project.⁶⁷ They include:

- Neal Road Landfill, Butte County, 21,716,471 cubic yards remaining capacity (85.9%)
- L and D Landfill, Sacramento County, 4,100,000 cubic yards remaining capacity (68%)
- Sacramento County (Kiefer) Landfill, Sacramento County, 112,900,000 cubic yards remaining capacity (96.2%)
- Foothill Sanitary Landfill, San Joaquin County, 97,900,000 cubic yards remaining capacity (96%)
- Forward Landfill, San Joaquin County, 40,031,058 cubic yards remaining capacity (78.4%)
- Hay Road Landfill, Solano County, 22,476,431 cubic yards remaining capacity (79.6%)
- Potrero Hills Landfill, Solano County, 8,200,000 cubic yards remaining capacity (38.1%)
- Tehama County/Red Bluff Landfill, Tehama County, 2,424,448 cubic yards remaining capacity (47.6%)
- Fink Road Landfill, Stanislaus County, 10,000,000 cubic yards remaining capacity (69%)
- Yolo County Central Landfill, Yolo County, 16,122,000 cubic yards remaining capacity (64.5%)
- Norcal Waste Systems Ostrom Road LF Inc., Yuba County, 40,600,000 cubic yards remaining capacity (97.1%)
- Lockwood Landfill, Sparks, Nevada, 37,500,000 cubic yards remaining capacity

Although the ultimate destination of the solid waste generated by the proposed project cannot be determined with certainty at this time, there are several other facilities with substantial capacity remaining that could serve the proposed project. Some of the landfills listed above are planning expansions to further increase their ability to accept solid waste. If the Lockwood Landfill or Kiefer Landfill cannot serve the proposed project, other landfills would be available to accept solid waste from the proposed project without substantially affecting capacity.

Solid waste disposal by local agencies is governed by California State AB 939. AB 939 is designed to increase landfill life and conserve other resources through intensified recycling. AB 939 requires counties to prepare Solid Waste Master Plans to implement the Bill's goals, particularly to divert approximately 50 percent of the solid waste generated by the year 2000. Additionally, the Bill requires cities and counties to prepare Source Reduction and Recycling Elements (SRRE) of their

66 City of Sacramento, *Township 9 DEIR*, February 2007, page 6.10-5.

67 California Integrated Waste Management Board, *Active Landfill Profiles*, <www.ciwmmb.ca.gov>, accessed June 4, 2007.

General Plans. This Element is designed to develop programs to achieve the landfill diversion goals, to stimulate local recycling in manufacturing and the purchase of recycled products.

Prior to receiving a building permit, the project applicant must submit a solid waste management plan to the City showing how the project complies with the proposed Construction and Demolition Ordinance. The proposed ordinance would require that the proposed project divert 95 percent of inert waste (concrete and asphalt) and 50 percent of non-inert waste (mixed waste) from landfills receiving project-generated waste. Failure to meet these requirements would result in a diversion compliance fine and loss of security deposit.

The proposed project would be required to comply with Chapter 3, Section 4 (Recycling and Solid Waste Disposal Regulations) of the City of Sacramento Zoning Ordinance prior to issuance of building permits. This section regulates the location, size, and design features of recycling and trash enclosures in order to provide adequate, convenient space for the collection, storage, and loading of recyclable and solid waste material for existing and new development. The project applicant is required to submit a Statement of Recycling Information prior to issuance of a building permit, to be reviewed and approved by the City's Solid Waste Manager.

Because there is sufficient capacity at various landfills that could serve the project and the project would be required to comply with regulations that would divert a portion of the solid waste generated by the project from landfills, this is a ***less-than-significant impact***.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

The cumulative analysis is based on the project's contribution and potential impact on landfills. The cumulative context for solid waste services includes development in the City of Sacramento.

5.9-10 Solid waste generated by the proposed project, in combination with other development in the city, could exceed landfill capacity.

The project, combined with other cumulative development in the city would increase the demand for landfill space. The project would contribute less than one percent of solid waste to the Sacramento's total annual solid waste. As addressed in the setting section, a number of landfills operate in the Sacramento region, and landfills outside the region also serve Sacramento's solid waste needs. Lockwood Landfill, the primary destination for solid waste collected by the City of Sacramento, is undergoing an expansion that would increase its capacity enough to continue operation for at least the next 100 years. Kiefer Landfill is not expected to reach capacity for another 60 years. As growth continues in the region, in accordance with the General Plan, population would increase and the solid waste stream would continue to grow. Implementation of the Solid Waste Authority and Sacramento recycling requirements, however, would continue to significantly reduce potential impacts on landfill capacity. Because the project's contribution to the city's total annual waste stream would be less than one percent; and the existence of significant capacity at the city's primary

landfills, the exporting of solid waste and aggressive recycling policy cumulative solid waste, including the proposed project, would not exceed available land fill capacity and therefore, this would be a ***less-than-significant cumulative impact***.

Mitigation Measure

None required.

5.8 PUBLIC UTILITIES

5.8 PUBLIC UTILITIES

INTRODUCTION

This section of the EIR describes existing public utilities available to serve the proposed project and evaluates the effects of the proposed project on the capacity of these utilities. Impacts are evaluated in relation to increased demand for public utilities that could potentially lead to physical environmental effects. The utilities evaluated in this section include wastewater, water supply, and dry utilities.

The following comments were received in response to the NOP (see Appendix B). Sacramento Area Sewer District (SASD), formerly County Sanitation District 1 (CSD-1), commented that that only a small parcel on the southwest corner of the project site, adjacent to the east side of Interstate 5 (I-5), is within the SASD boundary, and the remainder of the project site is within the Urban Service Boundary and the SRCSD. A comment letter from the Sacramento Regional County Sanitation District (SRCSD) confirmed that only a small portion of the project site is served by SASD and that ultimate conveyance of wastewater flows from the project to the Sacramento Regional Wastewater Treatment Plant (SRWTP) would be provided via the 96-inch City Interceptor. The SRCSD letter cautioned that the City Interceptor that would serve the project has limited capacity and that the EIR should evaluate the potential for project wastewater flows to exceed the maximum capacity of the Interceptor. No comments pertaining to dry utilities were received. All of these issues are addressed in this section.

Storm drainage infrastructure capacity is addressed in Section 5.5, Hydrology and Water Quality. Potential impacts on solid waste collection services are addressed in Section 5.7, Public Services.

Sources consulted for the preparation of this section include preliminary engineering plans for the proposed project, the Water Supply Assessment prepared for the proposed project, the City of Sacramento 2006 Urban Water Management Plan (UMWP), and staff from CSD-1, the SRCSD, Pacific Gas and Electric Company (PG&E), the Sacramento Municipal Utility District (SMUD), and personal communication with City staff.

WASTEWATER

The focus of this section is on the capacity of City's system for collection, conveyance, and treatment of wastewater flows from the project site.

ENVIRONMENTAL SETTING

Existing Wastewater System

Wastewater Treatment

Wastewater treatment within the city of Sacramento is provided by the SRCSD, which operates all regional interceptors and wastewater treatment plants serving the city except for the combined

sewer and storm drain treatment facilities which are operated by the City of Sacramento. Local and trunk wastewater collection in the city is provided by SASD (formerly CSD-1) and the City of Sacramento. SASD serves the community plan areas of South Natomas, North Natomas, and portions of Arcade-Arden, East Broadway, East Sacramento, South Sacramento, and Airport/Meadowview. As noted above, only a small parcel on the southwest corner of the project site, adjacent to the east side of I-5, is within the SASD boundary, and the remainder of the project site is within the Urban Service Boundary and the SRCSD. All wastewater flows from the project site are directed to the SRWTP for treatment and ultimate discharge into the Sacramento River.

The SRWTP, which is located just south of the Sacramento city limits, is owned and operated by SRCSD and provides sewage treatment for the entire city. Sewage is routed to the wastewater treatment plant by collections systems owned by SASD and the cities of Sacramento, West Sacramento, and Folsom. The SRCSD Interceptor system then conveys the wastewater to the SRWTP for treatment and disposal. The SRWTP is a secondary treatment facility that includes raw influent and effluent pumping, grit removal, primary clarification, secondary treatment with the high-purity oxygen activated sludge process, disinfection, solids thickening, and anaerobic solids digestion. The SRWTP is permitted to treat an average dry weather flow (ADWF) of 181 million gallons per day (mgd) and a daily peak wet weather flow of 392 mgd. Currently, the facility's ADWF is approximately 165 mgd. The SRWTP 2020 Master Plan projects a population-based flow of 218 mgd ADWF. After secondary treatment and disinfection, a portion of the effluent from the plant is further treated in SRCSD's Water Reclamation Facility and then used for landscape irrigation within the City of Elk Grove. Digested biosolids are disposed of with an on-site application and also via off-site marketing of Class A biosolids pellets. The majority of the treated wastewater is dechlorinated and discharged into the Sacramento River. The SRCSD maintains the regional interceptors that convey sewage to the treatment plant.¹

Wastewater Infrastructure

Wastewater services to the project site would be provided by the City of Sacramento. Existing wastewater infrastructure on the project site includes the 96-inch City Interceptor trunk line located along the eastern side of I-5 in the eastern portion of the site (see Figure 5.8-1) as well as twin 66-inch Force Mains that traverse the site from west to east. The 96-inch City Interceptor trunk line and twin 66-inch force mains are owned, operated and maintained by SRCSD. The project would be served by the SRWTP.

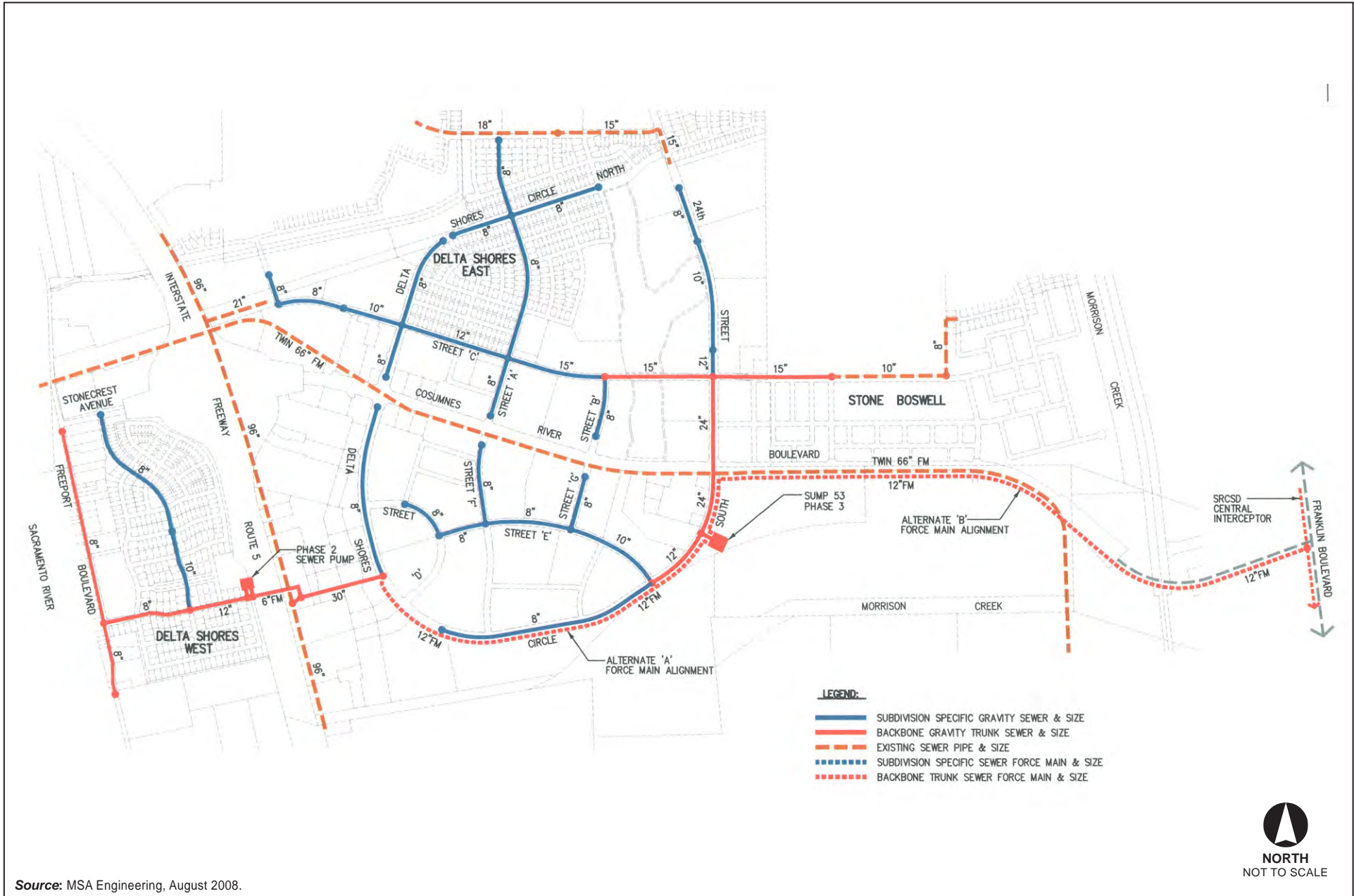
Regulatory Context

Federal and State

Federal and State Clean Water Act

The Federal Clean Water Act (CWA) and regulations set forth by the California Department of Health Services (DHS) and State Water Resources Control Board (SWRCB) are aimed primarily at discharges of effluent to surface waters. Title 40 of the Code of Federal Regulations (CFR) Part

1 Humera Arshad, SRCSD, e-mail correspondence, November 26, 2007.



Source: MSA Engineering, August 2008.

FIGURE 5.8-1
Existing and Proposed Sewer Facilities



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Delta Shores

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503, Title 23 California Code of Regulations, and standards established by the Central Valley Regional Water Quality Control Board (CVRWQCB) regulate the disposal of biosolids.

Local

City of Sacramento 1988 General Plan

The City of Sacramento 1988 General Plan is currently being updated. Below is a list of goals and policies that relate to wastewater from the 1988 General Plan. The City currently is in the process of preparing a new General Plan and anticipates adopting the 2030 General Plan by the end of 2008. While the new policies will be different from the 1988 policies, it is anticipated that the policies listed below will not become obsolete as they are updated through the 2030 General Plan process.

Goal A Provide adequate sewer service for all urbanized or developing neighborhoods.

Policies

1. Provide and upgrade sewer facilities where needed to newly developing areas in the City.
2. Develop plans for extension of sewer lines to existing developed areas where sewer service is lacking.
3. Work with property owners to develop financing arrangements in order to provide sewer services.

City of Sacramento 2030 General Plan

The City anticipates adopting its new 2030 General Plan by the end of 2008. Therefore, applicable policies from the draft 2030 General Plan are included below.

UTILITIES

Citywide Utilities

Goal U 1.1 High-Quality Infrastructure and Services. Provide and maintain efficient, high quality public infrastructure facilities and services in all areas of the city.

Policies

- U 1.1.1 **Provision of Adequate Utilities.** The City shall continue to provide and maintain adequate water, wastewater, and stormwater drainage utility services to all areas in the city currently receiving these services from the City, and shall provide and maintain adequate water, wastewater, and stormwater drainage utility services to areas in the city that do not currently receive these City services upon funding and construction of the infrastructure necessary to provide these City services.
- U 1.1.2 **Citywide Level of Service Standards.** The City shall establish and maintain service standards [Levels of Service (LOS)] for water, wastewater, stormwater drainage, and solid waste services.
- U 1.1.4 **Service Districts.** The City shall review existing adjacent and overlapping service districts and consider whether annexation, consolidation, and/or retention of existing service districts for drainage, wastewater, and solid waste is needed to increase the efficiency and quality of service and delivery.
- U 1.1.5 **Timing of Urban Expansion.** The City shall assure that new public facilities and services are phased in conjunction with the approved urban development it is intended to serve.
- U 1.1.6 **Growth and Level of Service.** The City shall require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth.

- U 1.1.7 **Infrastructure Finance.** The City shall develop and implement a financing strategy and assess fees to construct needed water, wastewater, stormwater drainage, and solid waste facilities to maintain established service levels and to mitigate development impacts to these systems (e.g., pay capital costs associated with existing infrastructure that has inadequate capacity to serve new development). The City shall also assist developers in identifying funding mechanisms to cover the cost of providing utility services in infill areas.
- U 1.1.9 **Joint Use Facilities.** The City shall support the development of joint use water, drainage, and other utility facilities as appropriate in conjunction with schools, parks, golf courses, and other suitable uses to achieve economy and efficiency in the provision of services and facilities.
- U 1.1.12 **Impacts to Environmentally Sensitive Lands.** The City shall locate and design utilities to avoid or minimize impacts to environmentally-sensitive areas and habitats.

Wastewater Systems

Goal U 3.1 Adequate and Reliable Sewer and Wastewater Facilities. Provide adequate and reliable sewer and wastewater facilities that collect, treat, and safely dispose of wastewater.

Policies

- U 3.1.1 **Sufficient Service.** The City shall provide sufficient wastewater conveyance, storage, and pumping capacity for peak sanitary sewer flows and infiltration.
- U 3.1.2 **New Developing Areas.** The City shall ensure that public facilities and infrastructure are designed and constructed to meet ultimate capacity needs to avoid the need for future upsizing. For facilities subject to incremental upsizing, initial design shall include adequate land area and any other elements not easily expanded in the future.

Airport/Meadowview Community Plan

As part of the Sacramento 2030 General Plan process, the Airport/Meadowview Community Plan will also be updated. The following goals and policies from the Public Facilities and Services chapter of the Airport/Meadowview Community Plan relate to wastewater.

Goals

1. **Ensure that the level of City services in the Airport Meadowview community meet City-wide standards.**
2. **Ensure that future physical improvements can accommodate projected growth and can meet City standards for health, safety, and attractiveness.**

Policies

1. Ensure that necessary public facilities and services are provided to meet projected demands.

South Area Community Plan

The City anticipates adopting the South Area Community Plan as part of the 2030 General Plan. The following policies are relevant to wastewater in the Community Plan area.

SA.U 1.4 **Infrastructure Improvements to Town of Freeport.** The City shall coordinate municipal water and sewer infrastructure improvements to the Town of Freeport and the Bartley Cavanaugh Golf Course in conjunction with the development of Delta Shores project and other future infrastructure improvements such as the Cosumnes River Boulevard interchange project.

SA.U 1.2 **Wastewater System Deficiencies.** The City shall assist developers in formulating plans to resolve wastewater collection system deficiencies within the South Area.

Sacramento City Code, Chapter 13.08

Sacramento City Code, Chapter 13.08 outlines the requirements for permitted discharges to the sewer service system. The Code specifies requirements for food service establishments and other businesses for discharge. There are also provisions for pretreatment, private sewer or storm drain lines, structures overlying public utilities, swimming pools and fish ponds, air conditioning and refrigeration devices, interruptions and discontinuation of service, inspections, and construction of sewer and storm drain facilities. Article V of the chapter establishes charges and fees for customers receiving sewer service and storm service from the City.

IMPACTS AND MITIGATION MEASURES**Methods of Analysis**

The proposed project would result in a variety of land uses and increases in population that would generate new sources of wastewater. This analysis used the equivalent single-family dwelling units (ESD) for proposed land uses to generate rates for wastewater. The ESD is a unit used that refers to the average wastewater flows generated by a single-family dwelling unit. Any land use type can be converted to these units. Below are the generation rates for wastewater by land use per City of Sacramento Improvement Standards.

- Single-Family Residential 1.0 per unit
- Multi-Family Residential 0.75 per unit
- Retail 0.2 per 1,000 square feet (sf) of gross floor area
- Fire Station 1.0 per station
- Schools 1.4 per 100 average daily attendance
- Community Center 0.3 per 1,000 sf of gross floor area

The average flows were calculated for each land use. Table 5.8-1 shows the estimated volume of wastewater for each land use within the project site. A variable peaking factor based on average flows of 3.6 was used to calculate peak flows for each land use per the City of Sacramento Improvement Standards. Table 5.8-2 shows the peaking factor for each land use within the project site.

Standards of Significance

For the purposes of this EIR, impacts on wastewater services are considered significant if the proposed project would:

- result in the determination of the wastewater treatment provider that adequate capacity is not available to serve the project's demand in addition to existing commitments; or
- require, or result, in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental effects.

TABLE 5.8-1

WASTEWATER GENERATION

Use	Unit of Measurement	Generation Rate (1 ESD = 400 gpd)	ESD	Wastewater (gpd)
Single-Family Residential	3,167 du	1 per unit	3,167	1,266,800
Multi-Family Residential	1,925 du	0.75 per unit	1,444	577,500
Retail	1,416,600 sf	0.2 per 1,000 sf	283	113,328
Fire Station	1 station	1 per station	1	400
Schools	1,400 students	.4 per 100 average daily attendance	20	7,840
Community Center	22,000 sf	0.3 per 1,000 sf of gross floor area	7	2,640
TOTAL (gpd)				1,968,508 gpd
TOTAL (mgd)				2 mgd

Source: PBS&J, August 2008.

TABLE 5.8-2

PEAK WASTEWATER FLOW

Use	ESD	Peaking Factor ¹	Peak ESD	Peak Flow (gpd)
Single-Family Residential	3,167	3.6	11,401	4,560,480
Multi-Family Residential	1,925	3.6	6,930	2,772,000
Retail	283	3.6	1,020	407,981
Fire Station	1	3.6	4	1,440
Schools	20	3.6	71	28,224
Community Center	7	3.6	24	9,504
TOTAL (gpd)				7,779,629 gpd
TOTAL (mgd)				7 mgd

Note:

1. A range of peaking factors from 3.15 to 3.8 was given for each lot which has differing land uses. An average of all peaking factors was taken for each lot on the project site to estimate the peaking factor for each land use.

Source: PBS&J, August 2008.

Project-Specific Impacts and Mitigation Measures

5.8-1 The proposed project would increase wastewater flows that could exceed treatment capacity at the SRWTP and/or wastewater collection infrastructure.

The proposed project would construct separate stormwater and wastewater conveyance systems on-site to connect to the city's existing separated sewer system. The project includes a series of pipes between 8 and 12 inches in the western portion of the project site, while pipes would be between 8 and 15 inches in the eastern portion of the project site. All backbone infrastructure within the project site would be engineered and constructed according to the City's design criteria for wastewater flows to ensure adequate infrastructure is available to serve maximum peak flows. Wastewater conveyance and pumping services for the project site would be provided by the City of Sacramento.

The project is served by two sanitary sewer lift stations. One lift station would be constructed west of I-5 and wastewater would be pumped under the freeway to the east side of the project. The other lift station would be constructed on the community park site located near the intersection of Delta Shores Circle South and Street E. Existing and proposed sewer facilities are shown on Figure 5.8-1

SRCSD has indicated the sewage flows (approximately 0.87 mgd peak) from Phase one (retail on the east side of I-5) and Phase two (development on the west side of I-5) could temporarily discharge to the 96-inch City interceptor. SRCSD has also indicated that, at project buildout, wastewater from the entire site could be pumped from the lift station at the community park site to the Central Interceptor located at the intersection of Cosumnes River Boulevard and Franklin Boulevard.

The proposed project would increase the amount of developed land uses and population in the City resulting in the generation and discharge of additional wastewater requiring treatment at the SRWTP. As shown in Table 5.8-1, the proposed project would generate an average flow of approximately 2 mgd. As shown in Table 5.8-2, the proposed project would generate approximately 7 mgd of wastewater during peak flow periods, which would increase dry weather flows to the SRWTP by more than five percent.

The SRWTP is a high-purity oxygen activated sludge facility, and is permitted to treat an ADWF of 181 mgd and a daily peak wet weather flow of 392 mgd. Currently, the facility's ADWF is approximately 165 mgd. As shown in Table 5.8-2, at full buildout the proposed project would generate approximately 7 mgd of wastewater during peak flow periods. Existing flows plus flows from the proposed project would be 172 mgd. This is well below the existing capacity of the SRWTP.

As indicated above, SRCSD has provided options for temporary and permanent connections to their interceptor system. In addition, infrastructure on-site would also be constructed as part of the proposed project which would accommodate wastewater generated by the project. Therefore, this impact would be *less than significant*.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

Cumulative impacts to the SRWTP are based on consideration of all future growth within the service area of the SRWTP and the City of Sacramento.

5.8-2 The proposed project, in combination with other development within the SRWTP service area, could increase wastewater flows that could exceed treatment capacity at the SRWTP and/or wastewater collection infrastructure.

The proposed project, in combination with other development in the SRWTP service area, would increase population in the City and result in a cumulative increase in wastewater flows to the SRWTP. The average daily dry weather flow to the SRWTP at full build-out of the City's 1988 General Plan is estimated at 129.1 mgd and peak flow is estimated at 305.9 mgd. Under the 2030 General Plan the net population growth through 2030 would result in an increased demand of approximately 25.7 mgd ADWF. Existing ADWF treated by the SRWTP is approximately 165 mgd,

which is under the flow estimates projected in the SWRTP 2020 Master Plan for both 2005 and 2010 (174 mgd ADWF and 196 mgd ADWF, respectively).

As previously discussed, the SRWTP currently receives an ADWF of 165 mgd, less than its permitted capacity of 181 mgd of dry weather flow, so the SRCSD is not currently undergoing any expansions to the treatment plant.

Based on the Sacramento Area Council of Government's (SACOG) regional population projections, SRCSD's Regional 2020 Master Plan accommodates for expansions of the treatment plant as growth occurs. This plan is intended to ensure that the SRWTP facilities have sufficient capacity to meet planned growth in the service area through the year 2020. In addition, the Master Plan is updated every five years to account for changes in existing and projected population. Any necessary changes to capacity would occur incrementally, as regional population growth demands greater treatment capacity.² Therefore, the cumulative impact would be less than significant.

Future development in the city of Sacramento must assess, in consultation with the Utilities Department and SRCSD, the ability for existing wastewater infrastructure to serve any new proposed development. This assessment would be done on a case-by-case basis and improvements and developer fees would be determined at that time. Because implementation of the existing programs is expected to ensure that capacity is available at the SRWTP and in the existing wastewater infrastructure as growth occurs, and the project would not contribute to the need to expand the SRWTP, the project's contribution to cumulative wastewater flows would not be considerable and impacts to the SRWTP facilities would be considered ***cumulatively less than significant***.

Mitigation Measure

None required.

2 City of Sacramento, *The Towers on Capitol Mall Draft EIR*, May 2005, page 5.5-16.

WATER SUPPLY

This section of the EIR describes the water supply that would serve the proposed project in relation to overall water supplies provided by the City of Sacramento. In doing so this section assesses the expected water demand resulting from the proposed project, evaluates the effects of the proposed project on existing and future water infrastructure, and recommends mitigation measures, where appropriate.

ENVIRONMENTAL SETTING

Existing Water Sources and Supplies

The City obtains the majority of its water supply from two surface water sources (the Sacramento and American rivers) and groundwater makes up the balance of supply.

Surface Water

Most of the City's water supply comes from surface water that is diverted pursuant to the City's surface water rights and entitlements. These consist of water rights established before 1914, water rights established after 1914 and a settlement contract the City has with the United States Bureau of Reclamation (USBR). Each of these is discussed briefly below.

The City claims pre-1914 appropriative rights, which entitle the City to water from the Sacramento River. The City's right is based on use of Sacramento River water since 1854; this pre-1914 appropriative right allows for direct diversion of 75 cubic feet per second (cfs) from the Sacramento River.

The City's post-1914 Sacramento River rights are reflected in five water rights permits issued by the SWRCB or its predecessor, the State Water Rights Board. Permit 992 authorizes the City to take water from the Sacramento River by direct diversion, and has a priority date of March 30, 1920. Permit 992 authorizes the City to divert up to 81,800 acre-feet annually (AFA) with a maximum diversion of 225 cfs. This permit allows the City to use diverted Sacramento River water within the city limits, as this area changes from time to time through annexations.

The City has four additional water right permits authorizing diversions of American River water. Permits 11358 and 11361 authorize the City to divert water from the American River by direct diversion, and have priority dates of October 29, 1947, and September 22, 1954, respectively. These permits allow for diversions at the City's E.A. Fairbairn Water Treatment Plant (FWTP), and specify a combined maximum allowable rate of diversion of 675 cfs. The authorized place of use (POU) for both permits is 79,500 acres within and adjacent to the city.

The final two permits (Permits 11359 and 11360) authorize re-diversion for consumptive uses of American River tributary water previously diverted by the SMUD's Upper American River Project (UARP). Permits 11359 and 11360 have priority dates of February 13, 1948, and July 29, 1948, respectively, and the POU for both permits is 96,000 acres within and adjacent to the City. These permits allow for diversions at the FWTP, and at the City's SRWTP. The combined maximum

allowable diversion under these permits includes re-diversion of up to 1,510 cfs of UARP direct diversion water and up to 589,000 AFA of UARP stored water.

The City also has a water rights settlement contract entered into in 1957 by the City and the USBR. At that time, the State Water Rights Board was deciding how to allocate water rights on the American River among numerous competing applicants, including the City and the USBR. The City and the USBR had protested each others' water rights applications. This contract settled those differences and enabled both parties to withdraw their protests, to the benefit of both parties. The essence of the City/USBR settlement contract is that the City agreed to the following: (1) to limit its combined rate of diversion under its American River water rights permits to a maximum of 675 cfs, up to a maximum amount of 245,000 AFA in the year 2030, and (2) to limit its rate of diversion under its Sacramento River water rights permit to a maximum of 225 cfs and a maximum amount of 81,800 AFA. This limits the City's total diversions of Sacramento and American River water to 326,800 AFA in the year 2030 as shown in Table 5.8-3. The contract also specifies an annual build-up schedule to this maximum amount, as shown in Table 5.8-4; the maximum diversion specified for 2005 is 205,000 AFA.

Permit	Supply Source	Maximum Permitted Diversion	
		AFA	cfs
1957 USBR 2030 Contractual Maximum	American River	245,000	675
	Sacramento River	81,800	225
	TOTAL	326,800	900

Source: PBS&J 2007, adopted from the City of Sacramento USBR Contract.

Source	2005	2010	2015	2020	2025	2030
American River	123,200	145,700	170,200	196,200	222,200	245,000
Sacramento River	81,800	81,800	81,800	81,800	81,800	81,800
TOTAL	205,000	227,500	252,000	248,000	304,000	326,800

Source: PBS&J 2007 adapted from the City of Sacramento USBR Contract.

In return, the contract requires USBR to make available at all times enough water in the rivers to enable the agreed-upon diversions by the City. The City agreed to make an annual payment to USBR for Folsom Reservoir storage capacity used to meet the USBR's obligations under the contract, beginning with payment for 8,000 acre feet (AF) of storage capacity in 1963 and building up, more or less linearly, to payment for the use of 90,000 AF of storage capacity in 2030. The settlement contract is permanent and not subject to deficiencies. The USBR contract, in conjunction with the City's water rights, provides the City with a very reliable and secure water supply.

The City's diversions of American River water at the FWTP are also subject during certain time periods to limitations specified in the Water Forum Agreement (WFA). The Water Forum was started

in 1993 by a group of water managers, local governments, business leaders, agricultural leaders, environmentalists, and citizen groups with two “co-equal” goals: to provide a reliable and safe water supply through the year 2030, and to preserve the wildlife, fishery, recreational, and aesthetic values of the Lower American River. After six years of intense interest-based negotiations, the Water Forum participants approved the 2000 WFA.

As part of the WFA, each water purveyor signed a purveyor specific agreement (PSA) that specified that purveyor’s Water Forum commitments. The City’s PSA limits the quantity of water diverted from the American River at the FWTP during two hydrologic conditions: extremely dry years (i.e., “Conference Years”) and periods when river flows are below the so-called “Hodge Flow Criteria” issued by Judge Richard Hodge in the *Environmental Defense Fund v. East Bay Municipal Utility District* litigation. These limiting criteria are as follows: 2,000 cfs from October 15 through February; 3,000 cfs from March through June; and, 1,750 cfs from July through October 14. These two conditions, collectively referred to as the “PSA Limitations,” are described in more detail below.

The City’s PSA defines extremely dry years (i.e., “Conference Years”) as years in which the California Department of Water Resources (DWR) projects an annual unimpaired flow into Folsom Reservoir of 550,000 AFA or less, or the projected March through November unimpaired flow into Folsom Reservoir is less than 400,000 AFA. During Conference Years, the City has agreed to limit its diversions for water treated at the FWTP to 155 cfs and 50,000 AFA. Conference Years have occurred on the American River only twice during the 72 year period of record historical hydrology.

In addition to Conference Years, the City’s PSA specifies limitations on the City’s diversion rate at the FWTP when American River flows bypassing the FWTP are less than the Hodge Flow Criteria. Based on CALSIM II analysis of the 1922 to 1994 climate data, 59 percent of years will experience flows that are less than Hodge flow conditions at some time during the peak months of June through August. In comparison, when flow passing the FWTP is greater than the Hodge Flow Criteria and Conference Year conditions do not exist, the PSA allows diversions of American River water up to the FWTP’s current maximum rate of 310 cfs (200 mgd).

It is important to note that the WFA does not restrict diversion under the City’s American River entitlements from a Sacramento River diversion point; therefore, during a Conference Year condition the City’s annual surface water diversion amounts are limited only by the FWTP Conference Year condition and the diversion and treatment capacity at the SRWTP. Assuming a maximum treatment capacity of 50,000 AFA at the Fairbairn WTP and 180,000 AFA at the Sacramento WTP, the current drought limiting scenario allows a surface water production of 230,000 AFA.

Sacramento River Water Reliability Study

The City is participating as a cost-sharing partner in the Sacramento River Water Reliability Study (SRWRS), which includes a feasibility study for a new Sacramento River diversion. The SRWRS includes development of alternatives, an environmental evaluation, and consultation with federal and

state agencies regarding potential impacts. The USBR is the lead agency for federal review and Placer County Water Agency is the lead agency for local review.³

One of the alternatives being evaluated in the SRWRS is for an additional WTP with a treatment capacity of 235 mgd (325 cfs) off the Sacramento River near Elverta Road, north of the Sacramento International Airport. The City would acquire 145 mgd of new capacity when the new WTP is operational. With the addition of the new Sacramento River WTP, the maximum combined production of potable water at all three WTP's would be 505 mgd, or a total annual production capacity of 311,800 AFA, under continuous operation. This is 95 percent of the maximum diversion amount specified in the USBR settlement contract for the year 2030. The potential completion date of a new Sacramento WTP is within 10 to 15 years prior to buildout in 2030 of Sacramento's current General Plan.

Groundwater

The City maintains 32 wells for potable use; 23 wells are actively used to supply drinking water.⁴ The total capacity of the wells is estimated to be 20 mgd, with a sustainable capacity of approximately 30 mgd and produces up to 22,400 AFA. The 2000 to 2005 annual average groundwater pumping was 22,992 AF.⁵ The wells pump primarily from the DWR North American Subbasin, with two active drinking water wells pumping from the South American Subbasin.

The North and South American Subbasins are described in the 2003 update to the DWR Bulletin 118-3. The underlying geology or hydrostratigraphy of the both basins consists of a variety of geologic formations that make up the water bearing units. There are two aquifer systems: an upper unconfined system consisting of the Victor, Fair Oaks, Laguna, Modesto Formations, and a lower, semi-confined system in the Mehrten Formation. These geologic formations are composed of lenses and layers of inter-bedded sand, silt, and clay with coarse-grained stream channel deposits. The groundwater contained in the upper aquifer system of the Victor, Fair Oaks, Laguna, Modesto, Riverbank, and Turlock Lake Formations along with Arroyo Seco and South Fork Gravels⁶ is of superior quality compared to that in the lower semi-confined system, mainly because the water in the Mehrten Formation is higher in iron and manganese, and requires more treatment. The upper unconfined system only requires chlorination treatment to be potable.⁷

In South American Subbasin, DWR Bulletin 118 references a 1993 Montgomery Watson study that estimates groundwater withdrawals are in balance with recharge for the Subbasin. The conclusion is supported by groundwater levels which have stabilized after recorded declines since the 1960's.

3 Jim Peifer, City of Sacramento and Sammie Cervantes, USBR, personal communication updating Initial Alternatives Report. Final Version, March 2005. Sacramento River Reliability Study, August 9, 2007.

4 Dan Sherry, City of Sacramento, Utilities Department. Status of groundwater wells, June 23, 2005.

5 Calculated from the City of Sacramento, Department of Utilities, *Operational Statistics Annual Reports*.

6 Department of Water Resources, *Bulletin 118*, Updated 2003, Sacramento Valley Groundwater Basin, North American and South American Subbasins. <www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs_desc/5-21.65.pdf>, updated February 27, 2004. <www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs_desc/5-21.64.pdf>, updated January 20, 2006.

7 Sacramento Groundwater Authority, *Groundwater Management Plan*, <www.sgah2o.org/sga/programs/groundwater>, page 7, 2003.

As a result of the Water Forum Successor Effort, the Central Sacramento County Groundwater Forum (CSCGF) has developed the Central Sacramento County Groundwater Management Plan (CSCGMP).⁸

The North American Subbasin includes the Project area; DWR Bulletin 118 references a 1990 land-use based water balance for the subbasin which estimated groundwater withdrawals in excess of 285,000 AFA above annual recharge. The Sacramento Groundwater Authority (SGA) prepared a groundwater management plan (GMP) in 2003 for that portion of the Subbasin north of the American River and up to the Sacramento County line. Placer County Water Agency (PCWA) prepared a groundwater storage study for the northern half of the North American Subbasin. The groundwater reports by PCWA and SGA document declining groundwater levels prior to 1992. Since 1992 a reduction of groundwater pumping has resulted in stabilized groundwater levels.^{9,10}

The CSCGF and the SGA were developed in a consensus-based process, and these included stakeholders throughout both basins. GMPs are adaptive management tools and represent a critical step in establishing a framework for maintaining a sustainable groundwater resource for the various users overlying the basins. The GMPs are consistent with the provisions of California Water Code sections 10750 et seq. Within these programs the SGA and the CSCGF will continually assess the status of the groundwater basin and make appropriate management decisions to sustain the basin. The City is a member of both the SGA and CSCGF. The SGA and CSCGF share a common goal of the responsible management of the groundwater basin through a commitment to not exceed the long-term sustainable yield of the Subbasins. The SGA sustainable yield is estimated to be approximately 131,000 AFA and the CSCGF sustainable yield is estimated to be approximately 273,000 AFA according to the WFA and GMPs. The sustainable yields determined through the WFA provide for sufficient groundwater pumping to meet the projected level of groundwater demand through 2030.¹¹ The process to determine the sustainable yield took into account future pumping by the various groundwater users within the applicable subbasin, water quality, dewatering of wells, groundwater pumping costs, and ground subsidence.

SGA and CSCGF members, in accordance with the WFA, are proceeding with a conjunctive use program to responsibly manage and use the groundwater systems. This conjunctive use effort is part of the WFA 30-year agenda. A conjunctive use program accounts for the annual climatic variability of the region, whereby in normal or wet years of precipitation the water providers will divert more surface water and reduce or eliminate groundwater use, allowing the groundwater systems to recharge. In dry years when the in-stream flows must be maintained in the lower American River, groundwater pumping will be increased to supplement the reduced diversions from the river systems.

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- 8 Central Sacramento County Groundwater Management Plan. 2006. <www.waterforum.org/CSCGWF/CSCGMP_FINAL_02_27_06.pdf>
- 9 Placer County Water Agency, *Western Placer County Groundwater Storage Study*, Final Report, December 2005, page 3-9.
- 10 Sacramento Groundwater Authority, *Groundwater Management Plan*, 2003, page 17.
- 11 Sacramento Groundwater Authority, *Central Sacramento County Groundwater Management Plan*, 2006, page 1-4.

As part of this groundwater management strategy the SGA recently released a Basin Management Report (BMR) for 2004-2005 that updates the current SGA uses of the North American Subbasin. The BMR calculated groundwater pumping by SGA signatories at 91,096 AFA; this is below the agreed-upon sustainable yield of 131,000 AFA. Notably, the BMR shows that between 1997 and 2004 a cone of depression near the central part of the SGA area has rebounded by approximately five feet as a result of less groundwater pumping and utilizing more surface water by the members of the SGA.

Based on the information above, the supply of groundwater in the Subbasins from which the City's wells pump groundwater is sufficient to meet cumulative groundwater demands projected through 2030, and this is consistent with the sustainable yields determined for these areas by the WFA.

Water Treatment, Storage, and Distribution

Annually, the City of Sacramento provides more than 45 billion gallons of water for drinking, household use, fire suppression, landscaping, and commercial and industrial use. The distribution system is a pipeline network, where surface water and groundwater is mixed within the system.¹² The Department of Utilities operates and maintains the City's two water treatment plants, eight pump stations, 10 storage reservoirs, 32 municipal wells, thousands of hydrants, and nearly 1,500 hundred miles of pipeline to convey water to homes and businesses throughout the City.¹³ The City's service area spans north to Elkhorn Boulevard in North Natomas, east to Watt Avenue and Highway 50, west to the Sacramento River and south to Sheldon Road.

Water Treatment

The City owns and operates two water diversion and treatment facilities: the Sacramento River Water Treatment Plant (WTP) and the E.A. Fairbairn WTP on the American River. The WTPs operate as demands dictate, in other words treatment is directly related to consumer demands. The Sacramento River WTP is west of I-5 and south of Richards Boulevard, and was expanded in 2003; this increased the plant's capacity from 110 mgd (123,260 AFA) to 160 mgd (179,288 AFA). The Fairbairn WTP, located on the south bank of the lower American River, was recently rehabilitated and expanded, which increased the plant's capacity from 100 mgd (112,055 AFA) to 200 mgd (224,028 AFA) upon installation of additional pumping mechanisms. The City is currently investigating those improvements necessary to achieve a firm capacity of 200 mgd. The UWMP states that the plant would be operational 334 days a year and could produce 205,000 AFA.¹⁴

Current Water Use

As of 2006, the City's average water demand was 50.0 mgd at the FWTP and 58.1 mgd at the WTP; maximum daily demand totaled 232 mgd, 96 mgd at FWTP and 119 mgd at SRWTP,¹⁵ an additional 17 mgd came from groundwater. The total amount of surface water and groundwater supplied in

12 City of Sacramento, *Urban Water Management Plan*, 2000, page 2-7.

13 City of Sacramento Utilities Department, *Annual Report, Operational Statistics Fiscal Year 2005/2006*.

14 City of Sacramento, *Urban Water Management Plan*, August 2006, page 5-3.

15 City of Sacramento Utilities Department, *Annual Report, Operational Statistics Fiscal Year 2005/2006*.

2007 was 138,671 AF (an average daily demand of approximately 125 mgd).¹⁶ Table 5.8-5 presents the City's historical water deliveries.

Year	Surface Water and Groundwater Supplies ²			Total Water Delivered ²				
	Population	Annual Surface Water Delivered (AFA)	Annual Groundwater Delivered (AFA)	Maximum Day Water Delivered (mgd)	Maximum Day to Average Day Ratio	Total Annual Water Delivery (AFA)	Average (mgd)	Percent Increase
1998	392,800	93,131	22,692	212.7	2.06	115,822	107.5	
1999	396,200	109,695	23,694	219.7	1.85	133,389	112.3	15.2%
2000	405,963	110,150	24,130	213.0	1.78	134,280	103.4	0.7%
2001	418,711	115,984	24,156	214.5	1.71	140,140	119.1	4.4%
2002	426,013	115,628	23,236	226.8	1.83	138,864	119.9	-0.9%
2003	433,400	114,674	25,607	223.2	1.78	140,281	125.2	1.0%
2004	441,000	128,903	17,924	NA	NA	146,827	131.1	4.7%
2005	452,959	116,452	22,521	NA	NA	138,974	124.1	-5.3
2006 ¹	NA	120,150	18,522	239.9	1.21	138,671	123.5	-0.2%

Notes:
1. City of Sacramento, Department of Utilities, Operational Statistics Report, 2005/2006.
2. Other data from corresponding annual reports.
N/A = Not available.
Source: Adapted from City of Sacramento, Department of Utilities, Operational Statistics Reports, PBS&J 2007.

Water Storage

Water storage is used to meet water demand for periods when peak hour demand exceeds maximum daily supply rates. These high demand periods usually occur for four to six hours during hot summer days and for potentially longer periods during large fire events. The City of Sacramento has nine above-ground storage reservoirs; each with a capacity of three million gallons (mg) and one underground reservoir with a capacity of 15 mg. The reservoirs are at different locations throughout the City's water distribution system. In addition, 34.5 mg of on-site storage exists at the water treatment plants (14.5 mg at the Sacramento WTP and 20 mg at the Fairbairn WTP). Therefore, the total water storage capacity in the city is 76.5 mg. This capacity represents approximately 64 percent of the City's 2004/2005 average daily water demand of 128 mgd, or approximately one-third of the 2004/2005 average maximum day demand of 215 mgd.¹⁷

Water Supply Infrastructure at the Project Site

In the city, water distribution mains range from four inches to 12-inches in diameter and convey water for municipal and industrial services, fire services and fire hydrants. City policy requires new commercial areas to install 12-inch mains in order to maintain fire flow capacities. Transmission mains are 18 inches and larger and are used to transport large volumes of water from the treatment plants throughout the distribution system. Transmission lines are used to transfer water to and from the storage reservoirs to meet changing daily and/or seasonal demands. Water service for the project would be provided by the City of Sacramento through connection to a 24-inch water

¹⁶ City of Sacramento Utilities Department, *Annual Report, Operational Statistics Fiscal Year 2005/2006*.

¹⁷ City of Sacramento Utilities Department, *Annual Report, Operational Statistics Fiscal Year 2005/2006*.

transmission line extension along Freeport Boulevard and 24th Street. A 24-inch transmission water line is proposed with the I-5/Cosumnes River Boulevard project from Freeport Boulevard to Franklin Road. The project would include a looped water system with a series of water lines ranging in size from 8-inches to 24-inches. The applicant has prepared a phased water system analysis, per City of Sacramento requirements, that indicates that adequate water pressure is available to meet fire flow requirements. In addition, the City Department of Utilities has requested that a portion of the project site be reserved for water storage facilities. The project is proposing to include a water storage facility. The site is approximately 1.55 acres and is located north of Cosumnes River Boulevard and east of 24th Street. Figure 5.8-2 shows existing and proposed water supply infrastructure at the project site.

Regulatory Context

Federal

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) established primary drinking water standards in the CWA Section 304 and states are required to ensure that potable water for the public meets these standards. Standards for 81 individual constituents have been established under the Safe Drinking Water Act, as amended in 1986. The U.S. EPA may add additional constituents in the future.

State

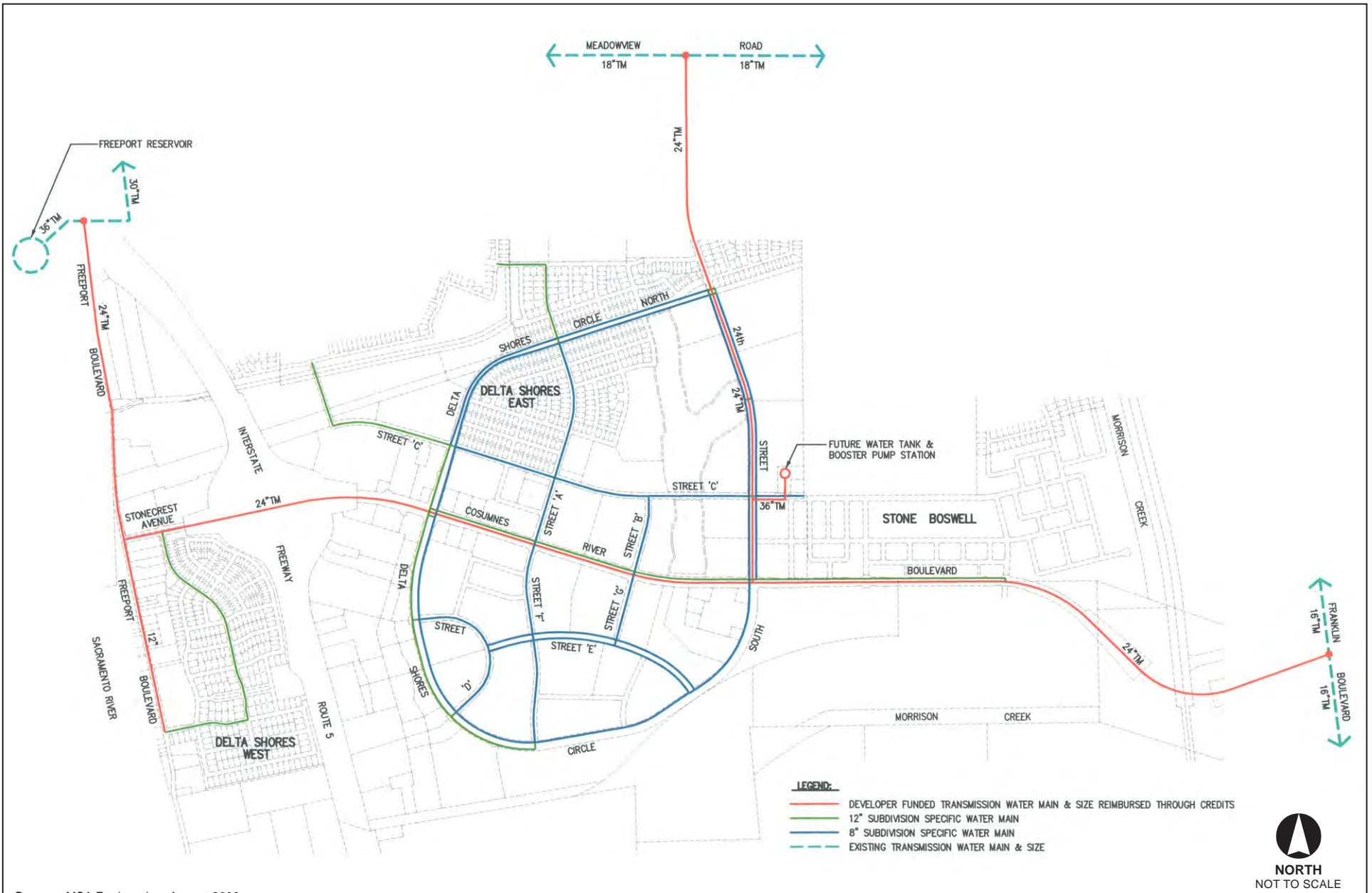
Water Management Planning Act

California Water Code Section 10610 (et seq.) requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 AFA, must prepare an UWMP. DWR provides guidance to urban water suppliers in the preparation and implementation of UWMPs. UWMPs must be updated at least every five years on or before December 31, in years ending in five and zero. The City adopted its most recent UWMP on November 14, 2006.

Senate Bill 610 - Water Supply Assessments

Senate Bill (SB) 610 was adopted in 2001 and reflects the growing awareness of the need to incorporate water supply and demand analysis at the earliest possible stage in the land use planning process. SB 610 amended the statutes of the Urban Water Management Planning Act, as well as the California Water Code Section 10910 et seq. The foundation document for compliance with SB 610 is the UWMP, which provides an important source of information for cities and counties as they update their general plans. Likewise, planning documents such as general plans and specific plans form the basis for the demand information contained in an UWMP, as well as Water Supply Assessments (WSAs) required under SB 610.

Water Code Section 10910 (c)(4) states "If the city or county is required to comply with this part pursuant to subdivision (b), the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county



Source: MSA Engineering, August 2008.

FIGURE 5.8-2
Existing and Proposed Water Transmission Facilities

OD5131100

Delta Shores

for the project during normal, single dry and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.”

Water supply planning under SB 610 and SB 221 (see below) requires reviewing and identifying adequate available water supplies necessary to meet the demand generated by a project, as well as the cumulative demand for the general region over the next 20 years, under a broad range of water conditions. This information is typically found in the current UWMP for the project area. SB 610 requires the identification of the public water supplier; the City has been identified in the WSA as the public water supplier to the Delta Shores Planned Unit Development project.

In addition, SB 610 requires the preparation of a WSA if a project meets the definition of a “Project” under Water Code Section 10912 (a). The code defines a “Project” if it meets any of the following criteria:

- A proposed residential development of more than 500 dwelling units (du);
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 sf of floor space;
- A commercial building employing more than 1,000 persons or having more than 250,000 sf of floor space;
- A hotel or motel with more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park, planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sf of floor area;
- A mixed-use project that includes one or more of these elements; or
- A project creating the equivalent demand of 500 residential units.

Alternately, if a public water system has less than 5,000 service connections, the definition of a “Project” includes any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of service connections for the public water system. The proposed project includes more than 500 du, and, therefore, qualifies as a “Project” under Section 10912 (a) of the Water Code. Thus, the City has prepared a WSA as required by these criteria under SB 610 (included as Appendix H).

The City prepared the Draft WSA in January 2008 for the proposed project using technical information included in the City’s UWMP which satisfies the documentation requirements of SB 610, CEQA 10583.5, and Water Code sections 10631, 10910, and 10912. The WSA concludes that the project site is within the City’s service area and the City provides domestic water to all development in the City’s General Plan. Furthermore, the WSA finds that the City has sufficient water supply under the City’s water rights and entitlements to serve the proposed project and projected future

growth in the City over the next 20 years.¹⁸ The full text of the January 2008 Draft Water Supply Assessment is contained in Appendix I.

Senate Bill 221- Written Verification of Water Supply

Government Code Section 66473.7(a)(1) requires an affirmative written verification of sufficient water supply. SB 221 is designed as a “fail-safe” mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs early in the planning process. This verification must also include documentation of historical water deliveries for the previous 20 years, as well as a description of reasonably foreseeable impacts of the proposed subdivision on the availability of water resources of the region. Government Code section 66473.7 (b)(1) states “The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request.” In other words, as a result of the information contained in the written verification, the city or county may attach conditions to assure there is an adequate water supply available to serve the proposed project as part of the tentative map approval process. SB 221 verification will be required for the proposed project.

Drinking Water Quality

The California Department of Public Health (DPH) is responsible for implementing the federal Safe Drinking Water Act of 1974 and its updates, as well as California statutes and regulations related to drinking water. As part of their efforts, the DPH inspects and provides regulatory oversight for public water systems within California. In addition, in the Sacramento area the CVRWQCB has the responsibility for protecting the beneficial uses of the State’s waters, including groundwater, and these include municipal drinking water supply, as well as various other uses.

Public water system operators are required to regularly monitor their drinking water sources for microbiological, chemical, and radiological contaminants to show that drinking water supplies meet the regulatory requirements listed in Title 22 of the California Code of Regulations as primary maximum contaminant levels (MCLs). Primary standards are developed to protect public health and are legally enforceable. Among these contaminants are approximately 80 specific inorganic and organic contaminants and six radiological contaminants that reflect the natural environment, as well as human activities. Examples of potential primary inorganic contaminants are aluminum and arsenic, while radiological contaminants can include uranium and radium.

Public water system operators are also required to monitor for a number of other contaminants and characteristics that deal with the aesthetic properties of drinking water. These are known as secondary MCLs. Secondary standards are generally associated with qualities such as taste, odor,

18 PBS&J, *Delta Shores Draft Water Supply Assessment*, November 2007.

and appearance, but these are generally non-enforceable guidelines. However, in California secondary standards are legally enforceable for all new drinking water systems and new sources developed by existing public water suppliers.¹⁹ The public water system operators are also required to analyze samples for unregulated contaminants, and to report other contaminants that may be detected during sampling.

Local

City of Sacramento 1988 General Plan

The City of Sacramento 1988 General Plan is currently being updated and the City anticipates adopting the new 2030 General Plan by the end of 2008. Below is a list of goals and policies that relate to water supply from the 1988 General Plan. Because the Sacramento 2030 General Plan will not be completed prior to the completion of this document, the 1988 General Plan policies are being analyzed in lieu of the new policies. Policies from the draft 2030 General Plan are also being evaluated because the project may go before Planning Commission and City Council for review after the new General Plan is adopted.

Goal A Provide and improve water supply facilities to meet future growth of the City and assure continued supply of safe potable water.

Policies

1. Develop and adopt a comprehensive water policy for the City of Sacramento that is consistent with a long range adopted plan.
2. Develop and implement a financing strategy that the City can use to construct needed water facilities.
3. Work with property owners to develop financing arrangements in order to provide needed water facilities.
4. Give high priority in the Capital Improvements Program to funding infrastructure in highly depressed and designated infill areas.
5. Provide water service meeting or exceeding State and federal regulatory agency requirements.

City of Sacramento 2030 General Plan

The City anticipates adopting its new 2030 General Plan by the end of 2008. Therefore, applicable policies from the draft 2030 General Plan are included below.

UTILITIES

Citywide Utilities

Goal U 1.1 High-Quality Infrastructure and Services. Provide and maintain efficient, high-quality public infrastructure facilities and services throughout the city.

Policies

- U 1.1.1 **Provision of Adequate Utilities.** The City shall continue to provide and maintain adequate water, wastewater, and stormwater drainage utility services to areas in the city currently receiving these services from the City, and shall provide and maintain adequate water, wastewater, and stormwater drainage utility services to areas in the city that do not currently

19 California Department of Water Resources, *California's Groundwater, Bulletin 118*, 2003.

receive these City services upon funding and construction of the infrastructure necessary to provide these City services.

- U 1.1.2 **Citywide Level of Service Standards.** The City shall establish and maintain service standards [Levels of Service (LOS)] for water, wastewater, stormwater drainage, and solid waste services.
- U 1.1.3 **Sustainable Facilities and Services.** The City shall continue to provide sustainable utility services and infrastructure in a cost-efficient manner.
- U 1.1.5 **Timing of Urban Expansion.** The City shall assure that new public facilities and services are phased in conjunction with the approved urban development it is intended to service.
- U 1.1.6 **Growth and Level of Service.** The City shall require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth.
- U 1.1.7 **Infrastructure Finance.** The City shall develop and implement a financing strategy and assess fees to construct needed water, wastewater, stormwater drainage, and solid waste facilities to maintain established service levels and to mitigate development impacts to these systems (e.g., pay capital costs associated with existing infrastructure that has inadequate capacity to serve new development). The City shall also assist developers in identifying funding mechanisms to cover the cost of providing utility services in infill areas.
- U 1.1.9 **Joint Use Facilities.** The City shall support the development of joint use water, drainage, and other utility facilities as appropriate in conjunction with schools, parks, golf courses, and other suitable uses to achieve economy and efficiency in the provision of services and facilities.
- U 1.1.10 **Safe, Attractive, and Compatible Utility Designs.** The City shall ensure that public utility facilities are designed to be safe, aesthetically pleasing, and compatible with adjacent uses.
- U 1.1.11 **Underground Utilities.** The City shall require undergrounding of all new publicly owned utility lines, encourage undergrounding of all privately owned utility lines in new developments, and work with electricity and telecommunications providers to underground existing overhead lines.
- U 1.1.12 **Impacts to Environmentally Sensitive Lands.** The City shall locate and design utilities to avoid or minimize impacts to environmentally-sensitive areas and habitats.

Water Systems

Goal U 2.1 High-Quality and Reliable Water Supply. Provide water supply facilities to meet future growth within the City's Place of Use and assure a high-quality and reliable supply of water to existing and future residents.

Policies

- U 2.1.2 **Optimize Capacity.** The City shall optimize storage, treatment, and distribution capacity of its water system.
- U 2.1.3 **Water Treatment Capacity and Infrastructure.** The City shall plan, secure funding for, and procure sufficient water treatment capacity and infrastructure to meet projected water demands.
- U 2.1.8 **New Development.** The City shall ensure that water supply capacity is in place prior to granting building permits for new development.
- U 2.1.9 **Conservation Programs.** The City shall implement conservation programs that increase water use efficiency, including providing incentives for adoption of water efficiency measures.
- U 2.1.10 **Landscaping.** The City shall continue to require the use of water-efficient landscaping in all new development.

City of Sacramento Design Standards

Section 13 of the City's Design Standards sets forth requirements regarding the design and operation of water distribution facilities. Those requirements include standards for pipe design, fire hydrants, and specific requirements for residential, commercial and industrial water service.

Airport/Meadowview Community Plan

As part of the Sacramento 2030 General Plan process, the Airport/Meadowview Community Plan will also be updated and incorporated into the General Plan. However, because the Sacramento 2030 General Plan will not be completed prior to the completion of this document (the anticipated completion date is either late 2008 or early 2009), the 1988 General Plan policies are being analyzed in lieu of the new policies. The following goals and policies from the Public Facilities and Services chapter of the Airport Meadowview Community Plan relate to water supply.

Goals

1. **Ensure that the level of City services in the Airport Meadowview community meet City-wide standards.**
2. **Ensure that future physical improvements can accommodate projected growth and can meet City standards for health, safety, and attractiveness.**

Policies

1. Ensure that necessary public facilities and services are provided to meet projected demands.
3. New Development should comply with existing City energy conservation ordinances.

South Area Community Plan

The City anticipates adopting the South Area Community Plan as part of the 2030 General Plan. The following policies are relevant to water supply.

- SA.U 1.4 **Infrastructure Improvements to Town of Freeport.** The City shall coordinate municipal water and sewer infrastructure improvements to the Town of Freeport and the Bartley Cavanaugh Golf Course in conjunction with the development of Delta Shores project and other future infrastructure improvements such as the Cosumnes River Boulevard interchange project.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The analysis in this section focuses on the nature and magnitude of the change in levels of water use compared with existing and projected water use in the project site and the City's water service area. To determine potential impacts, water demands were estimated from demand projection calculations and quantitative evaluation of data relative to the proposed project, along with existing land uses, approved projects, and proposed development.

Water Demand Analysis

Table 5.8-5 shows the historical comparison of water supply and demands based on population and treated water delivered by the City's Department of Utilities.

An accurate projection of demand can be developed using water demand factors based on land use sectors. The expected water use of the proposed project was determined by analyzing each parcel and building use and then assigning a demand factor for each use. To determine the water demand factors of the proposed project, water use demand factors were formulated based on data from a number of water supply planning sources including regional water resources studies, current or

historical uses at similar facilities, federal guidelines, personal communications with the State DWR and the City's Department of Utilities. Table 5.8-6 shows how the proposed project would potentially use 4,507.8 AFA or an annual average demand of 4.97 mgd (4,979,897.9 gallons per day), demands for each parcel are quantified and demands are aggregated by land use designation. The calculated demand represents the upper range of the potential demand for the proposed project. It should be noted that the WSA on which the project demands are based was prepared for an earlier version of the proposed project, which included more low-density residential uses, which use greater amounts of water than medium and high-density residential. Therefore, the actual demand from the proposed project would likely be less than what was estimated by the WSA. The conclusions from the WSA and the following impact analysis are still valid for the project as currently proposed. Table 5.8-7 shows the demand factors for each of the facilities at the proposed project site.

Standards of Significance

For the purposes of this EIR, impacts on water supply are considered significant if the proposed project would:

- increase demand for potable water in excess of existing supplies; or
- result in inadequate treatment capacity or inadequate distribution infrastructure to supply the project.

Project-Specific Impacts and Mitigation Measures

5.8-3 The proposed project's demand for potable water could exceed available sources of water supply.

As shown in Table 5.8-6, the proposed project at buildout would generate a demand for water of approximately 2,534 AFA. The WSA assumed that the proposed project would use water supplied through surface water rights and entitlements from the Sacramento and American rivers, along with groundwater pumped through City operated groundwater wells. These supplies would be delivered through existing City supply facilities and new water infrastructure constructed for delivery into the project site per the requirements of the City of Sacramento. Overall water consumption for the City in 2006 (the most recent year for which data are available) totaled 138,671 AF, which is 75,329 AF less than the maximum diversion amount specified in the USBR settlement contract for 2007 (214,000 AFA). If the increased demand from the proposed project is added to the 2006 demand of 138,671 AF, the total demand in the City would be 141,205 AFA, which is 72,795 AF less than the maximum diversion amount specified in the USBR contract for 2007. In addition, the maximum amounts specified in the USBR contract continue to increase annually and culminate at 326,800 AFA in 2030. Therefore, the maximum diversion amount allowed under the USBR contract would continue to increase simultaneously with customer demands. This analysis finds that the City has sufficient water supply under its water rights and entitlements and secured in the City/USBR settlement contract to serve the proposed project. Therefore, the proposed project would not exceed water supplies in the City, and this is considered a ***less-than-significant impact***.

TABLE 5.8-6						
DELTA SHORES ¹ LAND USE AND WATER DEMAND SUMMARY						
	Acres	DU/acre	Dwelling Units	Water Demand Factor	Average Day Demand (gpd)	Average AFA
Residential Uses						
High Density Residential²						
Town Homes/ Attached Product	64.4	26.99	1738	230 gpd ⁶	399,740	448
Mixed-Use Residential ⁸	19.9	28.61	187	230 gpd ⁶	43,010	48
Medium Density Residential ⁶	178.0	14.00	2492	350 gpd ⁶	872,200	977
Low Density Residential						
Single Family (5,000 -7,000 sf)	136.9	4.93	675	520 gpd ⁶	351,000	393
Subtotal	399.2		5,092		1,665,950	1,866
Commercial/Mixed-Uses³						
Regional Center	127.4	76.4 acres water uses		2,759 gpd/ac	210,898	236
Subtotal	127.4				210,898	236
Parks²						
Community Park	26.6			3.89 af/ac/yr ⁷	104	104
Neighborhood Park (8) + (1) mini park	35.1			3.89 af/ac/yr ⁷	137	137
Water Feature and Detention Basin ⁹	26.8			4.51 af/ac/yr ¹⁰	121	121
Open Space + Trails	28.0			No Irrigation Demand	--	--
Wetland Restoration	27.8			No Irrigation Demand	--	--
Subtotal	144.5				361	362
Public Uses						
Schools	19.8		11.94 Indoor ⁴ 200 school days	2.5 af/ac/yr ⁷	48,633	30
			7.90 Outdoor ⁵ 200 school days	3.89 af/ac/yr ⁷	50,448	31
Community Center	2.6		1.56 Indoor ⁴ 260 days	2.5 af/ac/yr ⁷	4,888	4
			1.04 Outdoor ⁵ 260 days	3.89 af/ac/yr ⁷	5,070	4
Subtotal	22.5				109,040	69
Infrastructure/Quasi Public						
Roadways	84.4		8.44 Street Landscaping ¹⁰	3.89 af/ac/yr ⁷	29,324	33
Utility Areas	4.1			No Irrigation Demand	--	--
Subtotal	88.5				29,324	33
Subtotal Land Uses with Water Demands	722.2				1,985,888	2,534
Subtotal Non-Irrigated Areas ⁸	59.9				--	--
TOTALS	782.1				1,985,888	2,534
Notes:						
1. Project area was included in the City of Sacramento Urban Water Management Plan, Adopted November 14, 2006.						
2. High density residential (21+ DU/acre) from Placer County Water Agency IRWP, October 2005.						
3. Assumes 60% of gross acreage developed for commercial uses corresponding water demand was assumed for net acreages; Placer County Water Agency (PCWA), Draft Integrated Water Resources Plan, (Brown and Caldwell, 2005).						
4. 40% of schools property irrigated areas; PCWA Draft Integrated Water Resources Plan, (Brown and Caldwell, 2005).						
5. 60% of total school area water demand; PCWA Draft Integrated Water Resources Plan, (Brown and Caldwell, 2005).						
6. Water demand factors from Nolte Engineering with West Yost & Associates, Proposed Water Demand/Wastewater Generation Report, 1994 - Demand values updated in 2005 for SB 610 Water Supply Assessment Analysis.						
7. Jim Peifer, Senior Engineer, City of Sacramento Department of Utilities Memorandum to PMC Consultants, December 21, 2005.						
8. Non-Irrigated Areas comprise Public Facilities, Roads, Rights-of-Way without landscaping, Open Spaces and Trails.						
9. Water feature annual fill requirement based on Evaporation Pan calculation for Sacramento Water Balance. ET _o /80 =ET _{pan} (Leaching Factor = 0%; Distribution Uniformity = 100%)						
10. Assumes 10% of roadway landscaping with irrigation demands.						
Source: PBS&J, August 2008.						

	2005	2010	2015	2020	2025	2030
American River	50,000	50,000	50,000	50,000	50,000	50,000
American River diverted from the Sacramento River	73,200	95,700	98,200 ²	98,200 ²	98,200 ²	98,200 ²
Sacramento River	81,800	81,800	81,800	81,800	81,800	81,800
Total Surface Water Supply	205,000³	227,500³	230,000	230,000	230,000	230,000
Groundwater Supplies⁴	33,600	33,600	33,600	33,600	33,600	33,600
TOTAL WATER SUPPLY²	238,600	261,100	263,600	263,600	263,600	263,600
City Demand and Wholesale/Wheeling Demand ⁵	146,647	161,401	178,253	196,759	217,182	239,805
<i>Project Demand</i>	~	4,507.8	4,507.8	4,507.8	4,507.8	4,507.8
TOTAL DEMAND⁶	146,647	165,909	182,761	201,267	221,690	244,313
AVAILABLE SUPPLY	58,353	95,191	80,839	62,333	41,910	19,287

Notes:

1. “Conference Year”, defined by the WFA, when the projected unimpaired inflow to Folsom Reservoir is less than 400,000 AF.
2. Limited by present Sacramento River WTP capacity not WFA agreement.
3. Total Surface water supply is based on maximum amounts specified in the City’s USBR settlement contract and not based on the maximum conference year treatment and diversion capacity of 230,00 AFA.
4. Based on City’s current groundwater production.
5. Demands during Hodge Flow and Conference Years are reduced by 6,616 AFA as no sales from the City to Sacramento Suburban are required.
6. Net Project Demands were calculated into the City’s 2006 Urban Water Management Plan projected demands, therefore the total demand is unchanged in all subsequent years.

Source: PBS&J, July 2006, adapted from City of Sacramento Urban Water Management Plan.

Mitigation Measure

None required

5.8-4 The proposed project could require the construction of new water supply treatment and/or distribution utilities or the expansion of existing treated water and water distribution systems.

Sacramento’s 2004/2005 maximum day water demand was 232 mgd (96 mgd from the American River, 119 mgd from the Sacramento River and 17 mgd from groundwater). The project’s average day demand is 4.97 mgd with a maximum day demand of 7 mgd. It should be noted that this was accounted for in the City’s 2006 UWMP maximum day demand projections through the year 2030. By adding the project’s water demand to the City’s water demand results in a water demand of approximately 236.8 mgd. The Sacramento WTP and Fairbairn WTP have a maximum combined treatment capacity of 360 mgd (403,398 AFA) if operated continuously, and a maximum combined treatment capacity of 260 mgd when diversions at the Fairbairn WTP are limited by the City’s WFA PSA. In either case, the City’s maximum day treatment capacities exceed maximum day demands.

As stated previously, Section 13 of the City’s Design Standards sets forth requirements regarding the design and operation of water distribution facilities. Those requirements include standards for pipe design, fire hydrants, and specific requirements for residential, commercial and industrial water service. Final approvals by Department of Utilities staff would be necessary prior to delivery of water to the project site.

Water service for the project would be provided by the City of Sacramento through connection to a 24-inch transmission water line extension along Freeport Boulevard and 24th Street. The project would include a looped water system with a series of water lines ranging in size from 8-inches to 24-inches. See Figure 5.8-2 for existing and proposed water supply infrastructure at the project site. The project applicant has prepared a phased water analysis, per City requirements, that indicates that adequate water pressure is available to meet fire flow requirements. In addition, the City Department of Utilities has requested that a portion of the project site be reserved for water storage facilities. The project is proposing to include an on-site water storage facility located on 1.55 acres northeast of the intersection of Cosumnes River Boulevard and 24th Street. The exact size of the facility has not yet been determined, but is to be designed and sized by the City Department of Utilities in accordance with all City requirements for water storage.

In summary, the City has adequate conveyance systems and sufficient treatment capacity to serve the proposed project. On-site water conveyance and delivery improvements are included in the project design and would be approved by the Department of Utilities prior to installation. Compulsory construction inspections would approve the materials, equipment and installations of the on-site water supply delivery systems. Therefore, impacts pertaining to water supply infrastructure would be considered *less than significant*. As appropriate, any impacts associated with the installation of water supply infrastructure on-site are evaluated as part of the construction-related impacts analyzed in the other technical sections of this EIR.

Mitigation Measure

None required

Cumulative Impacts and Mitigation Measures

The cumulative analysis for water supply, distribution, and storage considers the potential environmental effects of supplying water to the proposed project in addition to the other anticipated water demands that may be served by the City of Sacramento through year 2030.

5.8-5 The proposed project could contribute to cumulative increases in water demand throughout the city.

The proposed project would increase the demand for water in the City's service area beyond the existing demand of approximately 138,671 AFA in 2006; this demand is well below the 2007 maximum diversion amount of 214,000 AFA specified in the City/USBR settlement contract. In addition, the City's authorized supply under the USBR contract increases until 2030 when the maximum diversion amount specified in the USBR contract reaches 326,800 AFA. The City projected annual demand would be approximately 70 percent of the maximum diversion amount specified in the USBR settlement contract assuming a constant 2.0 percent annual growth rate as shown in Table 5.8-7. The City's annual growth rate would need to be approximately twice this rate in order to exceed the available water supply. The City is preparing a new General Plan, which is not expected to include a doubling of the population over current buildout estimates; the estimated population in 2030 is approximately 641,000.

The City, under its WFA PSA, has voluntarily limited diversions to 50,000 AFA off the American River during extremely dry years, (i.e. Conference Years) years in which the State of California DWR annual projected unimpaired inflow into Folsom Reservoir would be 550,000 AFA or less, also referenced as the March through November projected unimpaired flow into Folsom Reservoir being less than 400,000 AF, or below-Hodge flow criteria.²⁰ The WFA does not restrict diversion under the City's American River entitlements from a Sacramento River diversion point; therefore, during a Conference Year condition or below-Hodge flows the City's annual surface water diversion amounts are limited only by the FWTP Conference Year condition and the diversion and treatment capacity at the WTP. Assuming a maximum treatment capacity of 50,000 AFA at the Fairbairn WTP and 180,000 AFA at the Sacramento WTP, the current drought limiting scenario allows a surface water production of 230,000 AFA. The City has sustainable groundwater production of 33,600 AFA, which results in total water supply capacity of 266,600 AFA during a Conference Year or Hodge Flow condition. This exceeds the 2030 projected City-wide demands of 240,000 AFA. The USBR contract, in conjunction with the City's water rights, provides the City with a very reliable and secure water supply and this analysis finds that the City has sufficient water supply under its water rights and entitlements to serve the proposed project and projected City-wide growth.

The City has historically constructed, expanded and improved its water diversion, treatment and transmission facilities as needed to accommodate increasing water supply demands, and the City would continue to do so now and in the future. For example, the City is currently investigating ways to obtain additional water through either more aggressive conservation programs or exploring the possibility of constructing a new water intake/diversion structure on the Sacramento River. The City is a partner on the SRWRS, which is investigating alternatives for an additional 365 cfs (235 mgd) diversion on the Sacramento River and construction of an associated water treatment facility. The City would have access to 145 mgd of the available 235 mgd. The 145 mgd diversion and WTP alternative included in the SRWRS would avoid any future capacity deficits. By 2030 the City is anticipating population would exceed 640,000 residents. The current population is approximately 446,000 residents. If the City does decide to pursue construction of a new intake/diversion structure the intake/diversion project would be required to go through a separate environmental review process. The City's existing water rights and entitlements are sufficient to supply all City demands at buildout.²¹

Table 5.8-8 shows the City's supply and demand under below-Hodge flow conditions; notably, the table illustrates that the City can meet annual City-wide demands now and over a twenty-year planning horizon. Therefore, the proposed project and buildout of the General Plan would not exceed water supplies in the City, and this is considered a ***less-than-significant impact***.

Mitigation Measure

None required

²⁰ Hodge Flows specify minimum flows that must remain in the Lower American River. October 15 – February is 2,000 cfs; March - June is 3,000 cfs; and July – October 14 is 1,750 cfs.

²¹ This assumes the City would continue to achieve observed conservation savings of 7.5 percent overall and would experience greater water supply savings through voluntary residential meter retrofits (BMP 4) outlined in the 2006 Urban Water Management Plan. Jim Peifer, City of Sacramento Personal communication August 3, 2007.

	2005	2010	2015	2020	2025	2030
American River ¹	200	200	200	200	200	200
Sacramento River ¹	160	160	160	160	160	160
TOTAL SURFACE WATER SUPPLY	360	360	360	360	360	360
Groundwater Supply	20	20	20	20	20	20
TOTAL WATER SUPPLIES	380	380	380	380	380	380
City Demand and Wholesale/Wheeling Demands ²	254	271	294	325	369	433
<i>Net Project Demand</i>	~	4.97	4.97	4.97	4.97	4.97
TOTAL WATER DEMAND	254	275.97	298.97	329.97	373.97	437.97
Available Capacity without new facilities	126	104.03	81.03	50.03	6.03	-57.97
Notes:						
1. Surface supply is based on nominal plant capacity.						
2. Based on 2.2 percent annual growth rate between 2004 and 2030 demand.						
Source: PBSJ, August 2008.						

5.8-6 The proposed project would contribute to cumulative increases in the need for water supply treatment and/or distribution facilities.

Table 5.8-8 shows the maximum day surface water supply and demand under normal flow conditions. Table 5.8-9 shows a treatment capacity reduction at the Fairbairn WTP from 200 mgd to 100 mgd during below-Hodge flow conditions (pursuant to the City's PSA), resulting in a total maximum day treatment capacity of 260 mgd under such conditions. When the City's current sustainable groundwater capacity of 20 mgd is added to the treated surface water, this results in a total water delivery of 280 mgd during below-Hodge flow conditions. Assuming a conservative growth rate of 2.2 percent for future maximum day demands, and assuming full use of the current sustainable groundwater supply of 20 mgd during below-Hodge flow conditions, in the absence of system improvements, a treatment capacity deficit could occur in 2015, as shown in Table 5.8-9. The City could expect a maximum day demand capacity deficit of approximately 19 mgd at that time.²² As shown in Table 5.8-10, the deficit would increase over subsequent years and in 2030, under below-Hodge flow conditions the projected capacity deficit would increase to 157 mgd or up to 177 mgd deficit without pumping groundwater.

At full build out the project would add an additional 13,086 new residents to the city. This increase in population would comprise approximately 7 percent of the anticipated 194,000 new residents expected between now and year 2030. Modeling analysis performed by the City Department of Utilities has determined that the Delta Shores development would impact the service pressures during peak hour demand periods in the southern portion of the city, adjacent to and east of Bruceville Road. Pressures during these periods could fall below the required standard for domestic uses.

²² The City's PSA precludes delivery of 20 mgd to Sacramento Suburban Water District; therefore, City-wide cumulative demand is reduced by 20 mgd. Sacramento Suburban Water District, Purveyor Specific Agreement, June 2003.

TABLE 5.8-9

MAXIMUM DAY SURFACE WATER SUPPLY CAPACITY (EXISTING FACILITIES) AND DEMAND COMPARISON DURING BELOW-HODGE FLOW CONDITIONS (MGD)

	2005	2010	2015	2020	2025	2030
American River ¹	100	100	100	100	100	100
Sacramento River ²	160	160	160	160	160	160
TOTAL SURFACE WATER SUPPLY	260	260	260	260	260	260
Groundwater Supply	20	20	20	20	20	20
TOTAL WATER SUPPLIES	280	280	280	280	280	280
City Demand and Wholesale/Wheeling Demands ³	254	271	294	325	369	433
<i>Project Demand</i>	~	4.97	4.97	4.97	4.97	4.97
TOTAL WATER DEMAND⁴	254	275.97	298.97	329.97	373.97	437.97
Available Capacity without new facilities	26	4.03	-18.97	-49.97	-93.97	-157.97

Notes:

- American River diversion is limited 100 mgd during Hodge flow conditions.
- Sacramento WTP peak day supply is based on the nominal capacity of the plant.
- Based on a constant 2.2 percent annual growth rate between 2004 and 2030 demand.
- Reduced by 20 mgd during Hodge Flow or Conference Year when sales to Sacramento Suburban Water District are not required. A new Sacramento River diversion and WTP potentially could be used to make up this reduction during Hodge Flow or Conference Year conditions (not reflected in "Available Capacity without new facilities").

Source: PBS&J, August 2008.

TABLE 5.8-10

MAXIMUM DAY SURFACE WATER SUPPLY CAPACITY AND DEMAND COMPARISON DURING BELOW-HODGE FLOW CONDITIONS (MGD) EXISTING AND NEW FACILITIES

	2005	2010	2015	2020	2025	2030
American River ¹	100	100	100	100	100	100
Sacramento River ²	160	160	160	160	160	160
New Sacramento River WTP	~	~	~	145	145	145
TOTAL SURFACE WATER SUPPLY	260	260	260	405	405	405
Groundwater Supply	20	20	20	20	20	20
TOTAL WATER SUPPLIES	280	280	280	425	425	425
City Demand and Wholesale/Wheeling Demands ³	254	271	294	325	369	433
<i>Project Demand</i>	~	4.97	4.97	4.97	4.97	4.97
TOTAL WATER DEMAND⁴	254	275.97	298.97	329.97	373.97	437.97
Available Capacity with new facilities	26	4.03	-18.97	95.03	51.03	-12.97

Notes:

- American River diversion is limited 100 mgd during Hodge flow conditions.
- Sacramento WTP peak day supply is based on the nominal capacity of the plant.
- Based on a constant 2.2 percent annual growth rate between 2004 and 2030 demand.
- Reduced by 20 mgd during Hodge Flow or Conference Year when sales to Sacramento Suburban Water District are not required. A new Sacramento River diversion and WTP potentially could be used to make up this reduction during Hodge Flow or Conference Year conditions (not reflected in "Available Capacity without new facilities").

Source: PBS&J, August 2008.

The City has planned for system improvements in the 2005 Water Distribution System Master Plan that would accommodate the City's peak hour demands. These improvements include the construction of the Southeast Sacramento Transmission Main (South Cross Tie) and the Cosumnes Reservoir and Pump Station. The Southeast Sacramento Transmission Main includes approximately

one-half mile of 66-inch pipe and approximately 3.5 miles of 54-inch pipe extending from the FWTP to the Florin Booster Pump Station. The Cosumnes Reservoir and Pump Station provide storage for approximately 4 million gallons and boosts pressure during high demand periods. The Cosumnes Reservoir and Pump Station would likely be constructed on Cosumnes River College Campus property. These improvements are included in the City's capital improvement program and are partially funded. Each of the projects would be subject to environmental review as they move forward. The projects would respond to the demand generated by continued buildout of the city, including the proposed project.

As noted previously, 1.5 acres of land within the project site would be dedicated to the City for future Laguna Reservoir and Pump Station. This facility is not required for build-out of the project, but would be needed to meet city-wide water storage requirements.

Improvements to the City's water supply and distribution system in a manner consistent with the City's capital improvement process would continue to be made in response to increase demand generated by development. With the implementation of the anticipated improvements to the system as set forth in the capital improvement program, the water supply and distribution system would be adequate to meet cumulative demands, and the impact would be ***less than significant***.

Mitigation Measure

None required.

DRY UTILITIES

This section describes the existing distribution system for electricity and natural gas in the project area. This section also estimates energy consumption for the proposed project and describes service delivery effects of projected demands. Existing plans and policies relevant to electricity and natural gas are identified. This section also addresses Appendix F of the CEQA Guidelines, which states that potentially significant energy implications of a project should be considered in an EIR, with particular emphasis on measures to avoid or reduce the inefficient, wasteful, or unnecessary consumption of energy.

ENVIRONMENTAL SETTING

Electricity

Regional Energy Supplies

In the 2005 Energy Policy Report,²³ the California Energy Commission (CEC) indicated that as the state's demand for electricity increases, California could face severe shortages in the next few years. Of particular concern are the potential impacts of higher-than-average summer temperatures, which can drastically increase the state's electricity demand, as well as shortages resulting from decreased hydroelectric generation in lower-than-average precipitation years. Either of these situations could cause dangerously low reserve margins and potential supply disruptions, particularly in southern California. Reserve margins could also be affected by the retirement of aging natural gas-fired power plants, which remain critical components of California's generation fleet, despite strong policy directives to diversify the state's electricity supplies.

The 2005 Energy Report assessment of electricity supply and demand concludes that maintaining adequate electricity reserves will be difficult over the next few years. The state has made some progress toward resource adequacy for investor-owned utilities by requiring them to maintain year-round 15 to 17 percent reserve margins. Jurisdictional authority over other load-serving entities is less clear. Until recently, there was no formal mechanism to ensure resource adequacy for publicly owned utilities, which provide up to 30 percent of the state's electricity. In September 2005, the Legislature passed and the Governor signed AB 380 (Nunez), Chapter 367, Statutes of 2005, which extends jurisdiction over independent load serving entities and requires publicly owned utilities to report their respective supply circumstances to the CEC so that their resource adequacy progress can be accurately assessed.

The lack of long-term power contracts has stalled development and construction of more than 7,000 megawatts (MW) of permitted plants and sharply curtailed the number of new permit applications. California's dependence on natural gas to generate electricity is also increasing as utilities continue to purchase generation from the state's aging fleet of natural gas-fired power plants under short-term contracts.

23 California Energy Commission, *2005 Integrated Energy Policy Report*, 2005.

A significant percentage of California's electricity supply comes from the in-state Diablo Canyon and San Onofre nuclear power plants. Operators at these nuclear plants face many issues involving the transportation and disposal of spent fuel, upcoming extensions of their operating licenses, and major capital expenditures to replace aging steam generators. New nuclear power plant construction in California was suspended in 1976 pending determination by the CEC that a high-level federal nuclear waste disposal repository would be approved and built. The CEC reaffirms its 1978 finding that a high-level nuclear waste repository has been neither approved nor built.

The CEC strongly supports the following nuclear recommendations:

- The federal government should return some portion of the funds paid by California ratepayers for a permanent national repository for nuclear waste in order to pay for interim storage of waste at California reactor sites.
- The Legislature should develop a suitable state framework to review the costs and benefits of nuclear power plant license extensions.

Reducing the demand for energy is the most effective way to conserve energy. Reducing demand also reduces the likelihood of supply shortages that can affect reliability. While California will continue to depend upon petroleum fuels and natural gas to meet its energy needs for the foreseeable future, the use of various energy efficiency measures and renewable resources are top priorities in California's electricity policy.

Simultaneously, the state needs to shore up its electricity supplies, such as generation from aging power plants, to maintain adequate reserve margins for peak demand periods and provide regional and local reliability services. In addition, California must maximize its ability to share resources, both inside the state between the investor-owned utilities (IOUs) and adjoining municipal utilities and with out-of-state suppliers.

California continues to be the national leader in efficiency. While energy use per person in the rest of the nation has increased by 45 percent over the last 30 years, California's per capita use has remained relatively flat as a result of the state's energy efficiency measures. In the 2003 Energy Report, the CEC concluded that California could save an additional 30,000 gigawatt hours (GWh) of energy from energy efficiency programs over the coming decade. In 2004, the California Public Utilities Commission (CPUC) established aggressive energy savings goals and authorized a significant increase in energy efficiency funding. Meeting these goals will reduce the utilities' need for additional electricity supplies between 2004 and 2013 by more than half. The recent passage of SB 1037 (Kehoe) Chapter 366, Statutes of 2005, further reinforces the state's energy efficiency policies by requiring all utilities to meet their unmet resource needs first with energy efficiency and demand reduction resources that are cost-effective, reliable, and feasible.

Demand response programs are the most promising and cost-effective options for reducing peak demand on California's electricity system. The CPUC is currently considering proposals from the investor-owned utilities to purchase and install advanced meters for all their customers. New

metering technology is the primary platform for future voluntary and mandatory demand response policies.

Lastly, California's energy infrastructure may be unable to meet the state's energy delivery needs in the near future. The most critical infrastructure issue is the state's electricity transmission system, which has become progressively stressed in recent years. The systematic under-investment in transmission infrastructure is reducing system reliability and increasing operational costs.

Local Energy Supplies and Programs

Electrical service is provided to the project area by the Sacramento Municipal Utilities District (SMUD), which is the entity responsible for the generation, transmission, and distribution of electrical power to its 900 square mile service area. The service area includes most of Sacramento County and a small portion of Placer County. SMUD is a publicly-owned utility governed by a board of seven directors that make policy decisions and appoint the general manager, the individual responsible for the District's operations.

SMUD obtains its electricity from a variety of sources, including hydro-generation, co-generation plants, advanced and renewable technologies (such as wind, solar, and biomass/landfill gas power) and power purchased on the wholesale market.²⁴

SMUD offers a variety of programs that serve to preserve natural resources and reduce pollution. Through SMUD's Greenergy program, customers can choose to buy energy from natural resources of energy, such as the sun, wind, or methane gas. SMUD also offers incentives to its residential customers for purchasing and installing photo-voltaic solar panels. With regard to wind energy, the recent addition of eight wind turbines to SMUD's wind farm in Solano County produces up to 39 megawatts of power. SMUD owns additional land in the area with room for expansion to 200 megawatts pending approval by the Board of Directors.

With regard to hydroelectric power, SMUD's UARP, consisting of 11 reservoirs and eight powerhouses, generates enough electricity to meet about 20 percent of SMUD's customer demand. In a normal water year, the UARP provides roughly 1.8 billion kilowatt-hours of electricity, which is enough to power 180,000 homes. The UARP is able to provide operational flexibility, system reliability, and economical power.

The CEC and SMUD are also working together on research, development, and demonstration projects for renewable power generation under the Public Interest Energy Research (PIER) program. The program consists of a number of projects, most of which are developing new technologies that use the sun, wind, and biomass to generate electricity. Each project is helping to: (1) reduce California's dependency on non-renewable energy sources; (2) develop technologies and products that will create broad new renewable energy sources for California and the West; (3) develop resources that will allow SMUD and other electric utilities to increase their use of renewable generation; (4) provide technologies to help SMUD reduce its peak demand for electricity; and

24 Sacramento Municipal Utilities District, <www.smud.org/about/index.html>, accessed June 28, 2006.

(5) make Sacramento a center for the development, testing, and implementation of new renewable generating technologies.

Existing Facilities

SMUD operates 69-kV electrical sub-transmission lines that bisect the project site along the proposed extension of Cosumnes River Boulevard.

Natural Gas

Regional Gas Supplies

The 2003 Energy Report recommended that the state reduce natural gas demand by increasing funding for natural gas efficiency programs. California has made progress in this area. The recently enacted SB 1037 also requires gas utilities to first meet their unmet resource needs with all available energy efficiency and demand reduction resources that are cost-effective, reliable, and feasible.

Another way to increase natural gas efficiency is to increase the role of combined heat and power facilities as a way to meet California's rising electricity supply needs.

In the natural gas sector, California has made infrastructure improvements that will increase the reliability and operational flexibility of the natural gas system, but must still address the need for additional pipeline capacity to meet peak demand.

California has improved its natural gas infrastructure by increasing intrastate pipeline capacity and in-state storage. Pipeline expansions completed over the last four years have also helped ensure that the state can access conventional natural gas supply basins outside of the state.

Existing infrastructure is both maintained and retained, and the need for additional pipeline capacity to meet customer demand on the coldest days in winter or when there are interstate pipeline disruptions must be continued.

Local Gas Supplies

Gas service is provided to the project site by Pacific Gas and Electric (PG&E). PG&E is responsible for the transmission and distribution of gas to much of northern and central California, serving approximately 15 million people throughout a 70,000 square mile service area from Eureka to Bakersfield. Gas is derived from sources in California, Canada, the Permian, San Juan, and Anadarko Basins in the southwestern states, and from the Rocky Mountain area.

Existing Facilities

PG&E owns and operates a 21-inch force gas line and gas transmission facilities located along the eastern edge of I-5 in the southeastern portion of the project site and continuing in an easterly direction along the southern edge of the project site.

Regulatory Context

Federal

The Federal Energy Regulatory Commission regulates the transmission and sale of electricity in interstate commerce, licensing of hydroelectric projects, and oversight of related environmental matters.

State

The CPUC sets forth specific rules that relate to the design, installation, and management of California's public utilities, including electric, natural gas, water and transportation, and telecommunications. CPUC Decision #77187 and #78500 state that utilities must be underground if the developable lots are less than three acres in size. CPUC Decision #81620 states that lots over three acres (large lot subdivision) are not required to underground utilities. A formal waiver from the CPUC is required for an exemption from complying with these decisions.

CPUC Decision 95-08-038 governs the planning and construction of new transmission facilities, distribution facilities, and substations. The Decision requires permits for the construction of certain power line facilities or substations if the voltages would exceed 50 kilovolts or the substation would require the acquisition of land or an increase in voltage rating above 50 kilovolts. Distribution lines and substations with voltages less than 50 kilovolts do not need to comply with this Decision; however, the utility must obtain any applicable local permits required for the construction and operation of these projects.

Title 20 and Title 24, California Code of Regulations (CCR)

New buildings constructed in California must comply with the standards contained in Title 20, Energy Building Regulations, and Title 24, Energy Conservation Standards, of the CCR. Title 24 (AB 970) also contains energy efficiency standards for residential and nonresidential buildings based on a State mandate to reduce California's energy demand.

Warren-Alquist Energy Resources Conservation and Development Act

The State Energy Commission regulates energy resources by encouraging and coordinating research into energy supply and demand problems to reduce the rate of growth of energy consumption (Warren-Alquist Energy Resources Conservation and Development Act Government Code section 25000 *et seq.*).

Local

City of Sacramento 1988 General Plan

The City of Sacramento 1988 General Plan is currently being updated and the City anticipates adopting a new General Plan by the end of 2008. Below is a list of goals and policies that relate to dry utilities from the 1988 General Plan. Because the Sacramento 2030 General Plan will not be completed prior to the completion of this document, the 1988 General Plan policies are being analyzed in lieu of the new policies. While the new policies will be different from the 1988 policies, it

is anticipated that the policies listed below will not become obsolete as they are updated through the 2030 General Plan process.

Goal A Continue to improve and provide communication and utility services to all areas of the City.

Policies

1. Continue to work closely with utility companies on long-range planning for newly developing areas.
2. Support and encourage the utility companies to place utilities underground in new development areas.

City of Sacramento 2030 General Plan

The City anticipates adopting its new 2030 General Plan by the end of 2008. Therefore, applicable policies from the draft 2030 General Plan are included below.

UTILITIES

Goal U 6.1 Adequate Level of Service. Provide for the energy needs of the city and decrease dependence on non-renewable energy sources through energy conservation, efficiency, and renewable resource strategies.

Policies

- U 6.1.1 **Electricity and Natural Gas Services.** The City shall continue to work closely with local utility providers to ensure that adequate electricity and natural gas services are available for existing and newly developing areas.
- U 6.1.2 **Peak Electric Load Reduction of City Facilities.** The City shall reduce the peak electric load for City facilities by 10 percent by 2015 compared to the baseline year of 2004, through energy efficiency, shifting the timing of energy demands, and conservation measures.
- U 6.1.5 **Energy Consumption Per Capita.** The City shall encourage residents and businesses to consume 25 percent less energy by 2030 compared to the baseline year of 2005.
- U 6.1.6 **Renewable Energy.** The City shall encourage the installation and construction of renewable energy systems and facilities such as wind, solar, hydropower, geothermal, and biomass facilities.
- U 6.1.7 **Solar Access.** The City shall ensure, to the extent feasible, that sites, subdivisions, landscaping, and buildings are configured and designed to maximize and protect solar access.
- U 6.1.8 **Other Energy Generation Systems.** The City shall promote the use of locally-shared solar, wind, and other energy generation systems as part of new planned developments.
- U 6.1.13 **Energy Efficiency Incentives.** The City shall develop incentives to encourage the use of energy efficient vehicles, equipment, and lighting.
- U 6.1.14 **Sustainable Development and Resource Conservation Education.** The City shall work with appropriate agencies to develop educational materials and activities for residents and developers regarding the objectives and techniques of sustainable development and resource conservation.

Airport/Meadowview Community Plan

As part of the Sacramento 2030 General Plan process, the Airport/Meadowview Community Plan will also be updated. Because the Sacramento 2030 General Plan will not be completed prior to the completion of this document (the anticipated completion date is late 2008 or early 2009), the 1988 General Plan policies are being analyzed in lieu of the new policies. The following goals, objectives,

and policies from the Public Facilities and Services chapter of the Airport/Meadowview Community Plan relate to dry utilities.

Goals

1. **Ensure that the level of City services in the Airport Meadowview community meet City-wide standards.**
2. **Ensure that future physical improvements can accommodate projected growth and can meet City standards for health, safety, and attractiveness.**

Policies

1. Ensure that necessary public facilities and services are provided to meet projected demands.
3. New Development should comply with existing City energy conservation ordinances.

South Area Community Plan

The City anticipates adopting the South Area Community Plan as part of the 2030 General Plan. The following policies are relevant to natural gas utilities in the Community Plan area.

SA.U 1.4 **Transmission Line Conflicts in Delta Shores.** The City shall reevaluate, study, and create guidelines to mitigate any potential development conflict with high voltage transmission lines in the Delta Shores project area.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

To determine whether implementation of the proposed project would result in impacts on electricity and natural gas supplies, and the ability of the utility companies to provide electricity and natural gas service to the project site was assessed through conversations with SMUD and PG&E personnel. The availability of supply relative to the project's demand is evaluated in this section. In addition, the need for new infrastructure or expansion of existing energy infrastructure to serve the proposed project beyond what is already anticipated is also analyzed in this section.

Standards of Significance

For the purposes of this EIR, impacts on natural gas and electrical services are considered significant if the proposed project would:

- require or result in the construction of new or the expansion of existing facilities, the construction of which causes significant environmental effects.

Project-Specific Impacts and Mitigation Measures

5.8-7 The proposed project would increase the demand for electricity that could require the construction of new electrical production or transmission facilities.

The proposed project would increase the use of electricity at the project site, to light, heat, and air condition the new buildings, parking areas, streets, sidewalks, trails, and residential units. SMUD operates 69-kV electrical sub-transmission lines that bisect the project site along the proposed

extension of Cosumnes River Boulevard. New electrical lines to serve the project would be installed underground in compliance with existing legislation for new development.

SMUD has indicated that there are no constraints to obtaining a reliable energy source to serve development in the project site.²⁵ In addition, the electricity demands created by the proposed project are not substantial in relation to the total amount of energy supplied by SMUD in its service area, including the city of Sacramento, Sacramento County, and parts of Placer County. In 2003, 9,919,728 megawatt-hours of electricity usage was sold and only 36 MW of electricity per year is anticipated for use by the proposed project.²⁶ More specific projections of actual energy demand would be developed during the detailed design phase of the project. As part of the City's development review process, SMUD is provided sufficient opportunity to provide input on the project. SMUD must provide a detailed review of their capability to provide an adequate level of service to the project site. This would ensure an adequate level of service is provided.

Implementation of Title 20 and 24 of the CCR would reduce impacts associated with an increased demand for electricity by implementing energy efficient standards for residential and non-residential buildings. These could include, but are not necessarily limited to, building integrated solar electric features, thermal energy storage systems, and advanced energy saving architectural features in the buildings themselves. According to the PUD Guidelines prepared for the project (see Appendix C), residential units would be encouraged to follow the energy performance standards set forth by the State Energy Standards Model. This would include following standards for energy conservation included in the California Energy Star New Homes Program (CESNHP) and the California Home Energy Efficiency Rating System (CHEER). Building designs would be encouraged to include passive solar and cooling concepts, solar panels, and energy efficient windows, roofs, insulation, and HVAC systems. In addition, energy efficient appliances and water conservation features would be considered in future residential development.

In addition, implementation of the Warren-Alquist Energy Resources Conservation and Development Act would also coordinate research and development into energy supply and demand problems to reduce the rate of growth of energy consumption. There is also adequate electrical supply, and new electrical facilities would be constructed as part of the proposed project.

The physical environmental impacts resulting from construction of the proposed project are comprehensively analyzed in the appropriate technical sections of this EIR. Further, as required by law, all utility connections would be constructed in accordance with all applicable Uniform Codes, City Ordinances, and Public Works standards to ensure an adequately sized and properly constructed electrical transmission and conveyance system. Implementation and extension of utility infrastructure would be designed and constructed prior to occupancy and in a manner that would minimize the potential for utility disruption. Because there is adequate electrical supply and new electrical facilities would be constructed as part of the proposed project prior to occupancy, the impacts would be considered ***less than significant***.

25 Gary Shimizu, P.E., SMUD Distribution Services, personal communication, July 25, 2007.

26 SMUD, About SMUD, More Facts and Figures, for year ending December 31, 2003, Updated June 2004, <www.smud.org>, accessed December 12, 2006.

Mitigation Measure

None required.

5.8-8 The proposed project would increase the demand for natural gas that could require the construction of new gas production or transmission facilities.

The proposed project would increase the demand for natural gas use at the project site for residential, commercial, and office uses. PG&E owns and operates a 21-inch gas line and gas transmission facilities located along the eastern edge of I-5 in the southeastern portion of the project site and continuing in an easterly direction along the southern edge of the project site. As part of the proposed project, the existing 21-inch force gas line running along the eastern edge of I-5 would be relocated to the west side of the freeway and would be designed to cross the freeway at the southern edge of the project site. In addition to facilitating project development, this relocation is necessary to accommodate the proposed Cosumnes River Boulevard Interchange and Extension project. PG&E has indicated that an adequate supply of natural gas is currently available to serve the proposed project, and that the natural gas level of service provided to the surrounding area would not be impaired by the proposed project.²⁷ In addition, the natural gas demands created by the project are not substantial in relation to the total amount of energy supplied by PG&E in its northern and central California service area. In 2005, 844,068 million cubic feet (8.7×10^{14} Therms) of natural gas was recorded.²⁸

As discussed in Impact 5.8-7 above, all new buildings are required to conform to the energy conservation standards specified in the CCR Titles 20 and 24. Further, the project proposes a variety of additional energy conservation measures to decrease the amount of overall energy consumed by the project (see the discussion under Impact 5.8-7).

The project would require construction of new natural gas lines on the project site to serve new development. Natural gas lines to serve the project site would be located underground and would be constructed in accordance with PG&E's policies and extension rules on file with the CPUC at the time contractual agreements are made. The natural gas demand projected for the proposed project would not exceed available or planned supply to natural gas resources as a result of the proposed project and natural gas supply facilities would be constructed as part of the proposed project.

The physical environmental impacts resulting from construction of the proposed project are comprehensively analyzed in the appropriate technical sections of this EIR. Further, as required by law, all utility connections would be constructed in accordance with all applicable Uniform Codes, City Ordinances, and Public Works standards to ensure an adequately sized and properly constructed electrical transmission and conveyance system. Implementation and extension of utility infrastructure would be constructed prior to occupancy and in a manner that would minimize the potential for utility disruption. Because the natural gas demand would not exceed available supply to

27 Demetrius Williams, Project Manager, PG&E, personal communication, August 28, 2007.

28 PG&E, Our Business, Company Overview, <www.pgecorp.com>, accessed December 12, 2006.

serve the proposed project, and because infrastructure would be constructed as part of the proposed project prior to occupancy, impacts would be considered *less than significant*.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

The cumulative context for electricity is the SMUD service area. The cumulative context for natural gas is the city of Sacramento service area of PG&E.

5.8-9 The proposed project, in combination with other development in the City of Sacramento, could exceed the electrical or natural gas supply and transmission capabilities.

Currently there are multiple projects being considered for development in the city of Sacramento. All of these projects would create a significant electricity and natural gas demand above what current utility providers are experiencing. All new projects constructed in California are required to conform to the energy conservation standards specified in Titles 20 and 24 of the CCR, and many individual projects include other energy conservation measures in order to achieve green building status, either officially (as recognized by the Leadership in Energy and Environmental Design [LEED] Green Building Rating System) or unofficially (in order recognize sustainable building principles).

SMUD is a utility provider that obtains its electricity from a variety of sources, including hydro-generation, co-generation plants, advanced and renewable technologies (such as wind, solar, biomass/landfill gas power), and power purchased on the wholesale market. SMUD has stated that electricity would be available to supply energy to the City at full implementation of the City's soon to be adopted 2030 General Plan over the next 25 years, and has also stated that sufficient energy could be provided to serve the proposed project. Because SMUD is able to meet all future projected demands, the cumulative impact related to the supply of electricity and the need for additional or expanded facilities is less than significant, and the proposed project's contribution to the overall increase in demand would not be cumulatively considerable.

With regard to natural gas, the proposed project would also result in permanent and continued use of this resource. Because PG&E's demand projections are continuously updated, and PG&E's system has ample capacity to ensure continued levels of service to all customers within the region, PG&E has stated that it can supply natural gas to the proposed project without jeopardizing other existing or projected service commitments. The cumulative impact related to the supply of natural gas and the need for additional or expanded facilities is less than significant, and the proposed project's contribution to demand would not be cumulatively considerable.

Future development in the region would increase residential, commercial, and office needs for electricity and natural gas. Development in previously undeveloped areas would require the extension of existing lines, and new transmission facilities and substations would be needed. The environmental impacts associated with the installation of new facilities would be analyzed by each

development under separate environmental review as the utilities are extended. Although specific design and construction plans for cumulative projects in the region are unknown at this time, SMUD and PG&E would install new distribution facilities, as needed, to serve the buildout of the proposed project, according to CPUC rules. The same is true for any additional development within the City of Sacramento or in SMUD's service area. As part of the development review process, PG&E and SMUD receive sufficient opportunity to provide input on proposed projects to ensure their capability of providing an adequate level of service to the project site. The cumulative impact related to the supply of electricity and the need for additional or expanded facilities is less than significant, and the proposed project's contribution to demand would not be cumulatively considerable.

Because there is adequate electrical and natural gas supply and because new electrical and natural gas facilities would be constructed as part of the proposed project prior to occupancy the project's contribution to electricity and natural gas supply and transmission capacities would be less than considerable. This is a ***less-than-significant cumulative impact***.

Mitigation Measure

None required

5.9 TRANSPORTATION AND CIRCULATION

5.9 TRANSPORTATION AND CIRCULATION

INTRODUCTION

This section describes the potential impacts on the City's transportation system near the proposed project. The project site is bounded by the existing Meadowview neighborhood to the north, the Sacramento Regional Wastewater Treatment Plant to the south, the Stone-Boswell property and the Sacramento Job Corps Center to the east, and Freeport Boulevard to the west. Development of the project site was identified for urban uses in 1980 as part of a Planned Unit Development ("1980 PUD"). However, the proposed project land uses differ from those approved in the 1980 PUD. The primary access to the project site would be provided by an extension of Cosumnes River Boulevard from Franklin Boulevard to Freeport Boulevard.

The traffic impact analysis examined the roadway, transit, and bicycle/pedestrian components of the overall transportation system under near-term, baseline and cumulative conditions both with and without development of the proposed project. The Near-Term Plus Project scenario provides an evaluation of the development potential for the project, which assumes 490 residential units are constructed in the portion of the project west of Interstate 5 (I-5). The Baseline Plus Project assumes development of the entire project, in addition to approved and proposed developments in the study area. The traffic analysis assumes buildout of a maximum of 5,222 residential units compared to the 5,092 that the project is currently proposing. The analysis of more units provides a more conservative approach to determining traffic impacts. The Cumulative No Project scenario assumes no development on either the project or the adjacent proposed Stone-Boswell project.¹ The Cumulative Plus Project scenario assumes development of both the Delta Shores project and adjacent Stone-Boswell residential development project. Significant impacts, as defined by CEQA, were identified for each component and, as necessary, mitigation measures were identified to offset those impacts.

The California Department of Transportation (Caltrans) submitted comments on the Notice of Preparation (see Appendix B) that included requests for analysis and consideration of specific mitigation measures of State Route (SR) 99 freeway segments, the SR 99/Mack Road interchange, and the SR 99/ Cosumnes River Boulevard interchange. Analysis of these facilities is included in this document.

Information used to prepare this section includes the regional travel model provided by the Sacramento Area Council of Governments (SACOG), a list of funded transportation projects as documented in the SACOG Metropolitan Transportation Plan, proposed land use and circulation network information provided by the project applicant, freeway ramp and intersection traffic count data collected for Fehr & Peers, and freeway traffic count data provided by Caltrans. Technical

1 Since preparation of this analysis the project applicant for the Stone Boswell project has withdrawn their development application from the City. However, the City anticipates future development of residential and retail/commercial uses on this site. Therefore, the Stone Boswell development assumptions are included in the traffic analysis.

calculations and detailed information regarding trip generation estimates are contained in a separately bound report (*Delta Shores Project Traffic Impact Study Technical Appendix*, Fehr & Peers).

ENVIRONMENTAL SETTING

The roadway, transit, bicycle, and pedestrian components of the transportation system are described below. Figure 5.9-1 displays the roadways within the study area.

Roadway System

The roadway network in the vicinity of the proposed project site is described below.

- I-5 is a six-lane freeway within the study area and serves as the commute corridor between Downtown Sacramento and the South Sacramento community as well as the City of Elk Grove. South of Laguna Boulevard, I-5 becomes a four-lane freeway. For regional travelers, I-5 provides the most direct long distance north-south route through the state of California.
- SR 99 is a six-lane freeway (i.e., two mixed flow lanes and one carpool lane in each direction) within the study area and serves as the commute corridor between the South Sacramento Community and Downtown Sacramento. North of Florin Road, SR 99 becomes an eight-lane freeway (i.e., three mixed flow lanes and one carpool lane in each direction) as far north to the junction of US 50/51. Caltrans recently completed the SR 99 Auxiliary Lane project, which created auxiliary lanes on SR 99 between Mack Road and Florin Road by restriping the mainline lanes to 11 feet and using a portion of the shoulders.
- Meadowview Road is an east-west roadway between Freeport Boulevard (SR 160) and Franklin Boulevard. West of Freeport Boulevard, Meadowview Road becomes Pocket Road. East of Franklin Road, Meadowview Road becomes Mack Road. Meadowview Road is a four-lane roadway within the study area and serves a mix of residential and commercial uses.
- Mack Road is an east-west roadway between Franklin Boulevard and Stockton Boulevard. East of Stockton Boulevard, Mack Road becomes Elsie Avenue. Mack Road is a four-lane roadway within the study area and serves a mix of residential, commercial, and medical uses.
- Pocket Road is an east-west roadway from Freeport Boulevard west into the Pocket Area neighborhood. Pocket Road is a four-lane roadway. Pocket Road serves a mix of residential and commercial uses.
- Freeport Boulevard (SR 160) is a north-south roadway, forming the western boundary of the project, that runs from south of the project study area north to Broadway. Freeport Boulevard is a two-lane roadway in the study area, widening to the north to four lanes just south of Pocket Road-Meadowview Road. Freeport Boulevard is bounded primarily by agricultural uses in the project study area. To the north, it serves a mix of residential and commercial uses.

- Franklin Boulevard is a north-south roadway east of the project site. It runs from south of Elk Grove Boulevard north to Broadway. Franklin Road is a four-lane roadway in the study area. It serves a mix of residential and commercial uses.
- 24th Street is a north-south roadway that runs from the project site north to Sutterville Road, where its northern terminus is located adjacent to Sacramento City College. 24th Street is a wide two-lane street from its southern terminus to Meadowview Road, where it widens to a four-lane street. It is bounded primarily by residential uses.
- Manorside Drive is a north-south roadway that runs from the project site north to Meadowview Road. It is a two-lane street that serves residential uses.

Study Intersections

The 35 study existing and planned intersections listed below were selected in coordination with the City of Sacramento staff as locations most likely to be impacted by the proposed project.

1. Pocket Road/I-5 southbound ramps
2. Pocket Road/I-5 northbound ramps
3. Meadowview Road/Freeport Boulevard
4. Meadowview Road/Manorside Drive
5. Meadowview Road/24th Street
6. Meadowview Road/Detroit Boulevard
7. Mack Road/Franklin Boulevard
8. Cosumnes River Boulevard/Franklin Boulevard
9. Freeport Boulevard/Stonecrest Avenue (future Cosumnes River Boulevard)
10. Cosumnes River Boulevard/I-5 southbound ramps (future)
11. Cosumnes River Boulevard/I-5 northbound ramps (future)
12. Cosumnes River Boulevard/Retail Access (future)
13. Cosumnes River Boulevard/Delta Shores Circle (future)
14. Cosumnes River Boulevard/Street A (future)
15. Cosumnes River Boulevard/Street B (town center access) (future)
16. Cosumnes River Boulevard/24th Street (future)
17. Cosumnes River Boulevard/D Drive (future)
18. Cosumnes River Boulevard/E Drive (future)
19. Delta Shores Circle/Street D north (future)
20. Delta Shores Circle/Street C (future)
21. Delta Shores Circle/Street A – Manorside Drive (future)
22. Delta Shores Circle/24th Street (future)
23. 24th Street/Street C (future)

24. Street C/Street A (future)
25. Street C/Street B (future)
26. Street D/Street E (future)
27. Street E/Street G (future)
28. Delta Shore Circle/Street D south (future)
29. A Drive/D Drive (future)
30. A Drive/E Drive (future)
31. Detroit Boulevard/A Drive (future)
32. Mack Road/SR 99 SB Ramp/Alta Valley
33. Cosumnes River Boulevard/SR 99 southbound ramps
34. Cosumnes River Boulevard/SR 99 northbound ramps
35. Cosumnes River Boulevard/Delta Shores West Access

Study Freeway Facilities

AM and PM peak hour mainline traffic volumes for I-5 and SR 99 were obtained from Caltrans. The peak hour mainline traffic volumes on I-5 were obtained from the ongoing I-5 High Occupancy Vehicle (HOV) Lanes project in South Sacramento being evaluated for Caltrans. The ramp volumes at the intersections were based on traffic counts collected at the ramp junction intersections (June 2007). The freeway facilities listed below were analyzed as part of this study.

1. I-5 southbound off-ramp to Pocket Road
2. I-5 southbound loop on-ramp from Pocket Road
3. I-5 southbound slip on-ramp from Pocket Road
4. I-5 northbound off-ramp to Pocket Road/Meadowview Road
5. I-5 northbound loop on-ramp from Pocket Road/Meadowview Road
6. I-5 northbound slip on-ramp from Pocket Road/Meadowview Road
7. I-5 southbound off-ramp to Cosumnes River Boulevard (future)
8. I-5 southbound loop on-ramp from Cosumnes River Boulevard (future)
9. I-5 southbound slip on-ramp from Cosumnes River Boulevard (future)
10. I-5 northbound off-ramp to Cosumnes River Boulevard (future)
11. I-5 northbound loop on-ramp from Cosumnes River Boulevard (future)
12. I-5 northbound slip on-ramp from Cosumnes River Boulevard (future)
13. SR 99 southbound off-ramp to Mack Road
14. SR 99 northbound on-ramp from eastbound Mack Road (loop on-ramp)
15. SR 99 southbound on-ramp from eastbound Cosumnes River Boulevard (slip on-ramp)
16. SR 99 north of Mack Road
17. SR 99 south of Cosumnes River Boulevard

18. I-5 north of Laguna Boulevard
19. I-5 north of Meadowview Road
20. I-5 north of Cosumnes River Boulevard (future)

Daily Roadway Volumes

Daily (24-hour) hose counts were collected for roadway segments in the study area on January 31, 2007. Table 5.9-1 presents the existing average daily traffic volumes for the selected roadway segments.

Roadway	Segment	ADT
Freeport Boulevard	South of Meadowview Road	5,400
Manorside Drive	South of Meadowview Road	2,400
24 th Street	South of Meadowview Road	7,800
Detroit Boulevard	South of Meadowview Road	5,400
Note: Traffic Counts collected on January 31, 2007. Source: Fehr & Peers, 2007.		

Existing daily traffic volumes are provided for informational and planning purposes. Peak hour traffic volumes were determined under Baseline and Cumulative conditions both with and without development of the proposed project.

Traffic Operations

The existing peak hour traffic operations for the study intersections and freeway facilities are presented below.

Study Intersections

The traffic volumes displayed in Figures 5.9-2A and 5.9-2B were used to determine the existing operations at each study intersection. Signal timings were collected from the City of Sacramento for the signalized study intersections. Table 5.9-2 summarizes the traffic operations during the AM and PM peak hours.

As shown in Table 5.9-2, all of the study intersections operate at LOS C or better during the peak hours under existing conditions except the following locations:

- Meadowview Road/24th Street operates at LOS D during the PM peak hour.
- Mack Road/Franklin Boulevard operates at LOS D during the PM peak hour.
- Franklin Boulevard/Cosumnes River Boulevard operates at LOS D during the AM peak hour.

Intersection	Control	AM Peak		PM Peak	
		LOS ¹	Delay ²	LOS ¹	Delay ²
1. Pocket Road/I-5 SB Ramps	Signalized	B	13.5	B	17.8
2. Meadowview Road/I-5 NB Ramps	Signalized	B	17.2	B	16.5
3. Meadowview Road/Freeport Blvd.	Signalized	C	28.0	C	33.4
4. Meadowview Road/Manorside Drive	TWSC ³	A	<10	A	<10
		C	24.1	C	20.9
5. Meadowview Road/24 th Street	Signalized	C	30.5	D	39.4
6. Meadowview Road/Detroit Boulevard	Signalized	C	20.7	C	28.2
7. Mack Road/Franklin Boulevard	Signalized	C	31.4	D	52.4
8. Franklin Boulevard/Cosumnes River Blvd.	Signalized	D	38.4	C	26.0
9. Freeport Boulevard/Stonecrest Avenue	TWSC ³	A	<10	A	<10
		B	10.1	A	<10
32. Mack Road/SR 99 SB Ramp	Signalized	A	9.5	C	21.8
33. Cosumnes River Blvd./SR 99 SB Ramps	Signalized	C	21.1	C	22.4
34. Cosumnes River Blvd./SR 99 NB Ramps	Signalized	B	11.3	B	11.8

Notes:
1. LOS = level of service
2. For signalized intersections, average intersection delay is reported in seconds per vehicle. For side-street stop intersections, the delay and LOS for the worse individual movement is shown below the average intersection delay and LOS.
3. TWSC = Two-way stop control.
Shaded areas indicated LOS D, E, or F operations based on average delay.
Source: Fehr & Peers, 2007.

The peak hour traffic volume warrant was evaluated for each unsignalized study intersection. The following intersection currently meets the peak hour volume warrant for the installation of a traffic signal.

- Meadowview Road/Manorside Drive meets the peak hour signal warrant under existing conditions.

Study Freeway Facilities

The traffic volumes displayed in Figure 5.9-3 were used to determine the existing operations at the study freeway facilities. Tables 5.9-3 and 5.9-4 summarize the traffic operations for freeway ramp junctions and mainline segments, respectively, during the AM and PM peak hours. Table 5.9-5 summarizes the existing conditions on the freeway mainline.

As shown in Tables 5.9-4 and 5.9-5, all the study freeway facilities currently operate at LOS E or better during the AM and PM peak hours except for the following ramp junction and mainline segments, which operate at LOS F as noted.

- I-5/Pocket Road Interchange: Northbound Slip On-Ramp operates at LOS F during the AM peak hour
- I-5/Pocket Road Interchange: Southbound Off-Ramp operates at LOS F during the PM peak hour
- SR 99/Cosumnes River Boulevard Interchange: Northbound Off-Ramp operates at LOS F during the PM peak hour



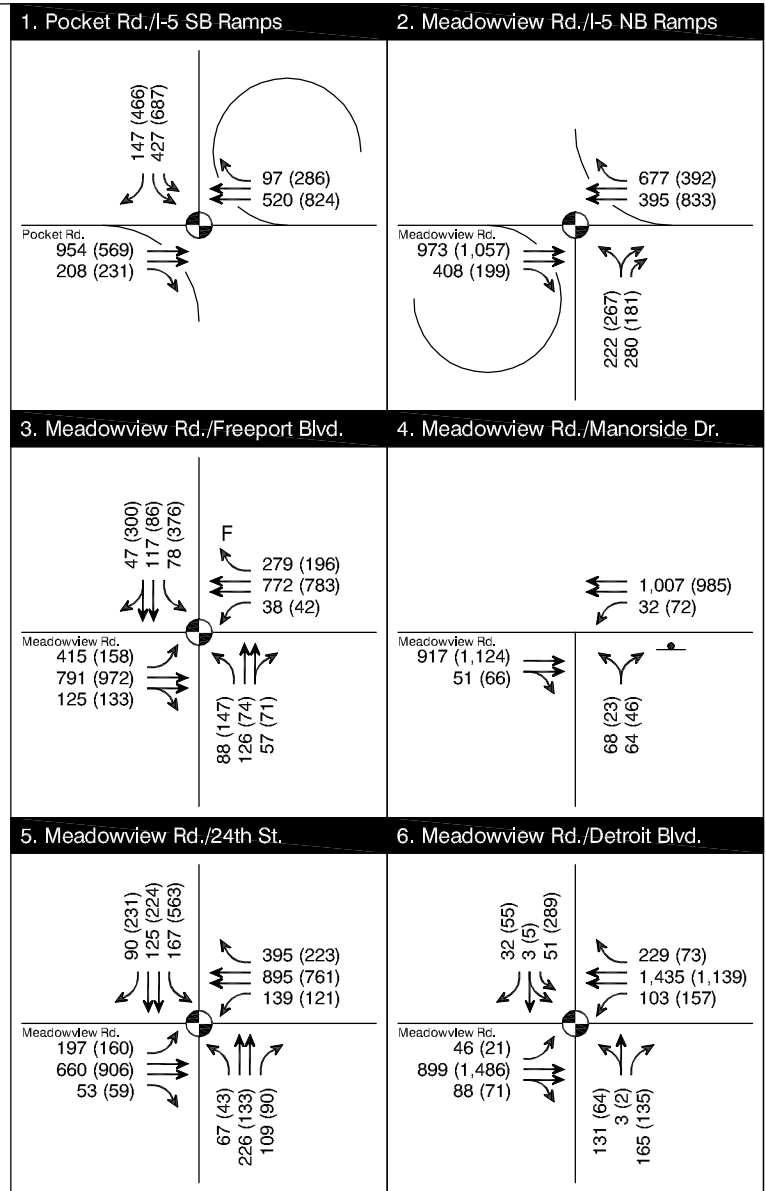
LEGEND

- Turn Movement
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Study Intersection
- Traffic Signal
- Stop Sign
- F "Free" Right Turn



N

NOT TO SCALE





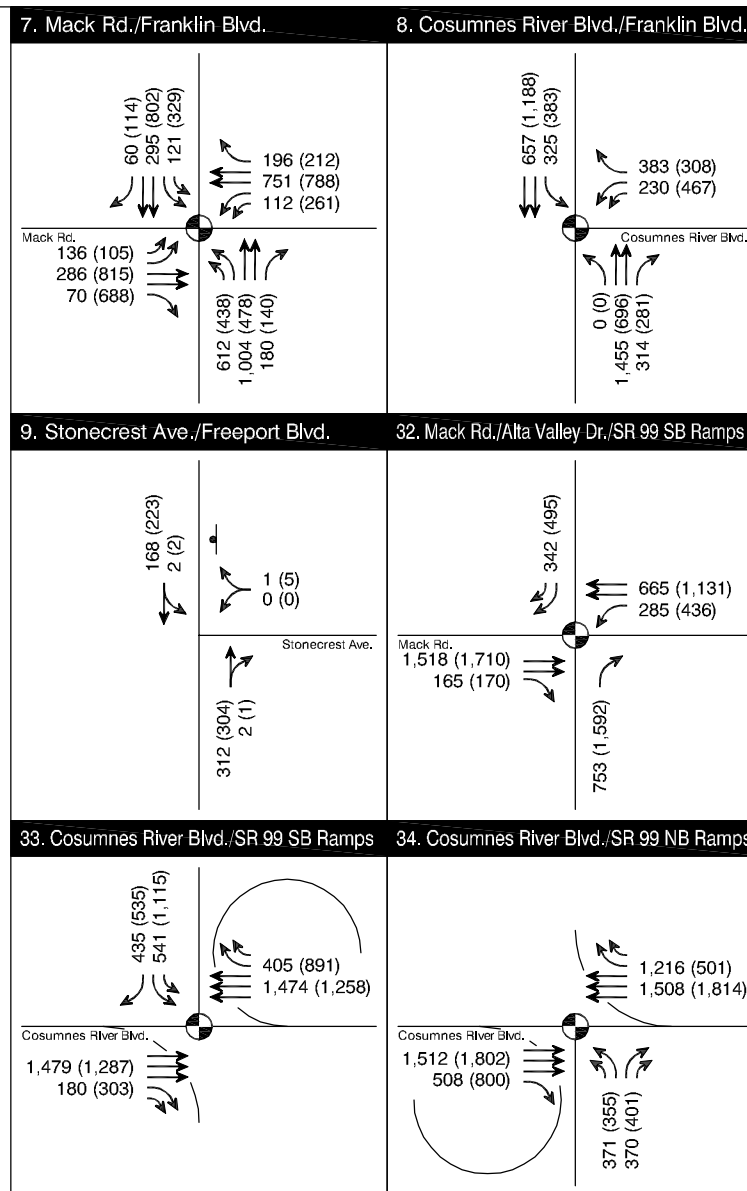
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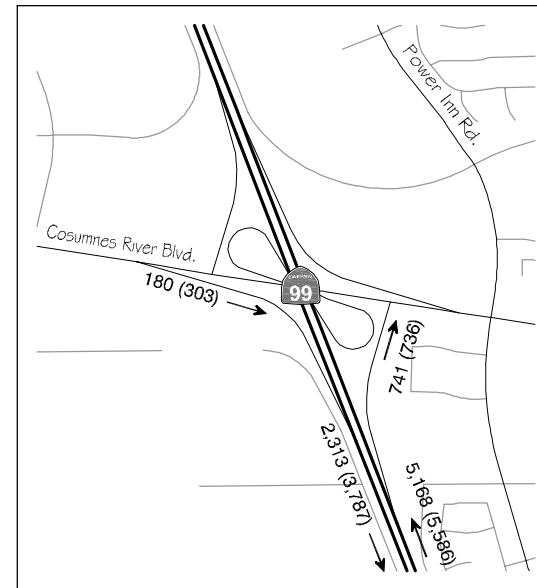
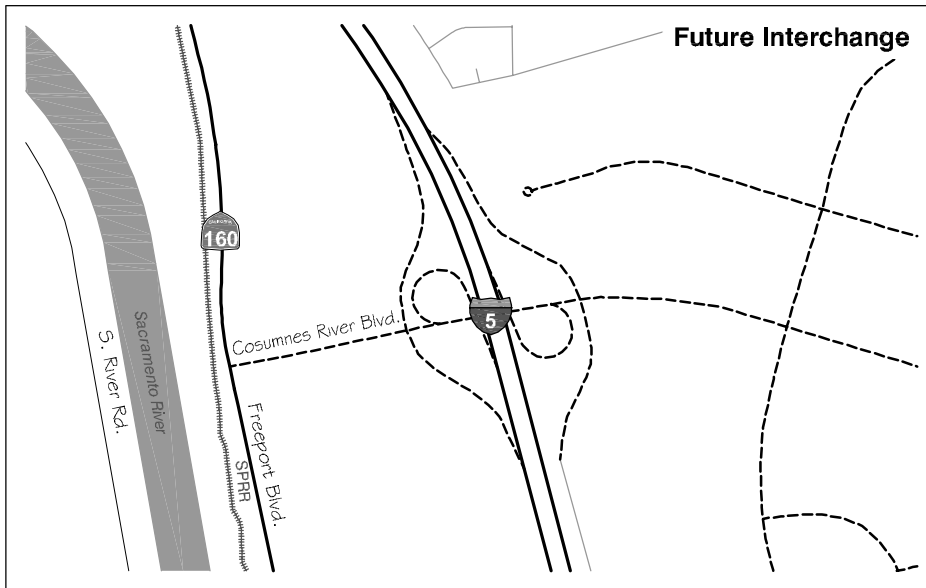
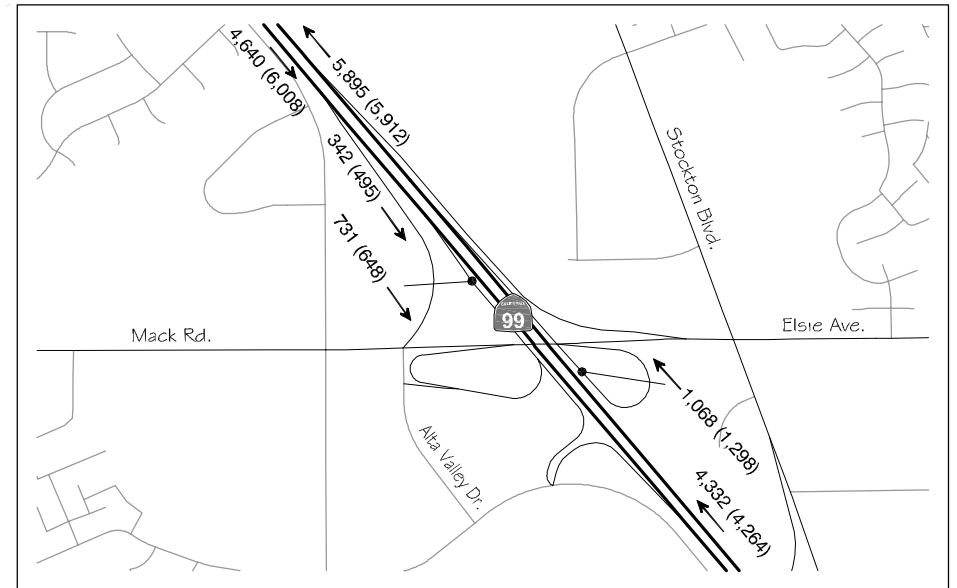
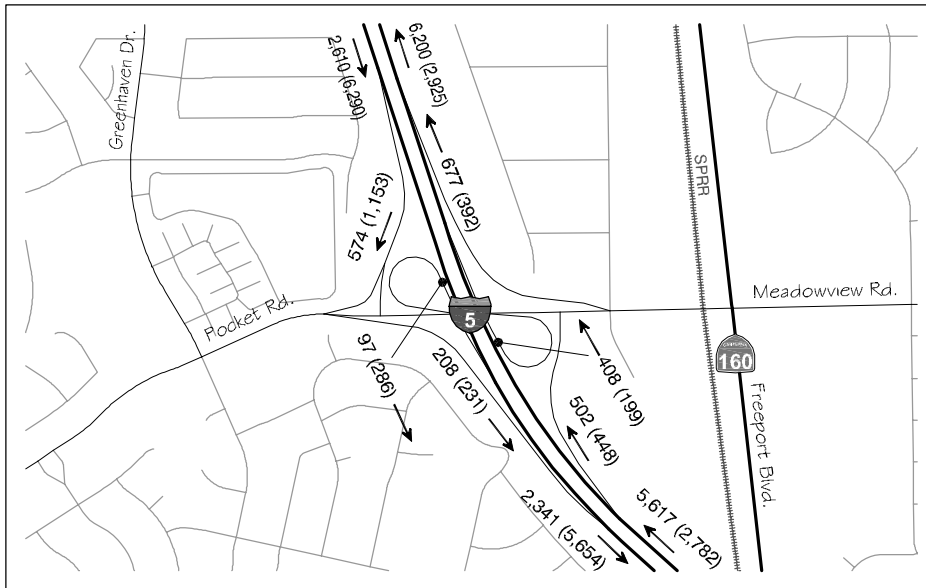
- Turn Movement
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Study Intersection
- Traffic Signal
- Stop Sign



N

NOT TO SCALE





LEGEND

- Travel Direction
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Future Road



N

NOT TO SCALE

TABLE 5.9-3

RAMP JUNCTION OPERATIONS – EXISTING CONDITIONS

Freeway Facilities	Merge/Diverge/Weaving	AM Peak		PM Peak	
		Density ¹	LOS	Density ¹	LOS
<i>I-5/Pocket Rd Interchange</i>					
NB off-Ramp	Diverge	36.9	E	22.5	C
NB Loop on-Ramp	Merge	33.2	D	16.7	B
NB Slip on-Ramp	Merge	38.8	F	20.7	C
SB off-Ramp	Diverge	21.8	C	42.3	F
SB Loop on-Ramp	Merge	15.1	B	33.1	D
SB Slip on-Ramp	Merge	16.1	B	33.7	D
<i>SR 99/Mack Road Interchange</i>					
NB Loop on-Ramp	Merge	22.0	C	21.6	C
SB off-Ramp	Diverge	23.4	C	21.5	C
<i>SR 99/Cosumnes River Boulevard</i>					
NB off-Ramp	Diverge	41.8	E	44.2	F
SB Slip on-Ramp	Merge	21.8	C	27.7	C

Note:
1. Density reported in passenger cars per mile per lane.
Source: Fehr & Peers, 2007.

TABLE 5.9-4

OFF-RAMP VEHICLE QUEUING – EXISTING CONDITIONS

Intersection/Off-Ramp	Turn Movement	Storage Length (feet)	Southbound Ramp ¹		Northbound Ramp ¹	
			AM Peak	PM Peak	AM Peak	PM Peak
I-5 /Pocket Road	Left Turn	NB – 830 feet	275 feet	375 feet	425 feet	425 feet
	Right Turn	SB – 930 feet	25 feet	25 feet	225 feet	150 feet
SR 99/Mack Road	Right Turn	SB – 1,230 feet	300 feet	525 feet		
SR 99/Cosumnes River Blvd.	Left Turn	NB – 1,120 feet			325 feet	300 feet
	Right Turn				375 feet	425 feet

Note:
1. Queues based on 95th percentile queue.
Source: Fehr & Peers, 2007.

TABLE 5.9-5

FREEWAY MAINLINE OPERATIONS – EXISTING CONDITIONS

Freeway	Segment	Direction	AM Peak		PM Peak	
			Density ¹	LOS	Density ¹	LOS
I-5	North of Meadowview Road	NB	>45	F	17.4	B
		SB	15.5	B	>45	F
I-5	North of Laguna Boulevard	NB	37.4	E	16.5	B
		SB	13.9	B	37.9	E
SR 99	North of Mack Road	NB	22.7	C	23.1	C
		SB	23.4	C	21.5	C
SR 99	South of Cosumnes River Blvd.	NB	41.6	E	>45	F
		SB	17.9	B	23.7	C

Note:
1. Density reported in passenger cars per mile per lane.
Source: Fehr & Peers, 2006.

- I-5 Mainline North of Meadowview Road: Northbound operates at LOS F during the AM peak hour
- I-5 Mainline North of Meadowview Road: Southbound operates at LOS F during the PM peak hour
- SR 99 Mainline South of Cosumnes River Boulevard: Northbound operates at LOS F during the PM peak hour

Table 5.9-3 shows that peak hour queues at the off-ramps for the three existing study interchanges do not extend back into the freeway mainline of I-5 or SR 99.

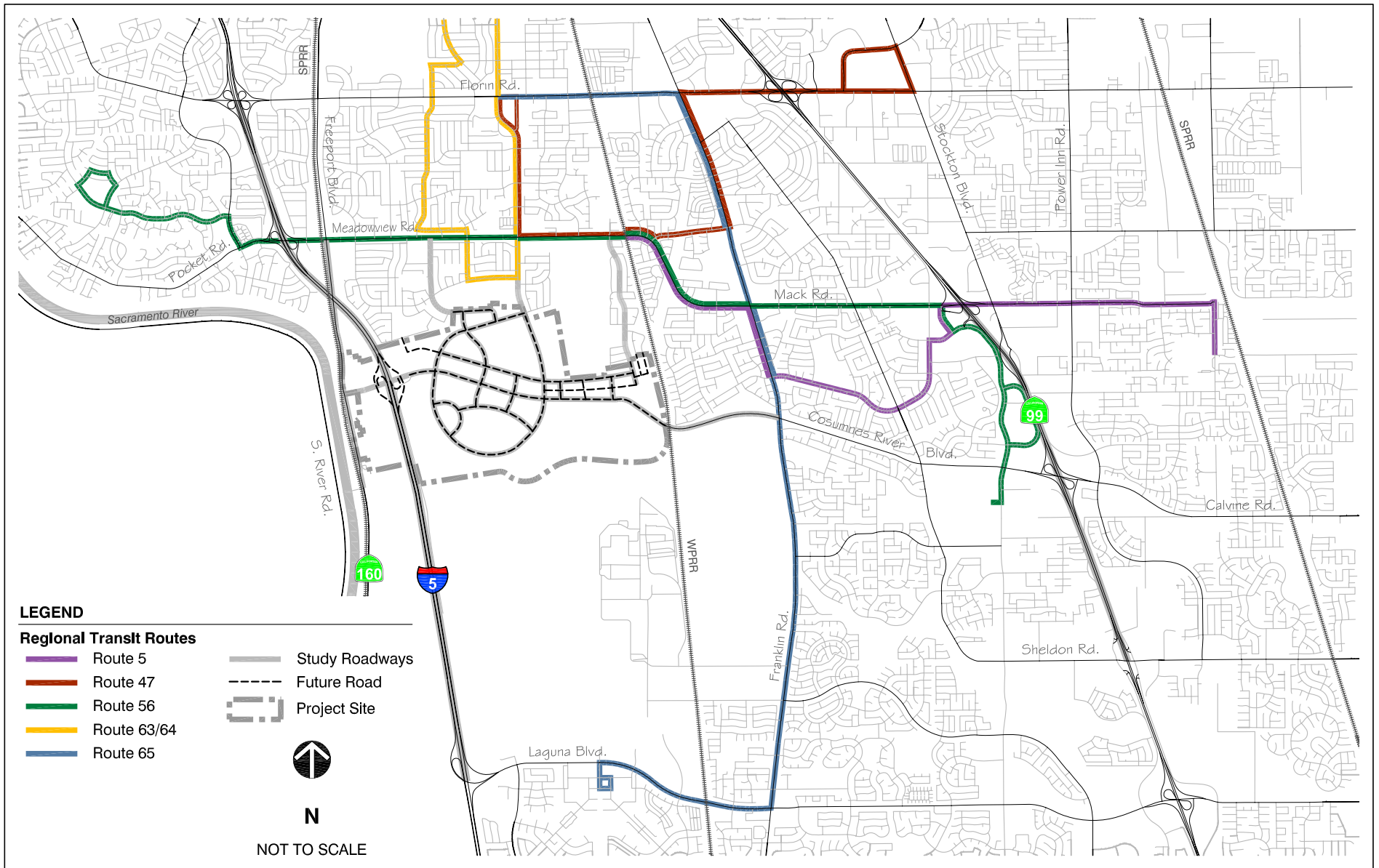
Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities are provided on major streets within the project vicinity. Meadowview Road, Franklin Boulevard, and 24th Street all have Class II on-street bike lanes (i.e., signed and stripped) and sidewalks. Freeport Boulevard (SR 160) has no sidewalks or bicycle lanes.

Transit Service

The Sacramento Regional Transit District (RT) provides public transit service just north and east of the project area. This includes both light rail service and bus service. The Meadowview light rail station is the southern terminus station of the Blue Line light rail service that extends north through downtown Sacramento to the line's northern terminus at the I-80/Watt light rail station. Bus service is currently provided along the Meadowview Road and Franklin Boulevard corridors. Figure 5.9-4 shows the five existing bus routes that provide fixed-route service, as listed below.

- Route 5 (Meadowview LRT Station-Valley Hi) operates on approximately 60 minute headways between the Meadowview light rail station and Florin High School. The route provides service on Meadowview Road, Mack Road, Franklin Boulevard, Valley Hi Drive, Elsie Avenue, and Cottonwood Lane. Service is generally provided from 6:00 AM to 8:00 PM Monday through Friday, and from 8:00 AM to 8:00 PM on Saturdays, Sundays, and holidays.
- Route 47 (Meadowview LRT Station-Florin Mall) operates on approximately 60 minute headways between the Meadowview light rail station and the Florin Mall. The route provides service on 24th Street, Meadowview Road, Franklin Boulevard, and Florin Road. Service is generally provided from 6:00 AM to 7:00 PM Monday through Friday, and from 9:00 AM to 6:00 PM on Saturdays, Sundays, and holidays.
- Route 56 (Pocket-Cosumnes River College) operates on approximately 30 minute headways between the Pocket area, Kaiser Hospital, and Cosumnes River College. The route provides service on Pocket Road, Meadowview Road, Mack Road, and Bruceville Road. Service is generally provided from 6:00 AM to 11:00 PM Monday through Friday, and from 8:00 AM to 10:30 PM on Saturdays, Sundays, and holidays.



- Route 63/64 (Meadowview LRT Station to Downtown Sacramento) operates on approximately 30 minute headways between the Meadowview light rail station and Downtown Sacramento with a stop at Sacramento City College. The route provides service on 24th Street, Franklin Boulevard, Broadway, 15th Street, 16th Street, J Street and L Street. Service is generally provided from 5:00 AM to 7:00 PM Monday through Friday only.
- Route 65 (Laguna Town Hall to Florin LRT Station) operates on approximately 60 minute headways between the Laguna Town Hall and the Florin light rail station. The route provides service on Laguna Boulevard, Franklin Boulevard, and Florin Road. Service is generally provided from 6:00 AM to 7:00 PM Monday through Friday, and from 8:00 AM to 5:00 PM on Saturdays only.

An extension of the Blue Line light rail line is planned south to Cosumnes River College. The Phase 2 South line light rail extension would include a new light rail station in the Stone-Boswell property just north of Cosumnes River Boulevard.

Project Land Use and Circulation

The proposed project site is bounded by the existing Meadowview neighborhood to the north, the Sacramento Regional Wastewater Treatment Plant to the south, the Stone-Boswell property and the Sacramento Job Corps Center to the east, and Freeport Boulevard to the west. Figure 5.9-5 displays the proposed project site plan. The following land uses were assumed to be developed as part of the proposed project for trip generation purposes.

- 5,222 total residential dwelling units²
 - 675 single-family units
 - 4,547 multi-family units
- 1.39 million square feet of commercial
 - 1.23 million square feet of retail in the Village Center
 - 161,000 square feet of mixed use retail in the Town Center
- 31.3 acres of community uses
 - Two elementary schools – 700 students each
 - 22,000 square foot community center
 - Two sports fields

The proposed community center is a private facility that would be limited to use by residents of the project.

2 Appendix J includes a technical memorandum prepared by Fehr & Peers (December, 2007) that documents the proposed project land use and circulation plan, as well as the resulting trip generation estimates. The technical memorandum was subsequently augmented to reflect a change in the project description for the Stone Boswell project that increased the number of residential units from 1,204 to 1,500.

Primary access to the project site would be provided by an extension of Cosumnes River Boulevard from Franklin Boulevard to Freeport Boulevard. A new freeway interchange at the junction of I-5 and the Cosumnes River Boulevard extension would provide regional access to the project. Additionally, 24th Street would be extended from its southerly terminus to Cosumnes River Boulevard. One existing residential roadway (i.e., Manorside Drive) would also provide access to the north. The project would also construct a loop road, called Delta Shores Circle, that would serve as a primary project collector through the project site.

The extensions of Cosumnes River Boulevard and 24th Street, as well as the I-5/Cosumnes River Boulevard interchange, are assumed would be constructed and in place under both the Baseline (i.e., near-term) and Cumulative No Project conditions since they are included in the I-5/Cosumnes River Boulevard Interchange Final EIR certified by the City Council on May 15, 2007.

Project Trip Generation

The AM and PM peak hour trip generation of the project was estimated using trip generation data contained in the ITE Trip Generation (7th Edition, Institute of Transportation Engineers, 2003) for all uses except the proposed elementary and high school, which was estimated using the San Diego Trip Generators (San Diego Association of Governments, 1993). The data from San Diego Trip Generators was used because it is based on California data and has generation data for the PM peak hour; PM data is not available for schools in the ITE Trip Generation data. All land use information is taken from the Delta Shores Schematic Land Use Plan (EDAW, October, 2006). While minor adjustments may be made to the land plan as the project is reviewed and refined, under no circumstances will the unit count for residential property or the square footage of commercial property be increased beyond a maximum of 5,222 units. Accordingly, such adjustments will not affect the validity of the traffic study.

Table 5.9-6 provides the gross number of vehicle trips that would be generated by the project based on the project description and the trip data from the two sources described above. The overall trip generation was subsequently broken down by into traffic zones, at the super-block level, based on the project site plan. This information is provided in the separately bound traffic technical appendices.

The total gross trip generation for the projects is further disaggregated in Table 5.9-7 to reflect the following travel components:

- Mixed Use Internal Capture Rates – estimate of internal travel between the following uses within the projects;
 - Residential – Retail,
 - Residential – Elementary School,
 - Residential – Community Center, and
 - Residential – Park.



TABLE 5.9-6

DELTA SHORES TRIP GENERATION – GROSS VEHICLE TRIPS

Land Use	Amount	Source	Weekday	Trips						
				AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
Single-Family Residential	675 DUs ²	ITE ¹ 210	5,520	119	357	476	338	198	536	
Multi-Family Residential	Single-Family Attached	1,337 DUs ²	ITE ¹ 210	10,934	236	706	942	669	393	1,062
	Medium-Density	1,337 DUs ²	ITE ¹ 230	5,818	70	341	411	338	166	504
	High-Density	1,415 DUs ²	ITE ¹ 220	8,618	139	558	697	515	277	792
Town Center	Residential	458 DUs ²	ITE ¹ 220	2,790	45	180	225	166	90	256
Mixed-Use	Retail	161 ksf ³	ITE ¹ 820	9,255	127	81	208	411	446	857
Village Center	Commercial Retail	1,230 ksf ³	ITE ¹ 820	34,704	430	275	705	1574	1706	3280
Community Center		22 ksf ³	ITE ¹ 495	180	22	14	36	10	26	36
Park (2 soccer fields)	2 Fields	ITE ¹ 488	144	--	--	--	29	13	42	
Elementary School	1,400 students	SANDAG ⁴	1,960	307	203	510	29	69	98	
Gross Trips			79,923	1,495	2,715	4,210	4,079	3,384	7,463	
Notes:										
1. Based on trip generation data from Trip Generation (ITE, 2003).										
2. DU = dwelling unit.										
3. ksf = thousand square feet.										
4. Based on trip generation data from San Diego Traffic Generators (San Diego Association of Governments, 1993).										
Source: Fehr & Peers, 2007.										

Trip Type	Land Use	Trips						
		Weekday	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Total Gross Trips	Residential	33,680	609	2,142	2,751	2,026	1,124	3,150
	Retail	43,959	557	356	913	1,985	2,152	4,137
	Elementary School	1,960	307	203	510	29	69	98
	Community Center	180	22	14	36	10	26	36
	Park	144	--	--	--	29	13	42
Internal Trips	<i>Residential-Retail¹</i>	4,394	17	36	53	240	196	436
	<i>Residential-Elementary School</i>	1,568	162	246	408	55	23	78
	<i>Residential-Community Center</i>	180	14	22	36	26	10	36
	<i>Residential-Park</i>	72	0	0	0	7	15	22
	<i>Retail-Residential¹</i>	4,394	36	17	53	196	240	436
	<i>Elementary School-Residential</i>	1,568	246	162	408	23	55	78
	<i>Community Center-Residential</i>	180	22	14	36	10	26	36
	<i>Park-Residential</i>	72	0	0	0	15	7	22
Gross Trips		79,923	1,495	2,715	4,210	4,079	3,384	7,463
Total Internal Trips		12,428	497	497	994	572	572	1,144
Total External Trips		67,495	998	2,218	3,216	3,507	2,812	6,319
Retail Trip Adjustment	External Village Center Retail	31,236	401	262	663	1,419	1,517	2,936
	<i>Pass-by²</i>	6,247	67	67	134	294	294	588
	External Town Center Retail	8,329	120	77	197	370	395	765
	<i>Pass-by³</i>	1,666	20	20	40	134	134	268
	New External Retail Auto	31,652	434	252	686	1,361	1,484	2,845
Net New External Auto Trips		59,582	911	2,131	3,042	3,079	2,384	5,463

Notes:
1. Based on Multi-Use Development Internal Capture methodology from Trip Generation Handbook (ITE, 2004).
2. Pass-by Adjustment is 20% of external retail trips based on Trip Generation Handbook (ITE, 2004).
3. Pass-by Adjustment is 35% of PM and 20% of AM and Weekday external retail trips based on Trip Generation Handbook (ITE, 2004).
Source: Fehr & Peers, 2007.

Land Use	Transit Trips						
	Weekday	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Delta Shores Project	1,400	40	140	180	130	70	200

Note:
2000 Census Journey to Work Mode Share Data.
Source: Fehr & Peers, 2007.

- Retail Trip Adjustment – estimate of the portion of retail trips that are either pass-by trips or diverted linked trips.

Four different mixed use trip types would occur within the proposed project. The following is a summary of the trip types and the basis for estimating the level of trips that would occur within each land use.

- Internal Residential-Retail Travel – based on the use of the ITE Multi-Use Development methodology, approximately 2 (AM peak hour) to 12 percent (PM peak hour) of the gross trips generated by the residential and retail uses would be internal to the projects.
- Internal Residential-Elementary School Travel – 80 percent of the elementary school trips are projected to be internal to Delta Shores, based on the relationship between the number of residential units in the project and the number of students served in the two planned elementary schools.
- Internal Residential-Community Center Travel – 100 percent of the community center trips are projected to be internal to Delta Shores, based on the project description that indicates the center will be a private facility available only to residents of Delta Shores.
- Internal Residential-Park Travel – 50 percent of the park trips are projected to be internal to Delta Shores, based on the community park description that indicates the park will serve residents within a 2-3 mile radius.

The retail adjustment is based on data provided by ITE on the percentage of pass-by trips that occur in comparable retail facilities. It is estimated that 35 percent of the PM peak hour and 20 percent of the AM peak hour and weekday external retail trips for the Delta Shores Town Center retail uses would be pass-by trips. Due to its large size and destination-driven retail uses, it is estimated that 20 percent of the Delta Shores Village Center external trips would be pass-by trips for weekday and peak hour trips.

As shown in Table 5.9-6, the proposed project would generate approximately 59,600 new daily trips, 3,000 new AM peak hour trips, and 5,500 new PM peak hour trips.

The Delta Shores project is estimated to generate an additional 180 to 200 transit trips during the peak commute hours, based on the mode share data from the 2000 Census. The majority of these trips will be generated by the residential uses in the project.

Table 5.9-8 provides the gross number of vehicle trips that would be generated by the project based on the level of development that could occur under the City's current 1988 General Plan and zoning designations. The development capacity levels for the two projects were provided by City staff. It was assumed that two elementary schools would be included in the project (i.e., consistent with the proposed project) given that the total number of residential units are similar to the proposed project.

Table 5.9-9 provides the net number of vehicle trips that would be generated by the project based on the level of development that could occur under the City's current 1988 General Plan and zoning

TABLE 5.9-8

TRIP GENERATION – GROSS TRIPS PER GENERAL PLAN AND ZONING

Land Use	Amount	Source	Trips						
			Weekday	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Single-Family Residential	3,424 DUs ²	ITE ¹ 210	26,835	602	1,805	2,406	1,624	954	2,578
High-Density Residential	450 DUs ²	ITE ¹ 220	2,855	45	179	224	172	93	265
Light Industrial	4,296 ksf ³	ITE ¹ 110	31,989	4,382	598	4,980	718	5,262	5,980
Retail	367 ksf ³	ITE ¹ 820	15,811	208	133	341	709	768	1,477
Park (2 soccer fields)	2 Fields	ITE ¹ 488	144	--	--	--	29	13	42
Elementary School	1,400 students	SANDAG ⁴	1,960	307	203	510	29	69	98
Gross Trips			79,594	5,543	2,918	8,462	3,281	7,159	10,439

Notes:

- Based on trip generation data from Trip Generation (ITE, 2003).
- DU = dwelling unit.
- ksf = thousand square feet.
- Based on trip generation data from San Diego Traffic Generators (San Diego Association of Governments, 1993).

Source: Fehr & Peers, 2007.

TABLE 5.9-9

GENERAL PLAN AND ZONING TRIP GENERATION – NET NEW EXTERNAL VEHICLE TRIPS

Trip Type	Land Use	Weekday	Trips					
			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Total Gross Trips	Residential	29,690	646	1,984	2,630	1,796	1,047	2,843
	Retail	15,811	208	133	341	709	768	1,477
	Light Industrial	31,989	4,382	598	4,980	718	5,262	5,980
	Elementary School	1,960	307	203	510	29	69	98
	Park	144	--	--	--	29	13	42
Internal Trips	<i>Residential-Retail¹</i>	1,581	50	17	67	177	69	246
	<i>Residential-Elementary School</i>	1,568	162	246	408	55	23	78
	<i>Residential-Light Industrial</i>	158	0	0	0	21	0	21
	<i>Residential-Park</i>	72	0	0	0	7	15	22
	<i>Retail-Light Industrial</i>	553	0	21	21	15	44	59
	<i>Retail-Residential¹</i>	1,581	17	50	67	69	177	246
	<i>Elementary School-Residential</i>	1,568	246	162	408	23	55	78
	<i>Light Industrial-Residential</i>	158	0	0	0	0	21	21
	<i>Park-Residential</i>	72	0	0	0	15	7	22
	<i>Light Industrial-Retail</i>	553	21	0	21	44	15	59
Gross Trips			79,595	5,544	2,918	8,462	3,281	7,158
Total Internal Trips			7,864	496	496	992	426	426
Total External Trips			71,731	5,048	2,422	7,470	2,855	6,732
Retail Trip Adjustment	External Retail	13,677	191	62	253	625	547	1,172
	<i>Pass-by²</i>	4,102	38	38	76	175	175	350
	New External Retail Auto	9,575	153	24	177	450	372	822
Net New External Auto Trips			67,629	5,010	2,384	7,394	6,557	9,237

Notes:

- Based on Multi-Use Development Internal Capture methodology from Trip Generation Handbook (ITE, 2004).
- Retail trip adjustment for pass-by adjustment of 30% per ITE.

Source: Fehr & Peers, 2007.

designations. The methodology applied to identify the number of net vehicle trips is the same as described above for the project.

Trip Distribution

Figure 5.9-6 shows the trip distribution applied for the Near-Term Plus Pre-Interchange scenario evaluation of the development potential for the project prior to construction of the interchange. The Near-Term trip distribution is based on existing travel patterns in the study area.

Figure 5.9-7 shows the trip distribution applied for both the Baseline Plus Project and Cumulative Plus Project scenarios. The distribution of project trips to the surrounding roadway network was accomplished using the 2032 SACMET regional travel demand forecasting model, given the size and mix of project uses. Based on the model assignment, the majority of project trips would use Cosumnes River Boulevard to access I-5 at the new I-5/Cosumnes River Boulevard interchange. Freeport Boulevard would be used by project traffic, primarily from new residents located in the western portion of the project, west of I-5. 24th Street would also serve residential project traffic traveling to/from the north; it would also be a key route for residents of the Meadowview neighborhood destined for the project's retail and school uses. Residents and retail patrons would also travel to/from the east via Cosumnes River Boulevard. The traffic model projects that only a small amount of project traffic (i.e., one to two percent) would use the SR 99 interchanges at Cosumnes River Boulevard and Mack Road, because alternate routes such as I-5 and Franklin Boulevard provide faster travel times to the north and south, respectively.

Regulatory Context

Federal

There are no pertinent federal regulations.

State

The Caltrans specifies LOS D as the minimum acceptable level of service standard for freeway segments, ramps, and ramp intersections. However, LOS E is acceptable for the five freeway segments in the vicinity of the project area and downtown Sacramento area (milepost: 10.8 to 34.7).

Local

City of Sacramento 1988 General Plan

The City of Sacramento General Plan outlines goals and policies that coordinate the transportation and circulation system with planned land uses.

The City of Sacramento's 1988 General Plan includes the following goals related to transportation:

CIRCULATION ELEMENT

Overall Goals

Goal A Create a safe, efficient surface transportation network for the movement of people and goods.

Goal B Provide all citizens in all communities of the City with access to a transportation network that serves both the City and region, either by personal vehicle or transit. Make a special effort to maximize alternatives to single-occupant vehicle use, such as public transit.

Goal C Maintain a desirable quality of life, including good air quality, while supporting planned land use and population growth.

Transportation Planning

Goal A Establish and implement a comprehensive regional transportation plan that identifies needs, integrates the existing transportation network with planned growth, and proposes new facilities.

Goal B Consider air quality along with traffic flow efficiency when making decisions about transportation.

Streets and Roads

Goal A Create a street system that would ensure the safe and efficient movement of people and goods within and through communities and to other areas in the City and region.

Goal B Maintain the quality of the City's street system.

Goal C Create and maintain a street system that protects residential neighborhoods from unnecessary levels of traffic.

Goal D Work towards achieving an overall Level of Service "C" on the City's local and major street systems.

Pedestrianways

Goal A Increase the use of the pedestrian mode as a mode of choice for all areas of the City.

Bikeways

Goal A Develop bicycling as a major transportation and recreational mode.

City of Sacramento 2030 General Plan

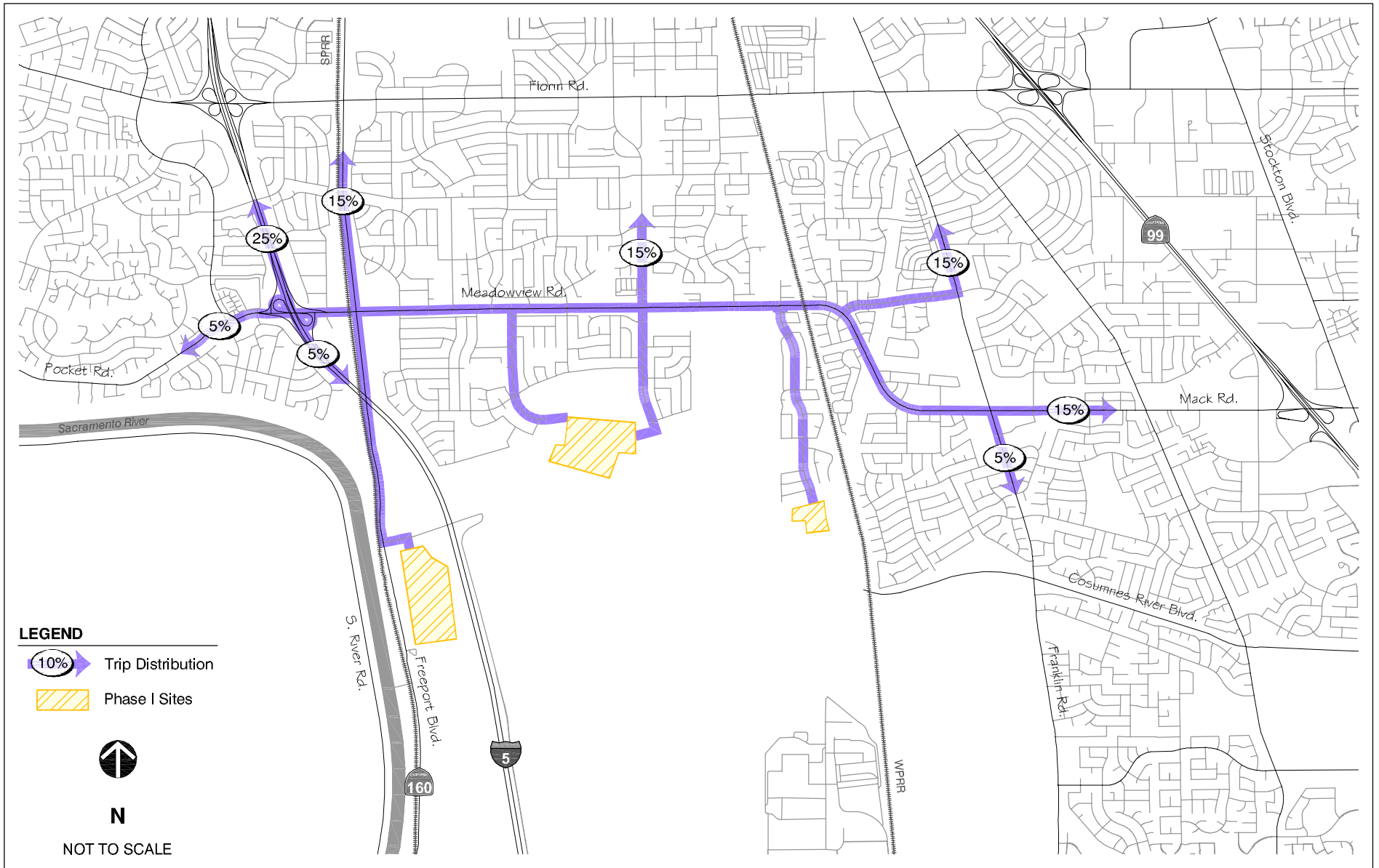
The City anticipates adopting its new 2030 General Plan by the end of 2008. Therefore, applicable policies from the draft 2030 General Plan are included below.

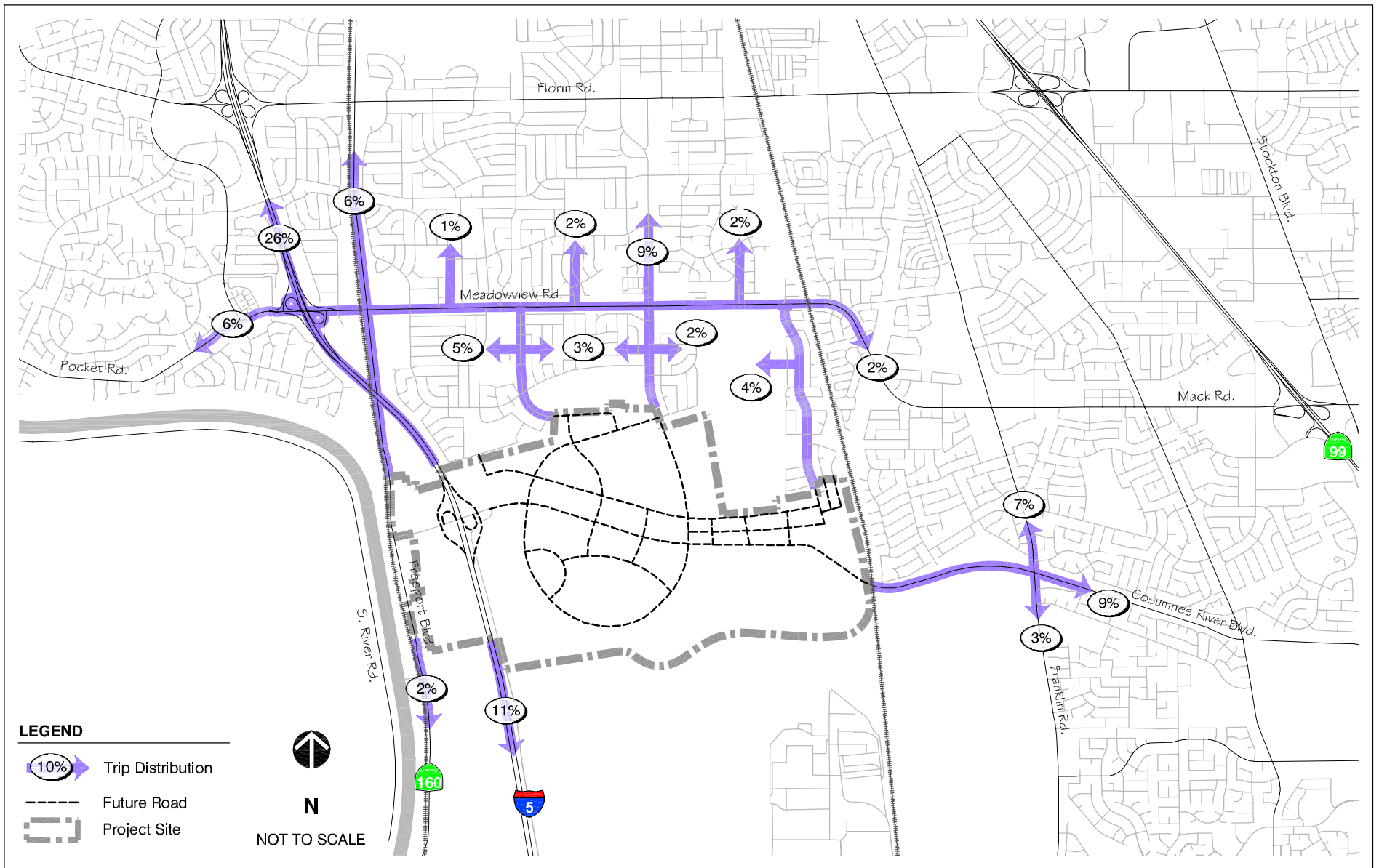
Goal M 1.2 Multimodal System. Provide expanded transportation choices to improve the ability to travel efficiently and safely to destinations throughout the city and region.

Policies

M 1.2.1 Multimodal Choices. The City shall promote development of an integrated, multi-modal transportation system that offers attractive choices among modes including pedestrian ways, public transportation, roadways, bikeways, rail, waterways, and aviation.

M 1.2.2 LOS Standard. The City shall allow for flexible Level of Service (LOS) standards, which will permit increased densities and mix of uses to increase transit ridership, biking, and walking, which decreases auto travel, thereby reducing air pollution, energy consumption, and greenhouse gas emissions.





- a. **Level of Service Standard for Multi-Modal Districts**—The City shall seek to maintain the following standards in multi-modal districts including the Central Business District, areas within ½ mile walking distance of light rail stations, and mixed use-corridors as designated by the City. These areas are characterized by frequent transit service, enhanced pedestrian and bicycle systems, a mix of uses, and higher-density development.
 - Maintain operations on all roadways and intersections at LOS E or better at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of LOS E may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or a City-initiated project.
- b. **Base Level of Service Standard**—the City shall seek to maintain the following standards for all areas outside of multi-modal districts.
 - Maintain operations on all roadways and intersections at LOS D or better at all times, including peak travel times, unless maintaining this Level of service would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of LOS D may be accepted, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or a City-initiated project.

M 1.2.3 **Multimodal Access.** The City shall promote the provision of multimodal access to activity centers such as commercial centers and corridors, employment centers, airports, schools, parks, recreation areas, and tourist attractions.

Goal M 1.3 Barrier Removal. Improve system connectivity by removing barriers to travel.

Policies

- M 1.3.1 **Grid Network.** The City shall require all new residential, commercial, or mixed-use development that proposes or is required to construct or extend streets to develop a transportation network that provides for a well-connected, walkable community, preferably as a grid or modified grid.
- M 1.3.2 **Private Complete Streets.** The City shall require large private developments (e.g., office parks, apartment complexes, retail centers) to provide internal complete streets that connect to the existing roadway system.
- M 1.3.3 **Eliminate Gaps.** The City shall eliminate “gaps” in roadways, bikeways, and pedestrian networks.
 - a. The City shall construct new multi-modal crossings of the Sacramento and American Rivers.
 - b. The City shall plan and seek funding to construct grade-separated crossings of freeways and rail lines to improve connectivity.
 - c. The City shall construct new bikeways and pedestrianways in existing neighborhoods to improve connectivity.
- M 1.3.4 **Connections to Transit Stations.** The City shall provide connections to transit stations by identifying roadway, bikeway, and pedestrianway improvements to be constructed within ½ mile of major transit stations.
- M 1.3.5 **Multi-Jurisdictional Transportation Corridors.** The City shall work with adjacent jurisdictions to identify existing and future transportation corridors that should be linked across jurisdictional boundaries so that sufficient right-of-way may be preserved.

Goal M 1.4 Transportation Demand Management. Decrease the dependence on single-occupant use of motor vehicles through Transportation Demand Management.

Policies

- M 1.4.1 **Increase Vehicle Occupancy.** The City shall work with a broad range of agencies (e.g., SACOG, SMAQMD, Caltrans) to encourage and support programs that increase vehicle occupancy including the provision of traveler information, shuttles, preferential parking for carpools/vanpools, transit pass subsidies, and other methods.

- M 1.4.2 **Commute Trip Reduction.** The City shall encourage employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education, and preferential parking for carpools/vanpools.
- M 1.4.3 **Transportation Management Associations.** The City shall encourage commercial, retail, and residential developments to participate in or create Transportation Management Associations.
- M 1.4.4 **Off-Peak Deliveries.** The City shall encourage business owners to schedule deliveries at off-peak traffic periods.
- Goal M 1.5 Emerging Technologies and Services. Use emerging transportation technologies and services to increase transportation system efficiency.**

Policies

- M 1.5.5 **Neighborhood Electric Vehicles.** The City shall encourage developments and street systems that support the use of Neighborhood Electric Vehicles (NEV).
- Goal M 2.1 Integrated Pedestrian System. Design a universally accessible, safe, convenient, and integrated pedestrian system that promotes walking.**

Policies

- M 2.1.1 **Pedestrian Master Plan.** The City shall maintain and implement a Pedestrian Master Plan that defines the location of pedestrian-oriented streets and pathways; standards for sidewalk width, improvements, amenities; and street crossings; schedule for public improvements; and developer responsibilities.
- M 2.1.2 **Sidewalk Design.** The City shall require that sidewalks in districts intended to support active pedestrian use be developed at sufficient width to accommodate pedestrians including the disabled; a buffer separating pedestrians from the street and curbside parking; amenities; and allow for outdoor uses such as cafes.
- M 2.1.3 **Streetscape Design.** The City shall require pedestrian-oriented streets shall be designed to provide a pleasant environment for walking including shade trees; plantings; well-designed benches, trash receptacles, news racks, and other furniture; pedestrian-scaled lighting fixtures; wayfinding signage; public art; and other amenities.
- M 2.1.4 **Cohesive Network.** The City shall develop a cohesive pedestrian network of public sidewalks and street crossings that makes walking a convenient and safe way to travel.
- M 2.1.5 **Continuous Network.** The City shall provide a continuous pedestrian network in existing and new neighborhoods that facilitates convenient pedestrian travel free of major impediments and obstacles.
- M 2.1.6 **Building Design.** The City shall ensure that new buildings are designed to encourage walking.
- M 2.1.7 **Parking Facility Design.** The City shall ensure that new automobile parking facilities are designed to facilitate safe and convenient pedestrian access, including clearly defined corridors and walkways connecting parking areas with buildings.
- M 2.1.8 **Housing and Destination Connections.** The City shall require new subdivisions and large-scale developments to include safe pedestrian walkways that provide direct links between streets and major destinations such as bus stops, schools, parks, and shopping centers.
- M 2.1.9 **Pedestrian Awareness Education.** The City shall develop partnerships with local organizations to develop education materials and promote pedestrian awareness.
- M 2.1.10 **Safe Pedestrian Crossings.** The City shall improve pedestrian safety at intersections and mid-block locations by providing safe, well-marked pedestrian crossings, bulb-outs or median refuges that reduce crossing widths, and/or audio sound warnings.
- M 2.1.11 **Speed Management Policies.** The City shall develop and implement speed management policies that support driving speeds on all city streets that are safe for pedestrians.
- M 2.1.12 **Safe Sidewalks.** The City shall develop safe and convenient pedestrianways that are universally accessible, adequately illuminated, and properly designed to reduce conflicts between motor vehicles and pedestrians.

Goal M 3.1 Safe, Comprehensive, and Integrated Transit System. Create and maintain a safe, comprehensive, and integrated transit system as an essential component of a vibrant transportation system.

Policies

M 3.1.2 **Maintain Services.** The City shall work with transit providers to maintain services within the city that are timely, cost-effective, and responsive to growth patterns and enhance transit where feasible.

M 3.1.10 **New Facilities.** The City shall work with transit providers to identify alignments for light rail and bus route extensions and new station locations.

M 3.1.13 **Light Rail Extension to Airport and South Sacramento.** The City shall support the extension of light rail service to Sacramento International Airport and further extension in South Sacramento.

M 3.1.16 **Developer Contributions.** The City shall require developer contributions for bus facilities and improvements.

Goal M 4.2 Complete Streets. Provide complete streets that balance the diverse needs of diverse users of the public right-of-way.

Policies

M 4.2.1 **Adequate Rights-of-way.** The City shall ensure that all new roadway projects and major reconstruction projects provide appropriate and adequate rights-of-way for all users including bicyclists, pedestrians, transit riders, and motorists except where pedestrians and bicyclists are prohibited by law from using a given facility.

M 4.2.2 **Pedestrian and Bicycle-Friendly Streets.** The City shall ensure that new streets in areas with high levels of pedestrian activity (e.g., employment centers, residential areas, mixed-use areas, schools) support pedestrian travel by providing such elements as detached sidewalks, frequent and safe pedestrian crossings, large medians for pedestrian refuge, Class II bike lanes, frontage roads with on-street parking, and/or grade-separated crossings.

M 4.2.3 **Adequate Street Tree Canopy.** The City shall ensure that all new roadway projects and major reconstruction projects provide for the development of an adequate street tree canopy.

Goal M 4.3 Neighborhood Traffic. Enhance the quality of life within existing neighborhoods through the use of neighborhood traffic management techniques.

Policies

M 4.3.2 **Neighborhood Traffic Management.** The City shall incorporate traffic control measures in new residential neighborhoods in an effort to manage neighborhood traffic.

Goal M 4.4 Roadway Functional Classification and Typology. Maintain an interconnected system of streets that allows travel on multiple routes by multiple modes.

Policies

M 4.4.1 **Roadway Network Development.** The City shall develop a roadway network that categorizes streets according to function and type, considering the surrounding land use context.

Street Functional Classification

The City of Sacramento's streets are classified based on both function and typology. Figure M 2 shows the functional classification of city roadways. The functional classification for the city's roadways is defined as follows.

- › *Major Arterial:* High-speed/high-capacity roadways that provide access to regional transportation facilities. Access to parcels is a secondary function and should be limited to the extent feasible. Four-lane to six-lane arterials have right-of-way widths of approximately 100 to 120 feet. Boulevards have right-of-way widths of approximately 90 to 160 feet.

- › *Minor Arterial:* Roadways that connects major facilities but have more access to parcels than Major Arterials. Parking is allowed, but may be limited. Intersections with other arterials are signal controlled. Access is restricted, with no residential driveways except from multi-family units. Two-lane arterial streets have right-of-way widths of approximately 70 to 90 feet.
- › *Collector:* Medium-speed, medium-volume roadways that provide access within and between neighborhoods. Connects residential uses to the major street system. Two-lane collector streets have right-of-way widths of approximately 60 to 85 feet.
- › *Local:* Low-speed, low-volume roadways that provide direct access to abutting land uses. Serves the interior of a neighborhood. Two-lane local streets have right-of-way widths of approximately 50 to 60 feet.
- › *Alley:* travel way that provides rear access to residential and commercial uses and not intended for general traffic circulation.

Street Typology

Street typologies expand upon the functional classifications to consider street context and non-auto travel modes. This definition ensures that street standards are not uniformly applied but consider a street's relation to surrounding land uses, appropriate travel speeds, and need to accommodate multiple travel modes. Table M 1 lists the street types appropriate for each functional classification.

STREET TYPOLOGY SYSTEM INTEGRATING STREET FUNCTION AND TYPE						
Functional Class	Street Type					
	Residential Street	Main Street	Mixed-Use Street	Commercial Street	Industrial Street	Boulevard
Major Arterial		X	X	X	X	X
Minor Arterial	X	X	X	X	X	X
Collector	X	X	X		X	X
Local	X	X	X		X	
Alley						

Most street types can be found in more than one functional class, and vice versa. Street design should consider both street function and street type when enhancements are made to the multi-modal street system. For example, a street that has an arterial function and a residential type will have different characteristics and design features than a residential street with a collector or local access function. Residential arterial streets serve longer distance trips than residential collector or local streets. As such, maintaining the through capacity should be a higher priority on a residential arterial than on a residential collector or local street. Similarly, a mixed-use collector street and an industrial collector street have different characteristics. A mixed-use collector emphasizes accommodating several transportation modes while an industrial collector emphasizes accommodating heavy trucks and automobiles.

Residential Streets: Residential Streets serve two major purposes. As arterials, Residential Streets balance multi-modal mobility with land access. As collector or local streets, Residential Streets are designed to emphasize walking, bicycling, and property access. In both cases, Residential Streets tend to be more pedestrian-oriented than Commercial Streets.

Main Streets: Main Streets serve retail and mixed land uses including downtown areas and neighborhood centers. Unlike Commercial Streets, Main Streets are designed to promote walking, bicycling, and transit with attractive streetscape and pedestrian-oriented design elements. Generally, Main Street activities are concentrated along a two- to eight-block area, but may extend further depending on the type of adjacent land uses and the area served. Narrower street widths can be used to reduce travel speeds on main street segments. An arterial main street segment will likely include additional travel lanes and turn pockets, wider sidewalks, and curb extensions to reduce crosswalk widths.

Mixed-Use Streets: Mixed-Use Streets are located in high intensity mixed-use commercial, retail, and residential areas with substantial pedestrian activity. Alternative modes of travel are emphasized on Mixed-Use Streets with increased use of pedestrian, bicycle and transit design elements.

Commercial Streets: The most common Commercial Streets are the strip commercial arterials. Strip commercial arterials typically serve commercial areas containing numerous small retail strip centers with buildings set back behind fronting parking lots. Strip commercial arterials have numerous intersections and driveways to access adjacent businesses.

Boulevards: Boulevards are arterials that serve a gateway or civic purpose and should be considered for special treatments that include expansive landscaped medians, wide sidewalks, and on-street or off-street bike lanes. Traffic flow should be maintained and transit access optimized. An optional design element could include medians that separate travel lanes from parking access lanes, to reduce delays caused by on-street parking and provide an additional buffer for adjacent land uses.

Goal M 5.1 Integrated Bicycle System. Create and maintain a safe, comprehensive, and integrated bicycle system and support facilities throughout the city that encourages bicycling that is accessible to all.

Policies

- M 5.1.6 **Connections between New Development and Bicycle Facilities.** The City shall require that new development provides connections to and does not interfere with existing and proposed bicycle facilities.
- M 5.1.7 **Class II Bike Lane Requirements.** The City shall require Class II bike lanes on all new arterial and collector streets.
- M 5.1.8 **Connections Between New Development and Bikeways.** The City shall ensure that new residential development projects provide a direct connection to the nearest bikeway along an arterial or collector street.
- M 5.1.11 **Bike Facilities in New Developments.** The City shall require that larger new development projects (e.g., park-and-ride facilities, employment centers, educational institutions, recreational and retail destinations, and commercial centers) provide bicycle racks, personal lockers, showers, and other bicycle-support facilities.
- M 5.1.12 **Bicycle Parking at Transit Facilities.** The City shall coordinate with transit operators to provide for secure short- and long-term bicycle parking at all light rail and bus rapid transit stations, and bicycle racks at all major bus transfer stations.
- M 5.1.14 **Encourage Bicycle Use.** The City shall encourage bicycle use in neighborhoods where significant segments of the population do not drive and where short trips are most common.

Goal M 6.1 Managed Parking. Provide and manage parking such that it balances the citywide goals of economic development, livable neighborhoods, sustainability, and public safety with the compact multi-modal urban environment prescribed by the General Plan.

Policies

- M 6.1.2 **Reduce Minimum Parking Standards.** The City shall reduce minimum parking standards over time to promote walkable neighborhoods and districts and to increase the use of transit and bicycles.
- M 6.1.4 **Reduction of Parking Areas.** The City shall strive to reduce the amount of land devoted to parking through such measures as development of parking structures, the application of shared parking for mixed-use developments, and the implementation of Transportation Demand Management plans to reduce parking needs.

Goal M 9.1 Transportation Funding. Provide sufficient funding to construct and maintain the transportation facilities needed to achieve the city's mobility goals.

Policies

- M 9.1.1 **New Development Fees.** The City shall assess fees on all new development for all transportation modes to ensure that new development bears its fair share of the costs for new and expanded facilities.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The analysis methodology, transportation impacts, and mitigation measures for the proposed project under Baseline and Cumulative conditions are described below. In addition, as noted in the Introduction on page 5.9-1, the traffic analysis assumes development of 5,222 residential units compared to 5,092 units currently proposed. Therefore, the traffic analysis assumes a more conservative approach in determining traffic impacts.

Analysis Methodology

It is anticipated that the City will adopt a new General Plan (Sacramento 2030 General Plan) before this project goes before the Planning Commission and City Council for project review. Applicable goals and policies from the draft 2030 General Plan are shown above. For the purposes of this analysis the City has determined that the project will be evaluated assuming compliance with the City's current level of service (LOS) policy, which calls for LOS C on city streets versus the draft 2030 General Plan policy that reduces the LOS to D on city streets.

Level of service is a qualitative measure describing the operating condition of intersections, roadways and freeway facilities. LOS ranges from A through F, which represents driving conditions from best to worst, respectively. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions.

The City of Sacramento General Plan (October 1988) outlines the goals and policies that coordinate the transportation and circulation system with planned land uses. The General Plan (Goal D, Street and Road section) identifies LOS C as the goal for the city's local and major street system except at freeway ramp intersections, where the LOS goal varies depending on standards established by Caltrans. In addition, the General Plan smart growth principles identify the need for a balanced transportation system, including walkability and improved bicycle infrastructure. The current LOS C goal has been revised as part of the draft 2030 General Plan. The revised policy recognizes alternative mode opportunities, supports developments in infill areas and near transit stations.

The City's pedestrian friendly Street Standards (adopted in February 2004) provide guidelines on conceptual street standards to enhance and improve the pedestrian environment and encourage alternate mode use in the City of Sacramento. The key elements of the standards are listed below.

- Eliminate rolled curb
- Provide separated sidewalks on all streets
- Reduce widths of collector and arterial streets
- Reduce travel lane widths
- Add bike lanes to all new collector and arterial streets

For this analysis, intersections, roadways and elements of the freeway system were analyzed to determine LOS.

Signalized Intersections

The signalized intersections were analyzed using the methodology presented in the Highway Capacity Manual (2000 HCM), Transportation Research Board, 2000. This methodology determines the LOS at signalized intersections by comparing the average control delay per vehicle at the intersection to the thresholds shown in Table 5.9-10.

LOS DEFINITIONS FOR SIGNALIZED INTERSECTIONS	
LOS	Average Control Delay (seconds/vehicle)
A	≤ 10.0
B	10.1 – 20.0
C	20.1 – 35.0
D	35.1 – 55.0
E	55.1 – 80.0
F	> 80.0

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

Unsignalized Intersections

The unsignalized intersections were also analyzed using methods described in the 2000 HCM. This methodology reports the LOS using the control delay thresholds shown in Table 5.9-11. As described in the 2000 HCM, the LOS for all-way stop controlled intersections is based on the average control delay for the entire intersection. Conversely, for side-street stop-controlled intersections, the LOS is measured separately for each individual movement. To be consistent with both the 2000 HCM and the City's significance criteria, which are based on the average control delay for the intersection, both the average control delay and control delay for the worst-case movement are reported.

LOS DEFINITIONS FOR UNSIGNALIZED INTERSECTIONS	
LOS	Average Control Delay (seconds/vehicle)
A	< 10.0
B	10.1 – 15.0
C	15.1 – 25.0
D	25.1 – 35.0
E	35.1 – 50.0
F	> 50.0

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

A signal warrant analysis for each unsignalized study intersection was also conducted based on the peak hour volume warrant (*Traffic Manual*, Caltrans, 1996).

Freeway Facilities

Freeway mainline, ramp junctions, and off-ramp queues were analyzed using the 2000 HCM procedures. Ramp junctions are the key connection points between interchange ramps and the freeway mainline. The 2000 HCM defines LOS for ramp junctions based on the density of freeway traffic in the ramp junction influence area, as shown in Table 5.9-10. In some cases, ramp junctions between successive interchanges are connected by an auxiliary lane. This configuration is referred to as a weaving section and is analyzed for LOS using the same criteria defined in Table 5.9-12.

LOS	Density (passenger cars/mile/lane)
A	< 10.0
B	> 10 – 20
C	> 20 – 28
D	> 28 – 35
E	> 35 – 43 ¹
F	Demand exceeds capacity

Note:
 1. The maximum density for ramp junctions under LOS E is not defined in the HCM 2000. Fehr & Peers applies the maximum density of 43 identified for weaving sections in the HCM 2000.
 Source: Transportation Research Board, *Highway Capacity Manual*, 2000, and Fehr & Peers, 2006.

Roadway Segment Facilities

Roadway segments were analyzed for LOS using the daily volume thresholds, based on the roadway's functional classification and number of lanes, as defined in Table 5.9-13.

Operational Class	Number of Lanes	ADT Level-of-Service Capacity Threshold				
		A	B	C	D	E
Arterial – Low Access Control (Low access control roads generally have frequent driveways and 25-35 mph speeds)	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial – Moderate Access Control (Moderate access roads generally have limited driveways and 35-45 mph speeds)	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,000	37,800	43,200	48,600	54,000
Arterial – High Access Control (High access roads generally have no driveways and 45-55 mph speeds)	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Collector Street	2	5,250	6,125	7,000	7,875	8,750
Residential	2	3,000	3,500	4,000	4,500	5,000

Source: City of Sacramento, Department of Transportation staff, 2007.

Near-Term Conditions

The purpose of the following section is to evaluate the number of residential units in the proposed project that could be developed before the completion of the I-5/Cosumnes River Boulevard interchange, without triggering a significant impact. In the city of Sacramento, a significant traffic

impact occurs at a signalized or unsignalized intersection (except for freeway ramp/arterial intersections within North Natomas) when:

- The traffic generated by the project degrades the peak period level of service (LOS) from A, B, or C (without the project) to D, E, or F (with the project); or,
- The level of service (without the project) is D, E, or F and project-generated traffic increases the average vehicle delay by 5 seconds or more.

The evaluation addresses the following two development areas/potential access points:

- Delta Shores (West of I-5): access to Freeport Boulevard; and
- Delta Shores (East of I-5): access to Meadowview Road, 24th Street

Existing Plus Near-Term Projects

City staff identified two pending development projects for inclusion as “near-term” projects.

- Freeport Marketplace Commercial Project – located on the southeast corner of the Meadowview Road/Freeport Boulevard intersection. The project would include 35,900 square feet of retail shopping center uses.
- Somerset Subdivision Residential Project – located on the east side of Franklin Boulevard, just south of Cosumnes River Boulevard. The project would include 169 single family residential units.

The Freeport Marketplace Commercial project is projected to generate 90 trips during the AM peak hour and 210 trips during the PM peak hour. The Somerset Subdivision Residential project is projected to generate 130 trips during the AM peak hour and 170 trips during the PM peak hour. Figure 5.9-8 shows the projected traffic volumes at the study intersections with the addition of traffic generated by the baseline projects.

Table 5.9-14 shows service levels for the Existing plus Near-Term scenario for the nine study intersections. The analysis indicates that service levels would remain the same as for existing conditions for all but two of the study intersections.

- Meadowview Road/Freeport Boulevard – change from LOS C to D in PM peak hour
- Meadowview Road/Franklin Boulevard – change from LOS D to E in PM peak hour

DELTA SHORES PRE-INTERCHANGE SCENARIO PEAK HOUR TRIP GENERATION		
Phase 1 Development	Vehicle Trips	
	AM Peak Hour	PM Peak Hour
1. Delta Shores West – 490 single family homes	315	355
<small>Source: Fehr & Peers, 2007.</small>		

Near-Term Plus Pre-Interchange Scenario

One development area within the project was evaluated to determine the number of units that could be developed before the completion of the I-5/Cosumnes River Boulevard interchange.

- Delta Shores Western portion (access to Freeport Boulevard) – 490 single family units

The projected trip generation for the development area is summarized below and shown in Table 5.9-14, based on completion of 350 single family and 140 multi-family residential units. Trips were assigned to the roadway network according to the trip distribution discussed above. Figure 5.9-9 shows the projected traffic volumes at the study intersections with the addition of traffic generated by the near-term projects and the Pre-Interchange development area within the project site.

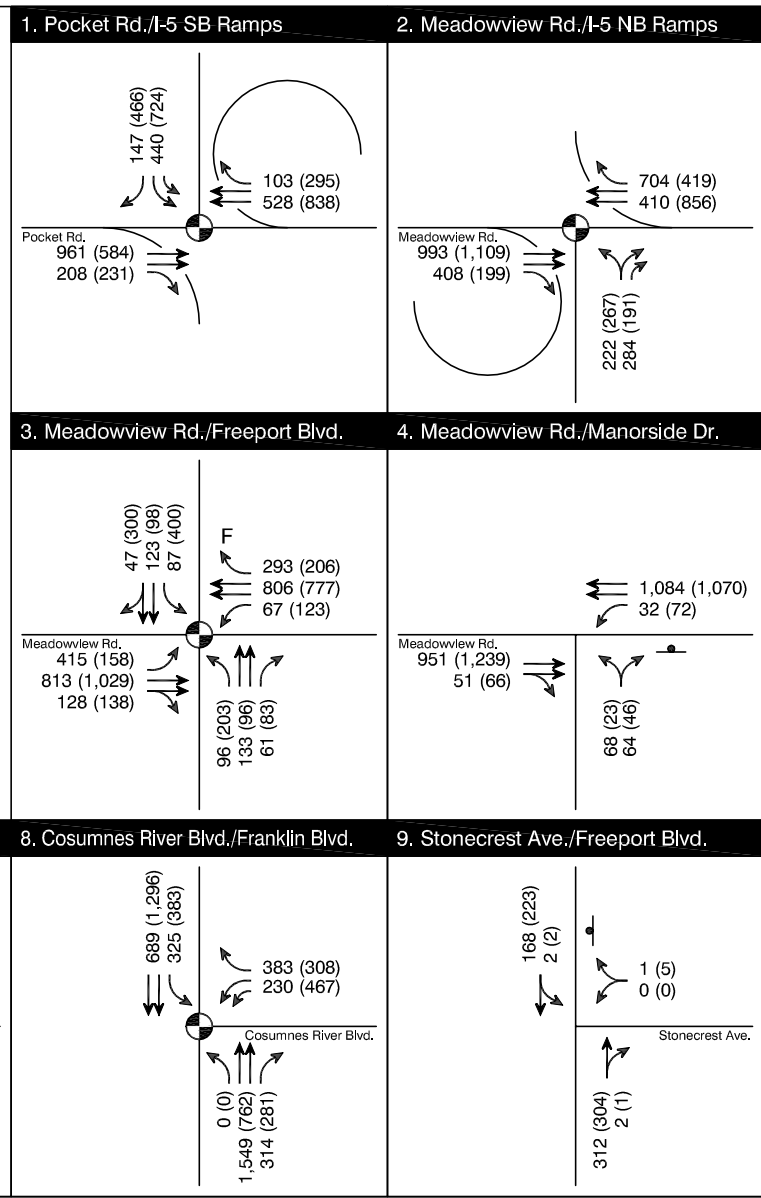
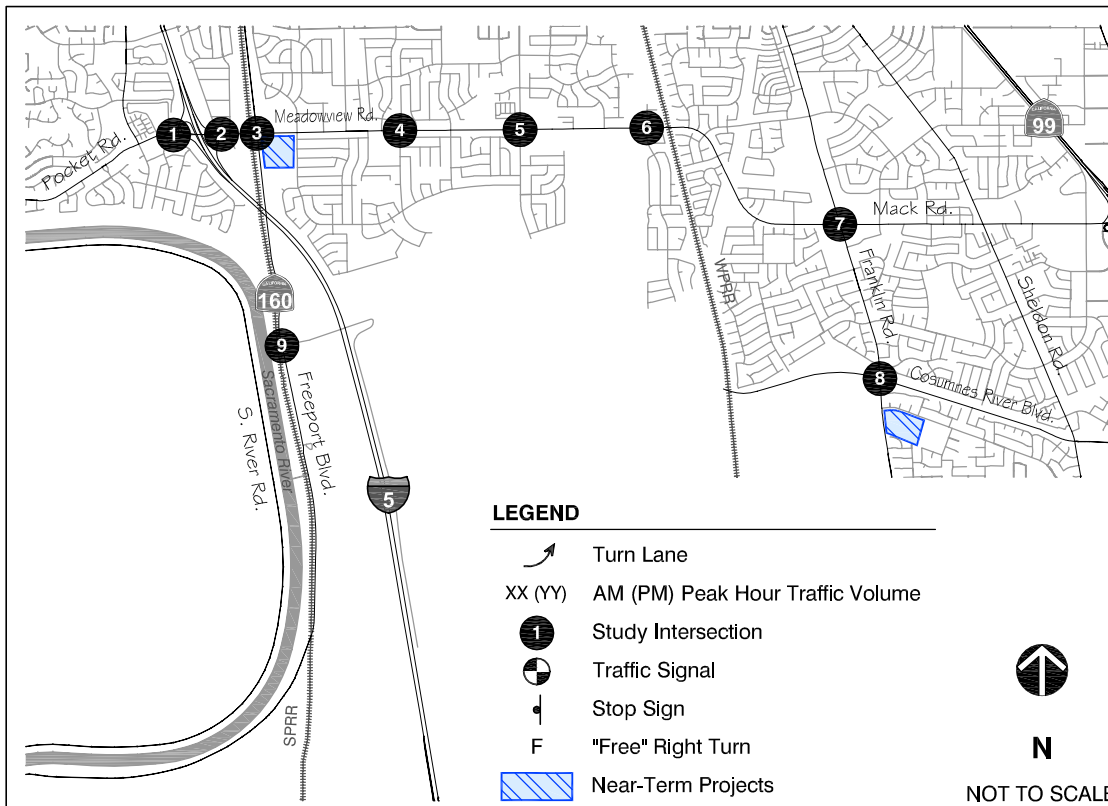
- Delta Shores Western portion – 315 AM trips, 355 PM trips

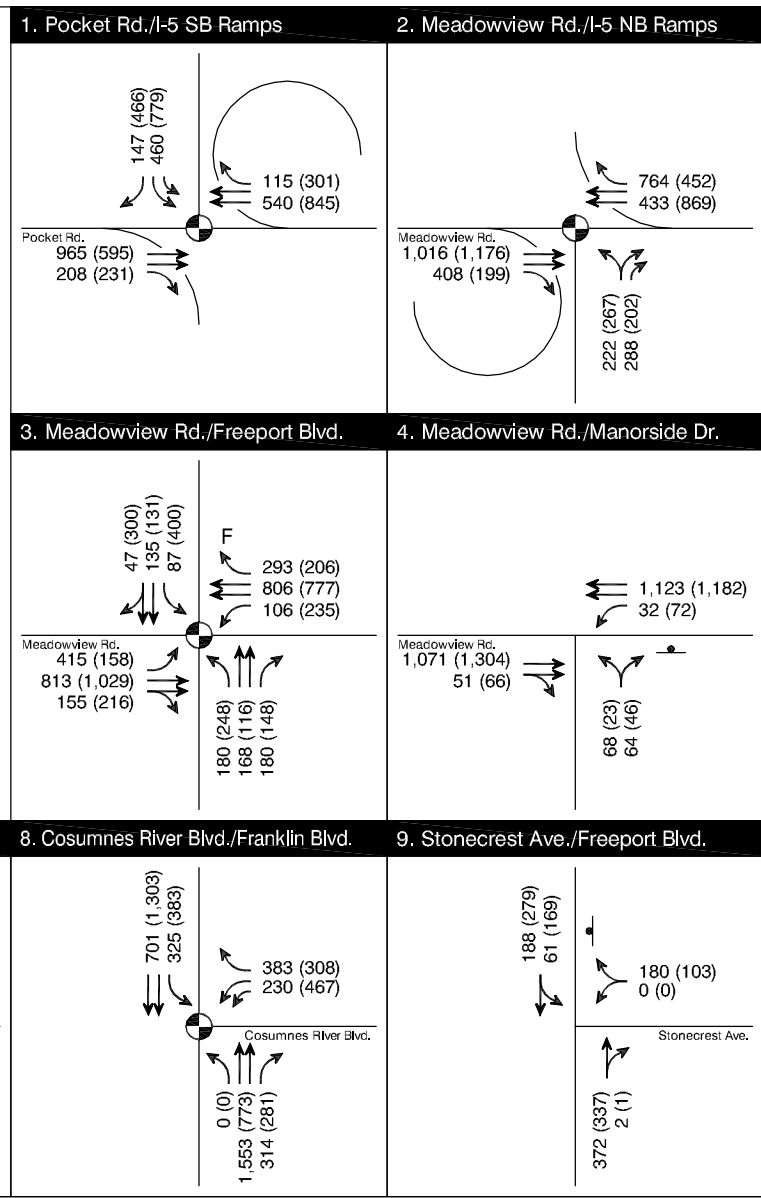
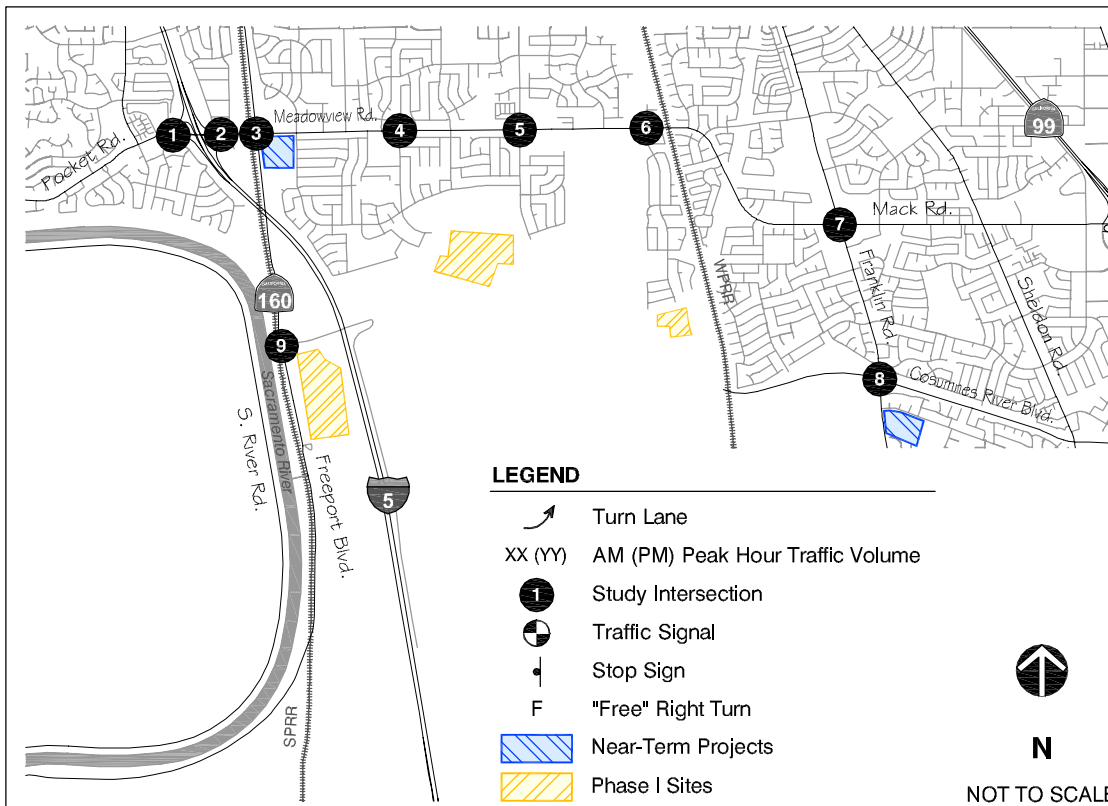
Table 5.9-15 shows service levels for the Existing plus Near-Term and Pre-Interchange Development scenario for the nine study intersections. Based on the City's current level of service standard (LOS C), significant impacts would occur at one of the study intersections when comparing conditions to the Near-Term scenario.

- Meadowview Road/Freeport Boulevard – change from LOS D to E in PM peak hour.

Intersection	Control	AM Peak Hour			PM Peak Hour		
		Existing	Near-Term ²	Near-Term Plus Pre-Interchange Scenario	Existing	Near-Term ²	Near-Term plus Pre-Interchange Scenario
1. Pocket Rd / I-5 SB Ramps	Signal	15 (B) ³	15 (B)	15 (B)	19 (B)	19 (B)	20 (C)
2. Meadowview Rd / I-5 NB Ramps	Signal	19 (B)	19 (B)	19 (B)	18 (B)	18 (B)	18 (B)
3. Meadowview Rd / Freeport Blvd	Signal	28 (C)	29 (C)	32 (C)	33 (C)	39 (D)	56 (E)
4. Meadowview Rd / Manorside Dr	TWSC ¹	24 (C)	25 (C)	30 (C)	21 (C)	23 (C)	25 (C)
5. Meadowview Rd / 24 th St	Signal	30 (C)	30 (C)	31 (C)	39 (D)	42 (D)	44 (D)
6. Meadowview Rd / Detroit Blvd	Signal	21 (C)	21 (C)	21 (C)	28 (C)	29 (C)	30 (C)
7. Mack Rd / Franklin Blvd	Signal	31 (C)	31 (C)	32 (C)	51 (D)	63 (E)	64 (E)
8. Franklin Blvd / Cosumnes River Blvd	Signal	38 (D)	41 (D)	41 (D)	26 (C)	26 (C)	26 (C)
9. Freeport Blvd / Stonecrest Ave	TWSC ¹	< 10 (A)	< 10 (A)	12 (B)	< 10 (A)	< 10 (A)	11 (B)

Notes: Bold indicates significant impacts.
 1. TWSC = Side-Street Stop Controlled Intersections.
 2. Near-term = Existing + Approved Projects
 3. Seconds of Delay (Level of Service); Level of Service for side-street stop controlled intersections is based on average delay for the worst movement, signalized intersections are based on weighted average delay.
 Source: Fehr & Peers, 2007.





The following improvements would reduce the significant impacts at the above intersection to a less-than-significant level.

- Meadowview Road/Freeport Boulevard – construct an exclusive eastbound right turn lane. The service level would improve from LOS E (56 seconds) to LOS D (41 seconds) in the PM peak hour.

The improvement at the intersection of Meadowview Road/Freeport Boulevard may be difficult given the challenge of acquiring right-of-way. An alternative approach would be to reduce land use within the development area. A total of 200 residential units could be constructed without generating significant near-term impacts at any of the study intersections.

Baseline Conditions

Several projects are approved or planned within the study vicinity that would increase traffic volumes on the roadways adjacent to the proposed project site. Traffic forecasts were developed for the “Baseline No Project” scenario to reflect the development of these projects and establish a baseline for analyzing the traffic impacts of the proposed project. Table 5.9-16 lists baseline projects identified by City of Sacramento staff.

BASELINE PROJECTS PEAK HOUR TRIP GENERATION		
Approved Development	Vehicle Trips	
	AM Peak Hour	PM Peak Hour
1. Freeport Marketplace Commercial Development	90	210
2. Somerset Subdivision Residential Project	130	170
3. Islands at Riverlake Residential Project	104	140
4. South Shopping Center Retail Project	48	211
5. Village Terrasa Residential Project	86	116
6. College Square Planned Unit Development	913	1,630
7. Kaiser South Sacramento Medical Center Expansion	453	559
8. Strawberry Creek Shopping Center Retail Project	277	477
Total Trips	2,100	3,513
Source: Fehr & Peers, 2007.		

The following roadway improvements were assumed in place under Baseline conditions:

- Cosumnes River Boulevard is extended from Franklin Boulevard to Freeport Boulevard.
- 24th Street is extended from its present southerly terminus to the above extension of Cosumnes River Boulevard.
- The I-5/Cosumnes River Boulevard Interchange is constructed, with traffic signals installed along Cosumnes River Boulevard at Freeport Boulevard, I-5 southbound ramps, and I-5 northbound ramps.
- A second eastbound left-turn lane is constructed at the Freeport Boulevard/Meadowview Road intersection

- An exclusive northbound right-turn lane is constructed at the Freeport Boulevard/ Meadowview Road intersection.

The baseline travel forecasts were developed using a two-step process. The first step involved reassigning existing trips, primarily along the Meadowview Road corridor, onto the Cosumnes River Boulevard and 24th Street extensions described above. This was accomplished by revising the 2005 base SACMET model to include the new roadway facilities described above. The forecasts developed using the 2005 base SACMET model, both with and without the new roadway facilities, were compared. The difference in volumes were then added to existing traffic counts to reflect the impact of the new roadway facilities. The traffic generated by the baseline projects listed in Table 5.9-13 was then added manually using a new TRAFFIX™ model developed for this study.

Baseline Plus Project Conditions

Figures 5.9-12A through 5.9-12D display the AM and PM peak hour turning movement forecasts for each study intersection under “baseline plus project” conditions. Figure 5.9-13 displays the AM and PM peak hour “Baseline Plus Project” traffic volumes for the study freeway facilities.

Analysis Results

The analysis methodologies and traffic forecasts discussed above were used to analyze traffic operations under Baseline conditions with and without the development of the proposed project.

Road Segments

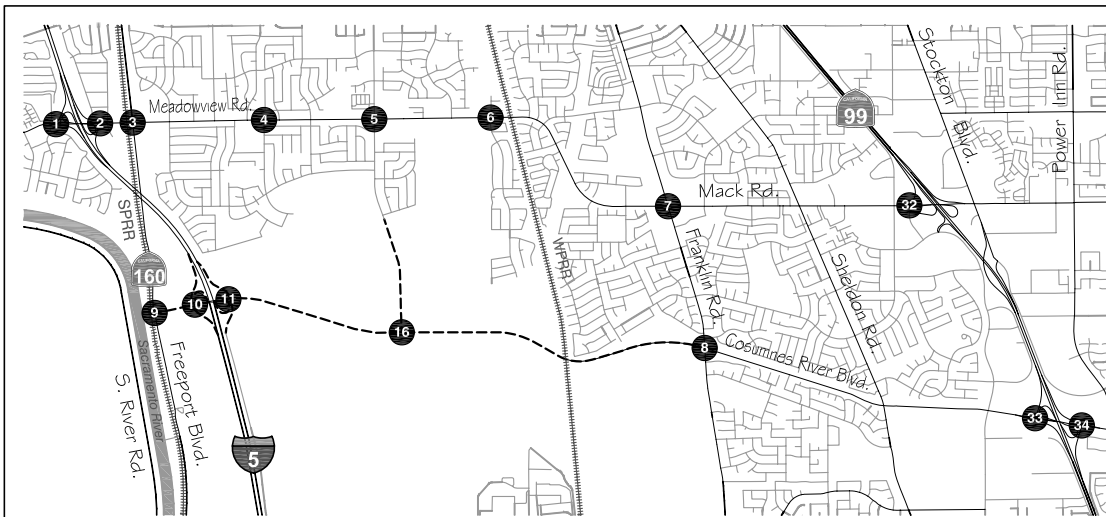
Table 5.9-17 shows the ADT volumes for the study roadway segments. The “Baseline Plus Project” roadway volumes reflect additional traffic generated by the proposed project. All segments operate at LOS C or better.

Figures 5.9-10A and 5.9-10B display the AM and PM peak hour traffic forecasts and lane configurations for each study intersection under “baseline no project” conditions. Figure 5.9-11 displays the AM and PM peak hour baseline traffic forecasts for the study freeway facilities.

Study Intersections

Table 5.9-18 presents the AM and PM peak hour traffic operations at each study intersection under baseline conditions. As shown in the table below, the following intersections operate at LOS D, E, or F under baseline conditions:

- ***Meadowview Road/Freeport Boulevard*** operates at LOS D during the PM peak hour with the development of the proposed project. The addition of project traffic results in a significant impact at this location.
- ***Meadowview Road/24th Street*** operates at LOS D during the AM peak hour and PM peak hour with the development of the proposed project. The addition of project traffic results in a significant impact at this location.



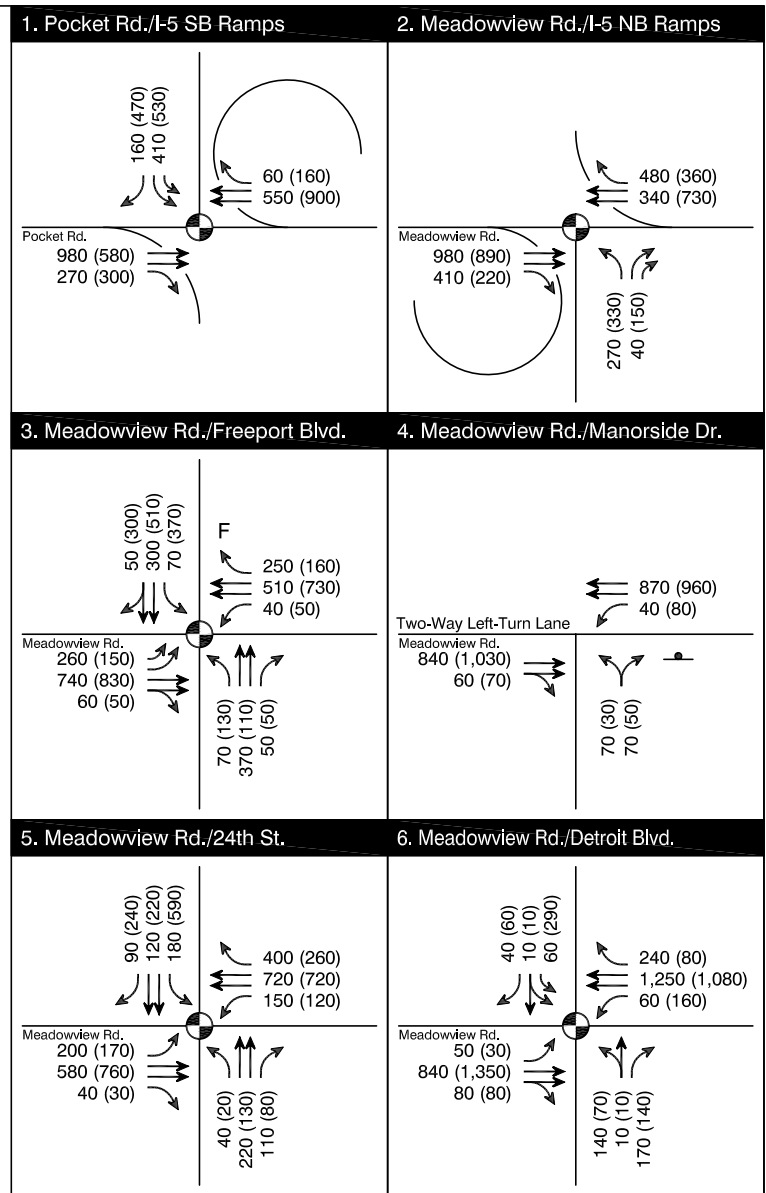
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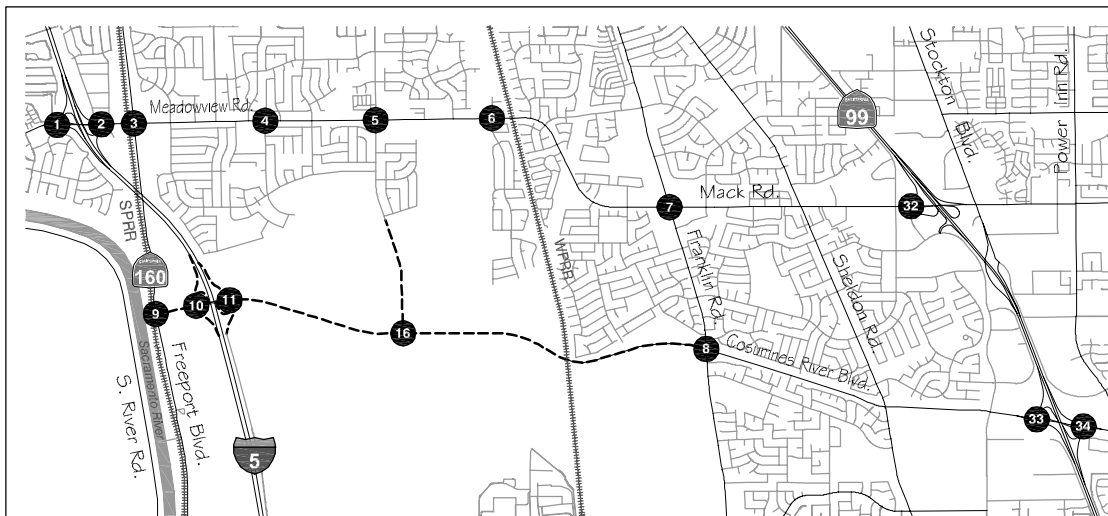
- Turn Movement
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Study Intersection
- Traffic Signal
- Stop Sign
- "Free" Right Turn
- Future Road



N

NOT TO SCALE





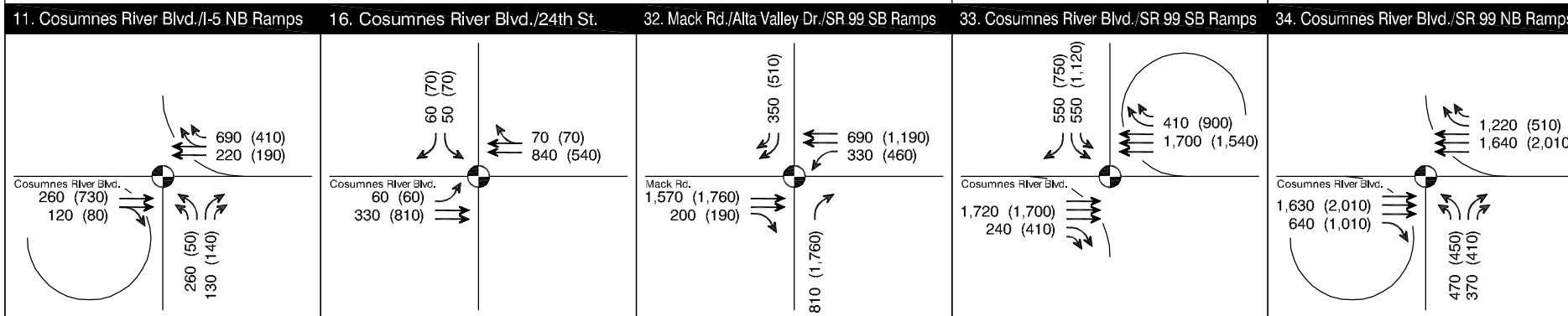
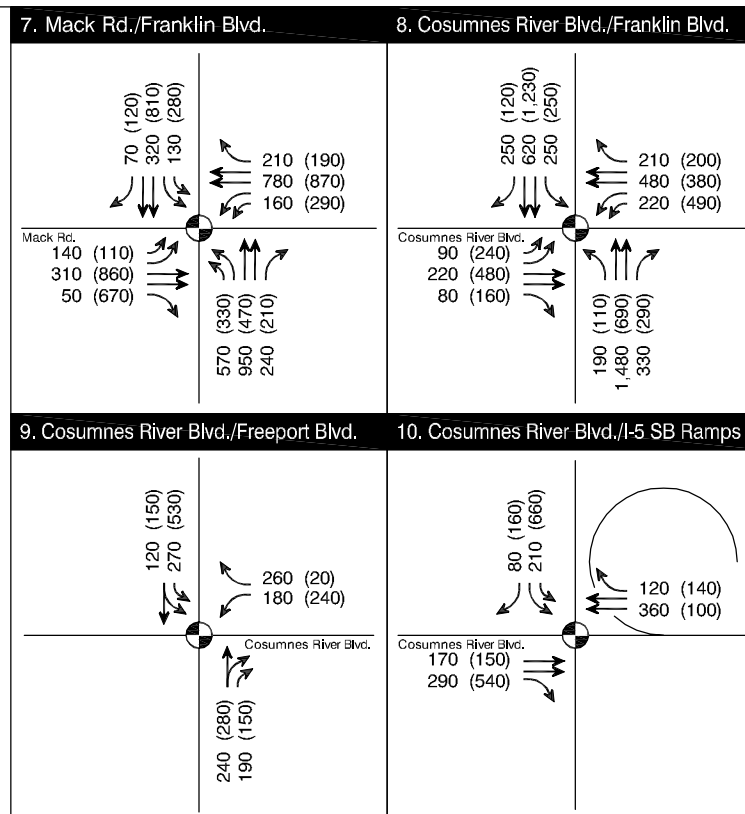
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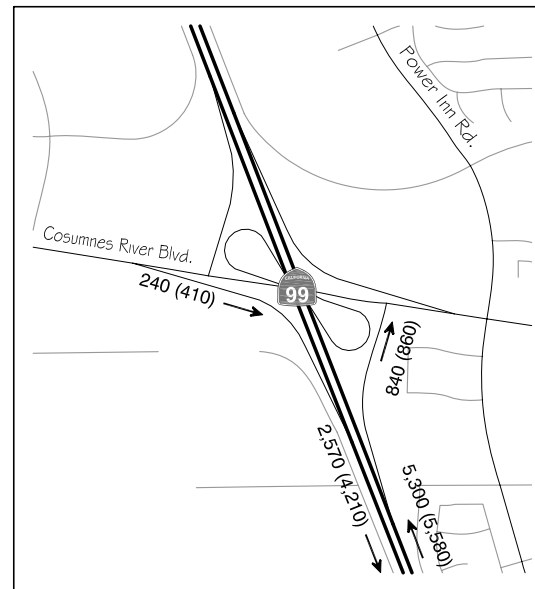
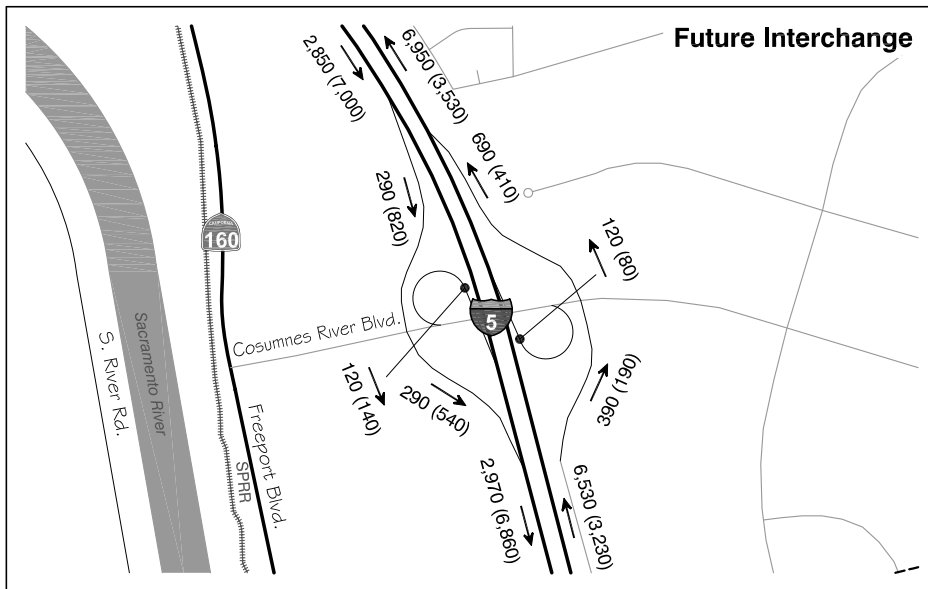
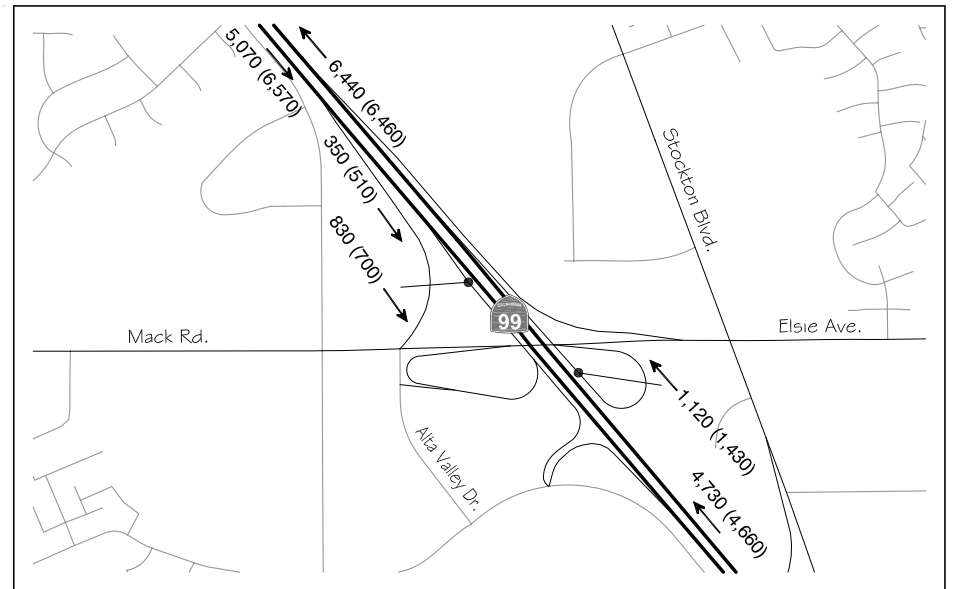
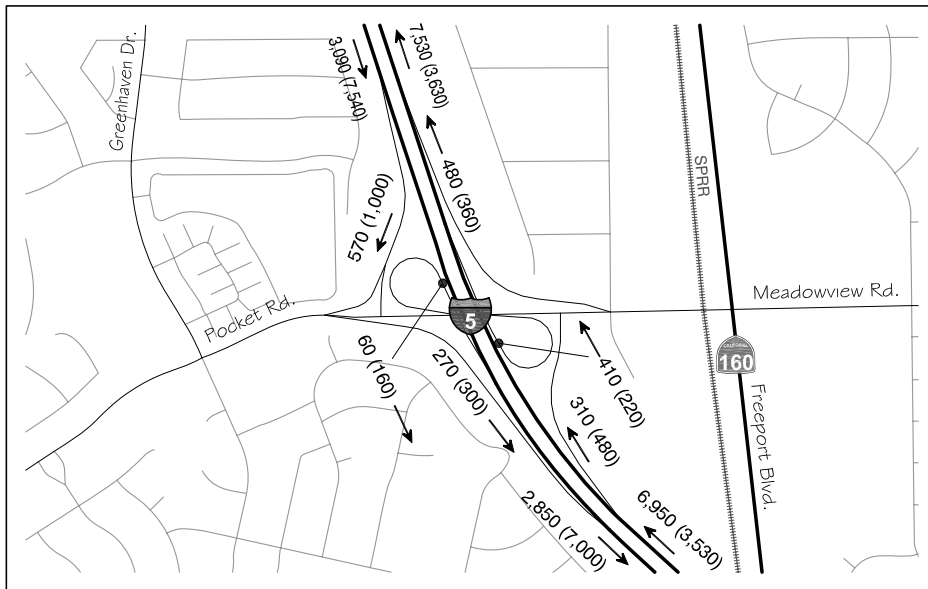
- Turn Movement
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Study Intersection
- Traffic Signal
- Future Road



N

NOT TO SCALE





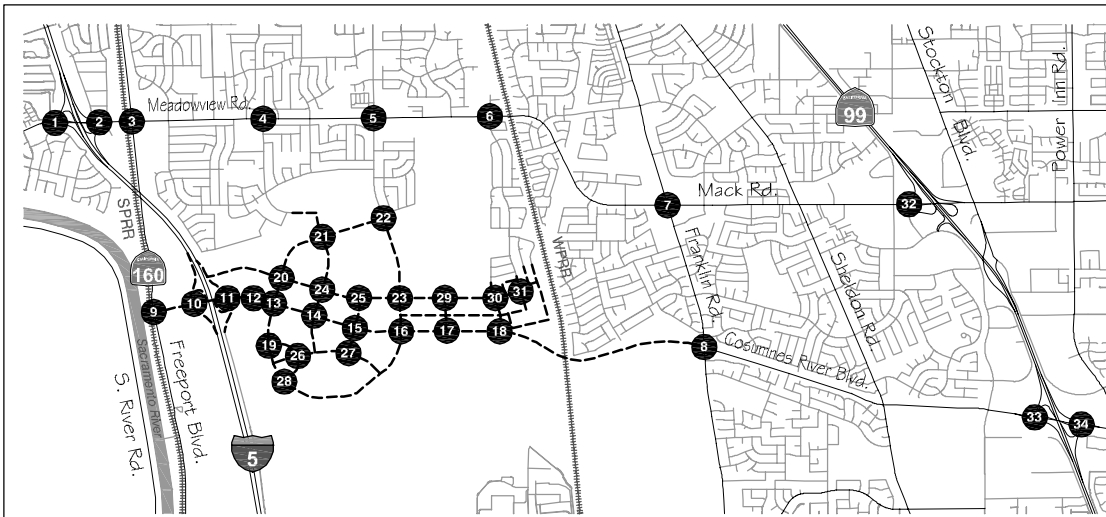
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- Travel Direction
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Future Road



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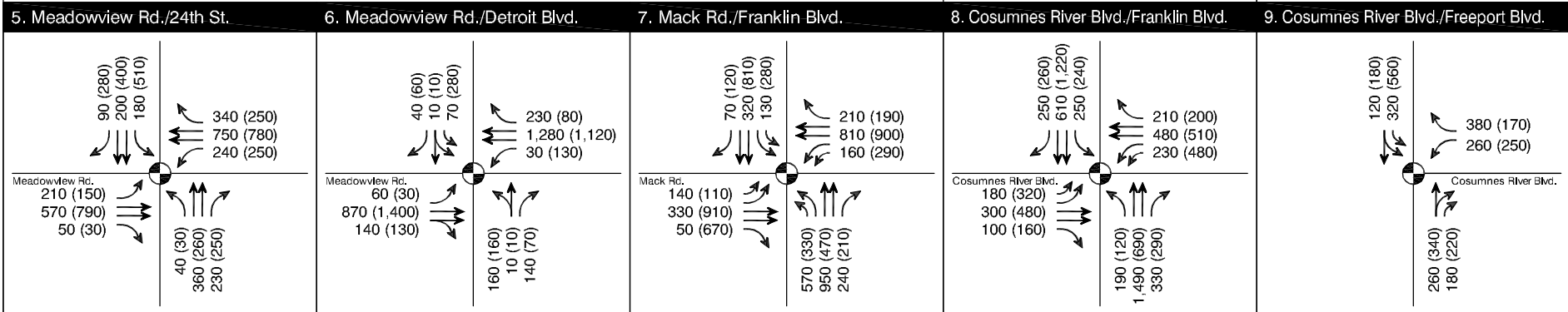
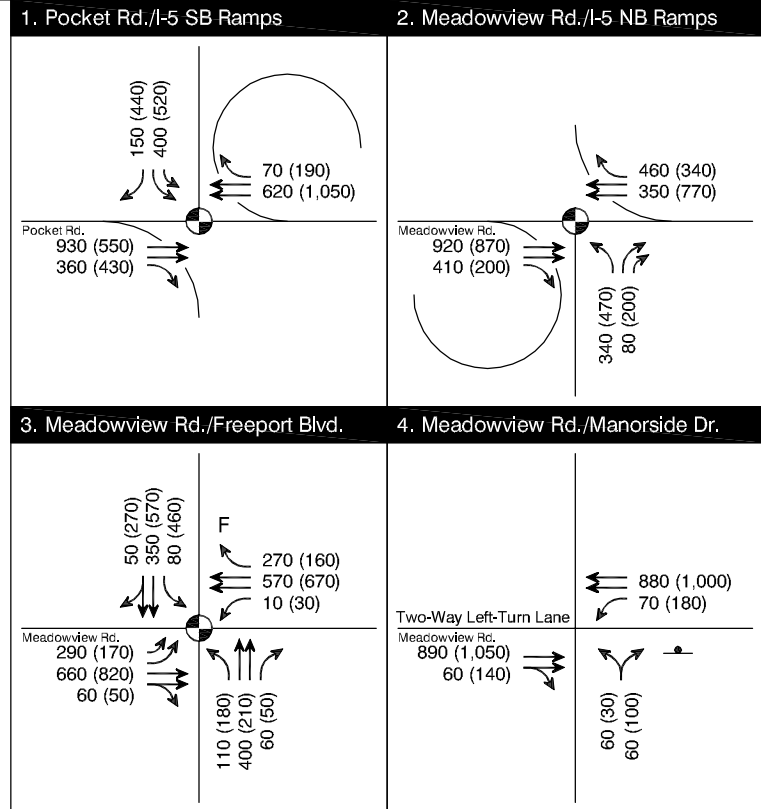
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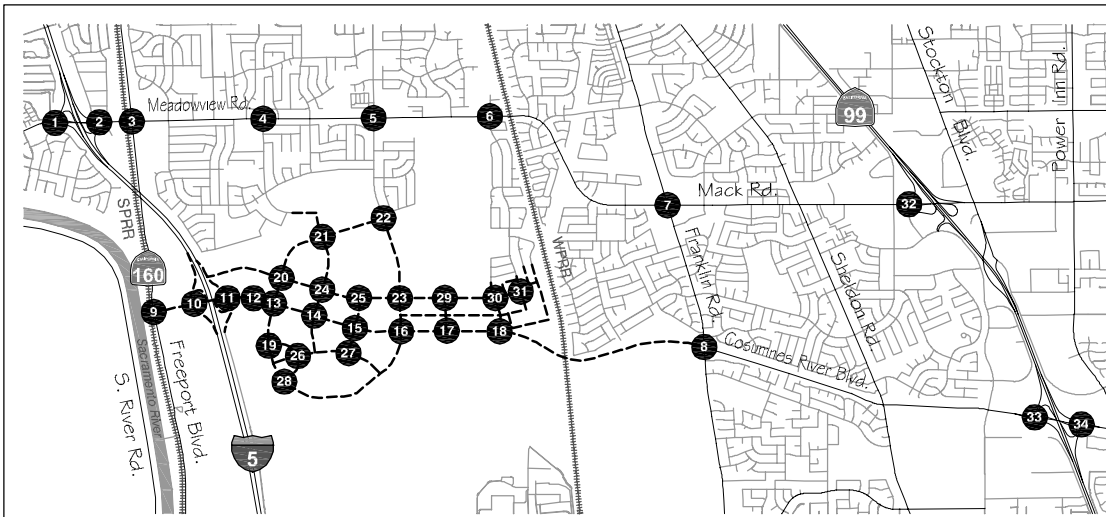


LEGEND

- Turn Movement
- Traffic Signal
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Stop Sign
- Future Road
- N
- "Free" Right Turn

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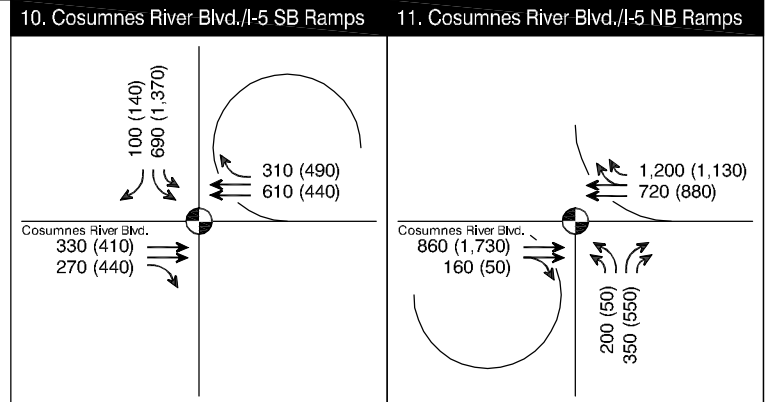
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- Stop Sign
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Study Intersection
- OVL Overlap Phasing
- Future Road



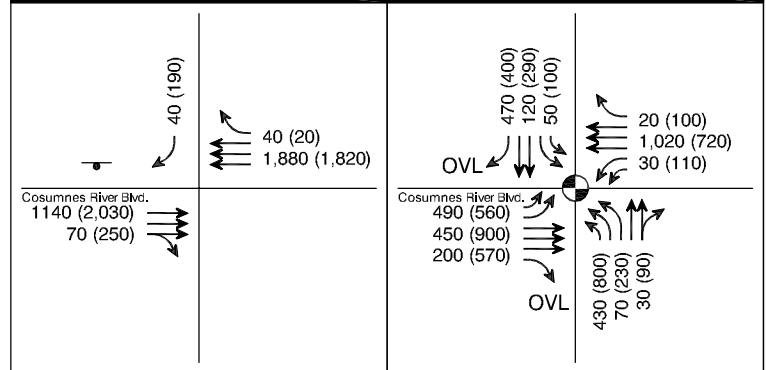
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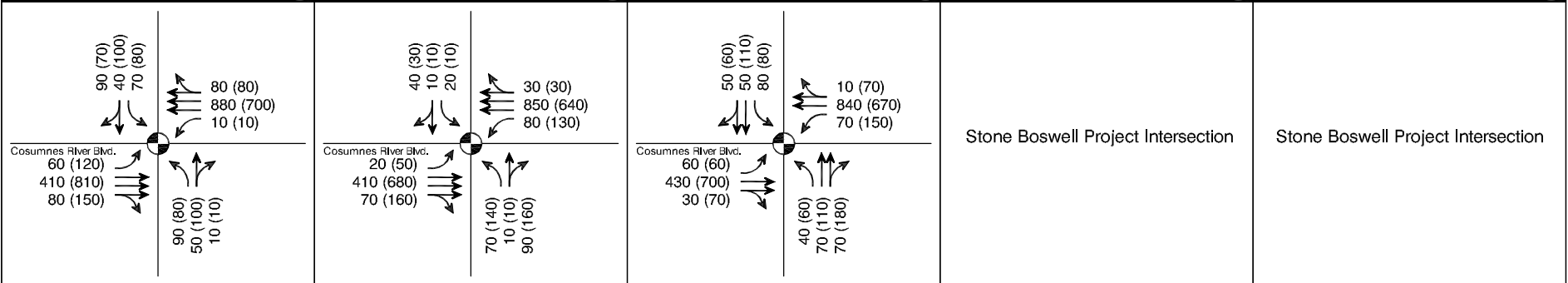
10. Cosumnes River Blvd./I-5 SB Ramps **11. Cosumnes River Blvd./I-5 NB Ramps**

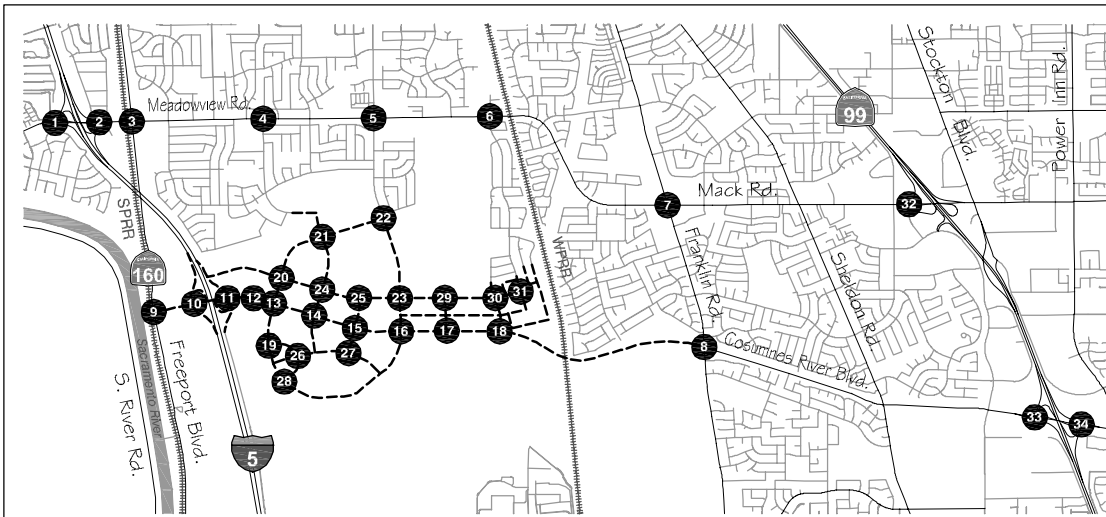


12. Cosumnes River Blvd./Driveway **13. Cosumnes River Blvd./Delta Shores Cir.**



14. Cosumnes River Blvd./Street A **15. Cosumnes River Blvd./Street B** **16. Cosumnes River Blvd./24th St.** **17. Cosumnes River Blvd./D Dr.** **18. Cosumnes River Blvd./E Dr.**



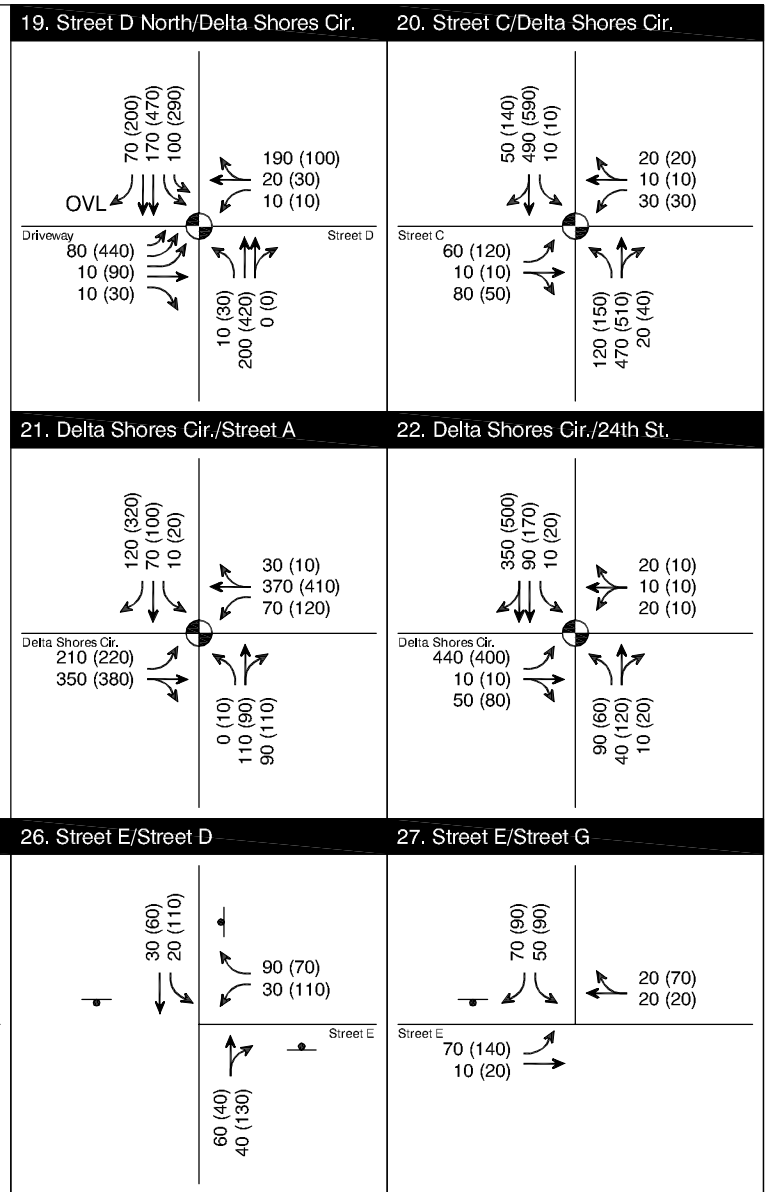


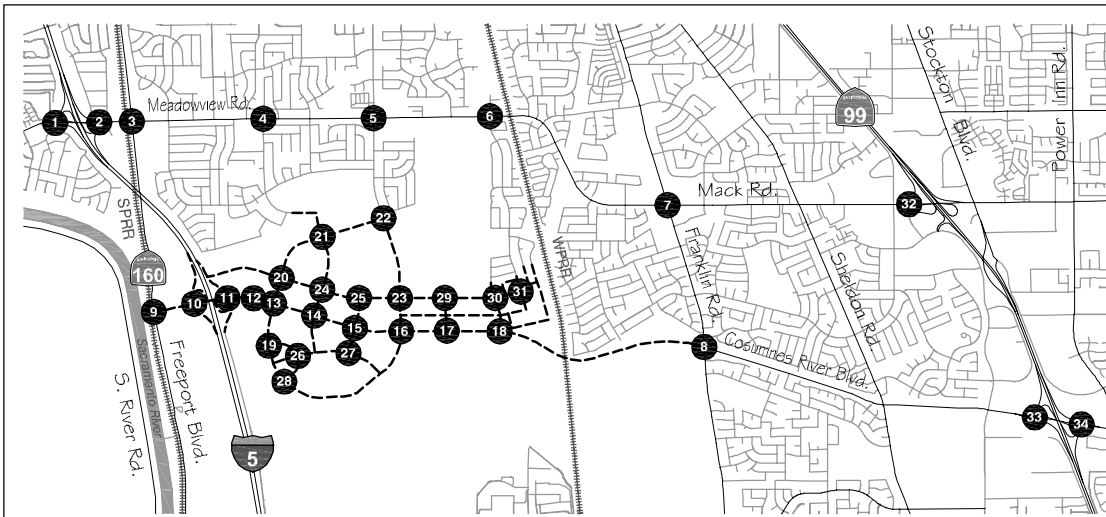
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- Turn Movement
- Stop Sign
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Study Intersection
- OVL Overlap Phasing
- Future Road



NOT TO SCALE





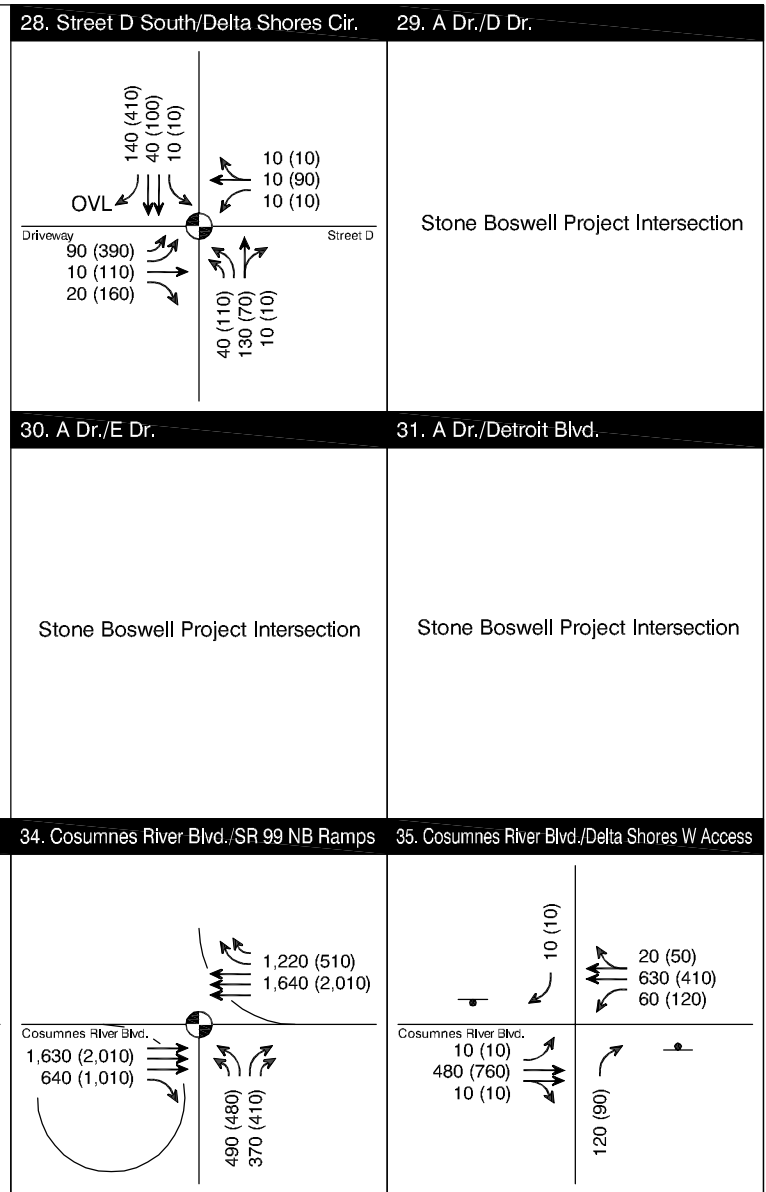
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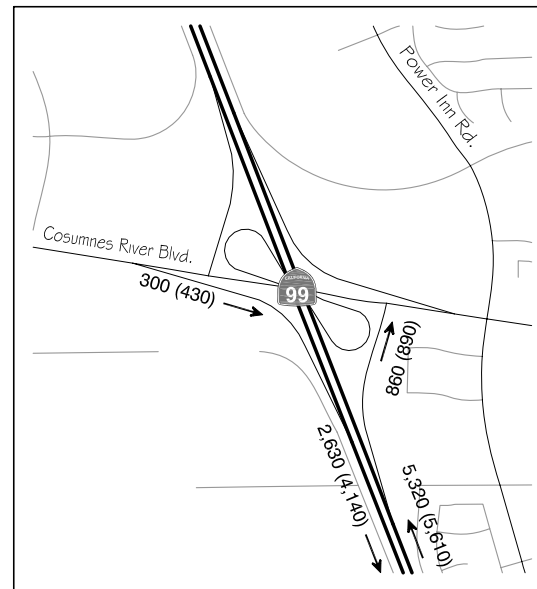
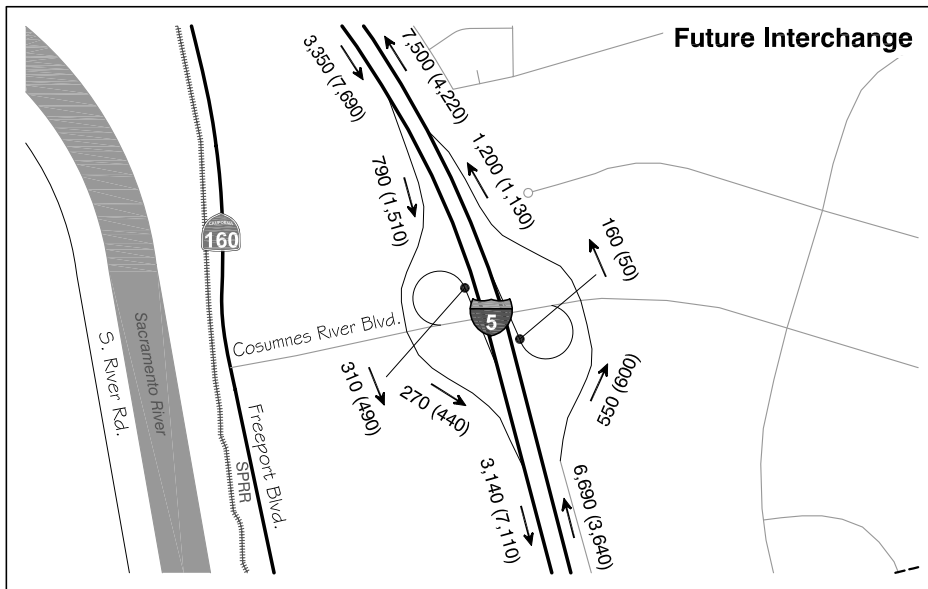
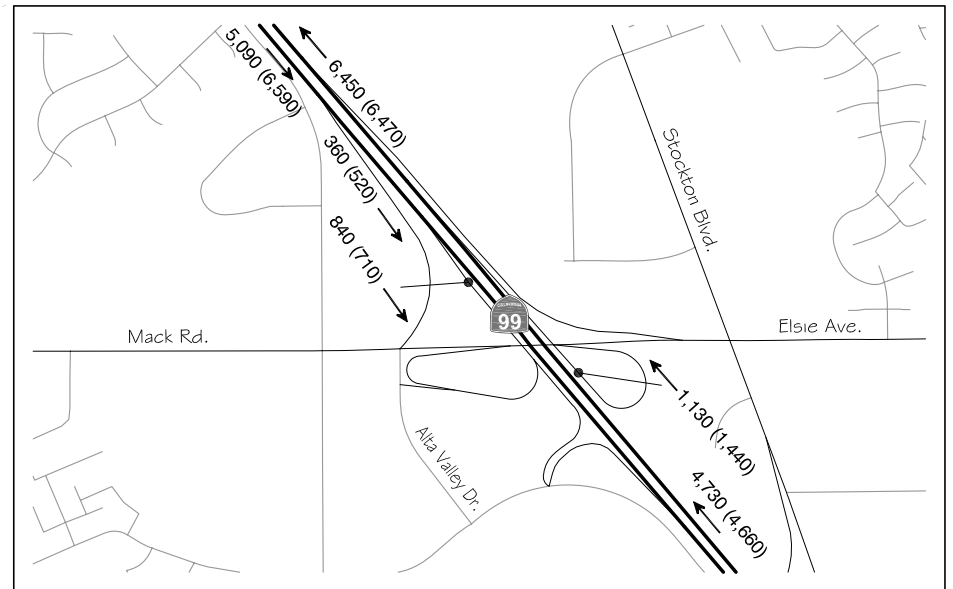
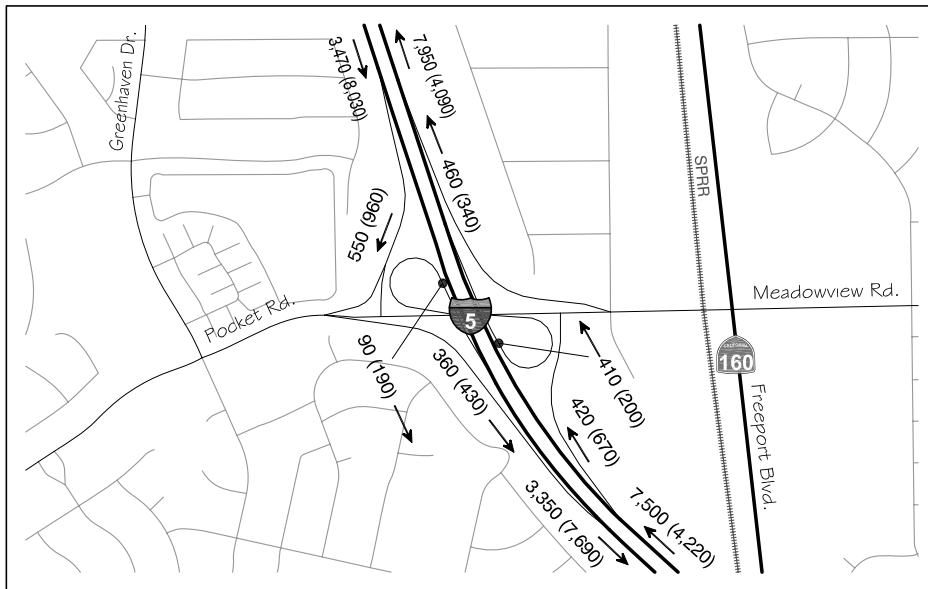
- Turn Movement
- Stop Sign
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Study Intersection
- Traffic Signal
- OVL Overlap Phasing
- Future Road



N

NOT TO SCALE





LEGEND

- Travel Direction
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Future Road



N

NOT TO SCALE

TABLE 5.9-17

ROADWAY ADT VOLUMES – BASELINE CONDITIONS

Roadway Segment		Lanes	Daily Traffic Volumes					
			Baseline			Baseline & Project		
			Volume	V/C	LOS	Volume	V/C	LOS
Cosumnes River Blvd	Freeport Blvd to I-5	4A-H	9500	0.24	A	12000	0.30	A
	I-5 to Delta Shores Circle	6A-H	14800	0.25	A	43000	0.72	B
	Delta Shores Circle to Street A	6A-H	14800	0.25	A	20000	0.33	A
	Street A to Street B	6A-H	14800	0.25	A	17000	0.28	A
	Street B to 24 th Street	6A-H	14800	0.25	A	17000	0.28	A
	24 th Street to D Drive	4A-H	14900	0.37	A	18000	0.45	A
	D Drive to E Drive	4A-H	14900	0.37	A	18000	0.45	A
Street C	Delta Shores Circle to 24 th St	2C	-	-	-	1000	0.11	A
	24 th St to Detroit to E Dr	2C	-	-	-	-	-	-
Street D	Delta Shores Circle to Street E	2C	-	-	-	4000	0.46	A
Street E	Street D to Delta Shores Circle	2C	-	-	-	5000	.057	A
Freeport Blvd	North of Cosumnes River Blvd	2A-H	9500	0.48	A	12100	0.61	B
	South of Cosumnes River Blvd	2A-H	8200	0.41	A	9900	0.50	A
Delta Shores Circle	North of Cosumnes River Blvd	4A-M	-	-	-	16000	0.44	A
	South of Cosumnes River Blvd	4A-M	-	-	-	21000	0.58	A
Street A	North of Cosumnes River Blvd	2C	-	-	-	6000	0.69	B
	South of Cosumnes River Blvd	2C	-	-	-	5000	0.57	A
24 th Street	North of Cosumnes River Blvd	4A-M	2700	0.08	A	4900	0.14	A
	South of Cosumnes River Blvd	4A-M	-	-	-	7000	0.19	A
Manorside Dr. – South of Meadowview Rd		2C	2600	0.30	A	4800	0.55	A
Detroit Blvd – South of Meadowview Rd		2C	5800	0.66	B	6200	0.71	C
Street G – Cosumnes River Blvd to Street E		2C	-	-	-	6000	0.69	B
Street B – Cosumnes River Blvd to Street C		2C	-	-	-	1000	0.11	A
D Drive – Cosumnes River Blvd to Street C		2C	-	-	-	-	-	-
E Drive – Cosumnes River Blvd to Street C		2C	-	-	-	-	-	-

Source: Fehr & Peers, 2007.

TABLE 5.9-18

INTERSECTION OPERATIONS – BASELINE CONDITIONS

Intersection	Control	"Baseline No Project"				"Baseline Plus Project"			
		AM Peak		PM Peak		AM Peak		PM Peak	
		LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay
1. Pocket Rd/I-5 SB Ramps	Signalized	B	13.0	B	15.4	B	12.9	B	14.8
2. Pocket Rd/I-5 NB Ramps	Signalized	B	14.6	B	18.5	B	17.5	C	22.3
3. Meadowview Rd/Freeport Bl	Signalized	C	25.9	C	29.8	C	30.0	D	35.5
4. Meadowview Rd/Manorside Dr	TWSC	A	<10	A	<10	A	<10	A	<10
		C	21.9	C	20.9	C	22.7	D	26.2
5. Meadowview Rd/24 th St	Signalized	C	31.1	D	39.3	D	36.1	D	51.0
6. Meadowview Rd/Detroit Bl	Signalized	C	21.1	C	27.9	C	20.6	C	27.9
7. Mack Rd/Franklin Blvd	Signalized	C	31.8	D	46.9	C	32.0	D	46.7
8. Cosumnes River Bl/Franklin Bl	Signalized	C	31.4	D	36	C	33.8	D	36.6
9. Cosumnes River Bl/Freeport Bl	Signalized	B	18.1	C	33.1	B	18.9	C	27.0
10. Cosumnes River Bl/I-5 SB Ramps	Signalized	A	5.7	B	10.9	B	11.8	B	16.4
11. Cosumnes River Bl/I-5 NB Ramps	Signalized	A	6.9	A	3.5	B	11.2	B	16.8
12. Cosumnes River Bl/Retail Access	TWSC	-	-	-	-	A	<10	A	<10
		-	-	-	-	A	<10	A	<10
13. Cosumnes River Bl/Delta Shores	Signalized	-	-	-	-	C	28.3	C	32.6
14. Cosumnes River Bl/Street A	Signalized	-	-	-	-	C	24.5	C	25.5
15. Cosumnes River Bl/Street B	Signalized	-	-	-	-	B	19.6	C	26.1
16. Cosumnes River Bl/24 th Street	Signalized	A	7.6	A	7.8	C	20.6	C	24.2
17. Cosumnes River Bl/D Drive	Signalized	-	-	-	-	-	-	-	-
18. Cosumnes River Bl/E Drive	Signalized	-	-	-	-	-	-	-	-
19. Delta Shores Circle/Street D north	Signalized	-	-	-	-	B	19.9	C	28.7
20. Delta Shores Circle/Street C	Signalized	-	-	-	-	C	21.4	C	25.0
21. Delta Shores Circle/Street A	Signalized	-	-	-	-	C	30.0	C	34.2
22. Delta Shores Circle/24 th Street	Signalized	-	-	-	-	C	32.6	C	31.8
23. Street C/24 th Street	TWSC	-	-	-	-	A	<10	A	<10
		-	-	-	-	A	<10	A	<10
24. Street C/Street A	TWSC	-	-	-	-	A	<10	A	<10
		-	-	-	-	B	12.2	B	14.6
25. Street C/Street B	TWSC	-	-	-	-	A	<10	A	<10
		-	-	-	-	A	<10	A	<10
26. Street E/Street D	AWSC	-	-	-	-	A	<10	A	<10
27. Street E/Street G	TWSC	-	-	-	-	A	<10	A	<10
		-	-	-	-	A	<10	B	11.3
28. Delta Shores Circle/Street D south	Signalized	-	-	-	-	C	22.6	C	26.9
29. A Drive/D Drive	TWSC	-	-	-	-	-	-	-	-
30. A Drive/E Drive	TWSC	-	-	-	-	A	<10	A	<10
31. Detroit Boulevard/A Drive	AWSC	-	-	-	-	-	-	-	-
32. Mack R/I-5 SB Ramp/Alta Valley	Signalized	A	9.6	C	25.3	A	9.7	C	26.3
33. Cosumnes River Bl/SR 99 SB Ramps	Signalized	C	23.2	C	28.3	C	23.3	C	28.5
34. Cosumnes River Bl/SR 99 NB Ramps	Signalized	B	11.5	B	12.7	B	14.1	B	13.7
35. Cosumnes River Bl/Delta Shores West Access	TWSC	-	-	-	-	A	<10	A	<10
		-	-	-	-	A	<10	B	10.5

Notes:

For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle. For side-street stop intersections, the delay and LOS for the worse individual movement is shown below the average intersection delay and LOS.

LOS = level of service; TWSC=side street stop control; AWSC=all-way stop control.

Shaded areas indicate LOS D, E, or F operations based on average delay. Bold indicates an increase in delay of more than 5 seconds.

Source: Fehr & Peers, 2007.

- **Mack Road/Franklin Boulevard** operates at LOS D during the PM peak hour with the development of the proposed project. The addition of project traffic results in a change in delay of less than five seconds, and thus does not create a significant impact at this location.
- **Cosumnes River Boulevard/Franklin Boulevard** operates at LOS D during the PM peak hour with the development of the proposed project. The addition of project traffic results in a change in delay of less than five seconds, and thus does not create a significant impact at this location.

The peak hour traffic volume warrant was analyzed for each unsignalized study intersection under baseline conditions. The Meadowview Road/Manorside Drive intersection meets the peak hour warrant for a traffic signal.

- **Meadowview Road/Manorside Drive** met the peak hour signal warrant under existing conditions and therefore, also meets the warrant under “baseline no project” and “baseline plus project” conditions.

Freeway Mainline Segments, Ramp Merge/Diverge, and Off-Ramp Queue Lengths

Tables 5.9-19 and 5.9-20 present the AM and PM peak hour traffic operations for each study freeway facility under Baseline conditions with and without the development of the proposed project. Although the ramp merge/diverge areas operate at LOS E or better conditions during the peak hours, LOS F operations are identified in locations where the freeway mainline is operating over capacity. According to the 2000 HCM, if the freeway mainline is over capacity, then the merge/diverge area should also be reported at LOS F.

- **I-5/Pocket Road Interchange: Northbound Loop On-Ramp** operates at LOS F during the AM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- **I-5/Pocket Road Interchange: Northbound Slip On-Ramp** operates at LOS F during the AM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- **I-5/Pocket Road Interchange: Southbound Off-Ramp** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- **I-5/Pocket Road Interchange: Southbound Loop On-Ramp** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- **I-5/Pocket Road Interchange: Southbound Slip On-Ramp** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- **I-5/Cosumnes River Boulevard Interchange: Northbound Off-Ramp** operates at LOS F during the AM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- **I-5/ Cosumnes River Boulevard Interchange: Northbound Loop On-Ramp** operates at LOS F during the AM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.

TABLE 5.9-19

RAMP JUNCTION OPERATIONS – BASELINE CONDITIONS

Intersection	Merge/ Diverge/ Weaving	“Baseline No Project”				“Baseline Plus Project”			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Density ¹	LOS	Density ¹	LOS	Density ¹	LOS	Density ¹	LOS
<i>I-5/Pocket Rd Interchange</i>									
NB off-Ramp	Diverge	48.9	F	26.8	C	54.3	F	30.8	D
NB Loop on-Ramp	Merge	44.9	F	20.7	C	48.8	F	23.2	C
NB Slip on-Ramp	Merge	50.7	F	24.3	C	54.5	F	26.7	C
SB off-Ramp	Diverge	24.6	C	54.7	F	26.6	C	59.6	F
SB Loop on-Ramp	Merge	17	B	42.9	F	19.6	B	47.9	F
SB Slip on-Ramp	Merge	18.9	B	44.8	F	21.8	C	50.9	F
<i>I-5/Cosumnes River Boulevard</i>									
NB off-Ramp	Diverge	32.5	F	9.1	A	34.1	F	11.5	B
NB Loop on-Ramp	Merge	34.2	F	16.2	B	34.6	F	16	B
NB Slip on-Ramp	Merge	38.2	F	17.8	B	42.7	F	23.5	C
SB off-Ramp	Diverge	7	A	37.2	F	9.9	A	44.1	F
SB Loop on-Ramp	Merge	16.3	B	37.5	F	17.8	B	40.3	F
SB Slip on-Ramp	Merge	14.4	B	37.6	F	15.3	B	39.9	F
<i>SR 99/Mack Road Interchange</i>									
NB Loop on-Ramp	Merge	22.5	C	23.8	C	22.5	C	23.8	C
SB off-Ramp	Diverge	25.7	C	23.5	C	25.8	C	23.6	C
<i>SR 99/Cosumnes River Boulevard</i>									
NB off-Ramp	Diverge	42.8	E	44.1	F	43	E	44.3	F
SB Slip on-Ramp	Merge	23.8	C	30	D	24.3	C	30.1	D

Note:
1. Density reported in passenger cars per mile per lane.
Source: Fehr & Peers, 2007.

TABLE 5.9-20

FREEWAY MAINLINE OPERATIONS – BASELINE CONDITIONS

Freeway Facilities	Segment	Direction of Travel	“Baseline No Project”				“Baseline Plus Project”			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Density ¹	LOS	Density ¹	LOS	Density ¹	LOS	Density ¹	LOS
I-5	North of Meadowview Rd	North	>45	F	21.6	C	>45	F	24.3	C
		South	18.3	C	>45	F	20.6	C	>45	F
I-5	North of Cosumnes River Blvd	North	>45	F	21	C	>45	F	25.1	C
		South	B	16.9	>45	F	19.9	C	>45	F
I-5	North of Laguna Blvd	North	>45	F	19.2	C		F	21.6	C
		South	17.6	B	>45	F	18.6	C	>45	F
SR 99	North of Mack Rd	North	24.8	C	25.3	C	24.9	C	25.4	C
		South	25.7	C	23.5	C	25.8	C	23.6	C
SR 99	South of Cosumnes River Blvd	North	44.2	E	>45	F	44.6	E	>45	F
		South	19.9	C	26	C	20.4	C	26.1	D

Note:
1. Density reported in passenger cars per mile per lane.
Source: Fehr & Peers, 2007.

- ***I-5/ Cosumnes River Boulevard Interchange: Northbound Slip On-Ramp*** operates at LOS F during the AM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.

- ***I-5/ Cosumnes River Boulevard Interchange: Southbound Off-Ramp*** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- ***I-5/ Cosumnes River Boulevard Interchange: Southbound Loop On-Ramp*** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- ***I-5/ Cosumnes River Boulevard Interchange: Southbound Slip On-Ramp*** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- ***SR 99/Cosumnes River Boulevard Interchange: Northbound Off-Ramp*** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- ***I-5 Mainline North of Meadowview Road: Northbound*** operates at LOS F during the AM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- ***I-5 Mainline North of Meadowview Road: Southbound*** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- ***I-5 Mainline North of Cosumnes River Boulevard: Northbound*** operates at LOS F during the AM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- ***I-5 Mainline North of Cosumnes River Boulevard: Southbound*** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- ***I-5 Mainline North of Laguna Boulevard: Northbound*** operates at LOS F during the AM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- ***I-5 Mainline North of Laguna Boulevard: Southbound*** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.
- ***SR 99 Mainline South of Cosumnes River Boulevard: Northbound*** operates at LOS F during the PM peak hour under both the Baseline No Project and Baseline Plus Project scenarios.

Table 5.9-21 presents the queues for each freeway off-ramp during the AM and PM peak hours. It shows that peak hour queues at the off-ramps for the study interchanges do not extend back into the freeway mainline of I-5 or SR 99.

Cumulative Conditions

The currently approved version of the SACMET travel demand forecasting model was used to develop traffic forecasts under “Cumulative No Project” and “Cumulative Plus Project” conditions. The version of the model used for the study was the subject of a focused sub-area validation, which validated for on-ramp traffic along I-5. The current version of the SACMET model includes a year 2032 land use forecast. Both the 2005 and 2032 SACMET models were refined within the study

TABLE 5.9-21

FREEWAY OFF-RAMP VEHICLE QUEUING – BASELINE CONDITIONS

Intersection/Off-Ramp	Turn Movement	Storage Length (feet)	“Baseline No Project” Vehicle Queue ¹		“Baseline Plus Project” Vehicle Queue ¹	
			AM Peak	PM Peak	AM Peak	PM Peak
I-5 SB Ramps/Cosumnes River Boulevard	SB Left Turn	700	100 feet	200 feet	225 feet	425 feet
	SB Right Turn	700	75 feet	50 feet	75 feet	100 feet
I-5 NB Ramps/Cosumnes River Boulevard	NB Left Turn	1,260	100 feet	50 feet	125 feet	50 feet
	NB Right Turn	1,260	75 feet	50 feet	125 feet	225 feet
I-5 SB Ramps/Pocket Road	SB Left Turn	930	275 feet	325 feet	275 feet	350 feet
	SB Right Turn	930	25 feet	25 feet	25 feet	25 feet
I-5 NB Ramps/Pocket Road	NB Left Turn	830	350 feet	450 feet	425 feet	575 feet
	NB Right Turn	830	50 feet	125 feet	75 feet	150 feet
SR 99 SB Ramp/Mack Road	SB Right Turn	1,230	275 feet	575 feet	275 feet	600 feet
SR 99 NB Ramp/Cosumnes River Blvd.	NB Left Turn	1,120	375 feet	425 feet	350 feet	350 feet
	NB Right Turn	1,120	325 feet	450 feet	275 feet	350 feet

Note:
1. Queues for I-5/Cosumnes River Boulevard interchange based on average maximum vehicle queue. Queues for other interchanges based on 95th percentile queue.
Source: Fehr & Peers, 2007.

area. The roadway network and land use assumptions contained in the model and the resulting traffic forecasts are presented below.

The Cumulative No Project scenario assumes no development on either the project site or the adjacent Stone-Boswell property. The Cumulative Plus Project scenario assumes development of both the Delta Shores and Stone-Boswell projects. The project applicant for the Stone Boswell project has withdrawn their development application from the City. However, the City still anticipates future development of this site to include a mix of residential and retail/office uses; therefore, the analysis still assumes development on this site.

Roadway Network

The 2005 SACMET model was refined to reflect the existing roadway network within the project vicinity. The 2032 SACMET model was updated to reflect Tier 1 (fully funded) roadway improvement projects identified in the SACOG 2006 Metropolitan Transportation Plan. The planned roadway improvements within the project vicinity are listed in Table 5.9-22. As shown in the table, the 2032 SACMET model reflects the planned South Sacramento Phase 2 and 3 light rail transit extensions.

The following planned roadway improvements were also assumed in place under cumulative conditions based on discussions with City staff.

- Extension of Cosumnes River Boulevard from Franklin Road to Freeport Boulevard; and
- Extension of 24th Street south to Cosumnes River Boulevard.

The I-5/Cosumnes River Boulevard interchange improvement was also assumed.

Location	Project Description	Year
I-5	Add carpool lanes from downtown Sacramento to Florin Road	2014
I-5 at Cosumnes Interchange	Construct new interchange	2009
Cosumnes River Blvd	Extend Cosumnes River Blvd from Franklin Rd to Freeport Blvd.	2009
Cosumnes River Blvd	Widen to 4 lanes from Franklin Blvd. to Center Pkwy.	2014
Bruceville Rd	Widen to 6 lanes from Sheldon Rd to Cosumnes River Blvd.	2014
South Sacramento LRT – Phase 2 Extension	Construct a light rail extension from Meadowview Road to Cosumnes River College	2010
South Sacramento LRT – Phase 3 Extension	Construct a light rail extension from Cosumnes River College to Elk Grove	2019
Source: Tier 1 roadway improvements identified in 2006 <i>Metropolitan Transportation Plan</i> , Sacramento Area Council of Governments, 2006.		

Land Uses

For “2032 Cumulative No Project” conditions, no development was assumed to occur on the project site. The proposed land uses and roadway network for both the project and Stone-Boswell project were added to the 2032 SACMET model to develop “Cumulative Plus Project” conditions.

Stone Boswell Project Characteristics

The Cumulative Plus Project scenario assumes development of both the project and the Stone-Boswell project. The proposed Stone Boswell project would consist of residential, retail, and school uses as follows. Figure 5.9-14 displays the proposed site plan for the Stone Boswell project.

- 1,500 Residential dwelling units
 - 353 single-family residential units
 - 1,147 multi-family residential units
- 42,000 square-feet of Commercial/Retail uses
 - 32,000 square-feet of neighborhood retail center
 - 10,000 square-feet of mixed use retail center
- 500 student High School

The Stone Boswell project would generate approximately 12,700 net new daily trips, 875 net new AM peak hour trips, and 1,130 net new PM peak hour trips. As noted previously, the project applicant for the Stone Boswell project has withdrawn their development application from the City. However, the City anticipates development of residential and commercial/retail uses on this site in the future comparable to those uses set forth in the last Stone Boswell project developer’s land use plan.

Traffic Forecasts

The SACMET model was compiled for 2005, “2032 No Project”, and “2032 Plus Project” conditions. Cumulative year forecasts were developed using the base conditions (2005) version of the model.

The “difference method” was applied to adjust the raw forecasts. Specifically, the 2032 raw model volumes were adjusted to reflect the growth in traffic between the 2005 and 2032 models. The growth in traffic was added to existing traffic counts to yield “2032 no project” and “2032 Plus Project” traffic forecasts. Figure 5.9-15A and 5.9-15B displays the AM and PM peak hour “2032 no project” traffic forecasts at the study intersections and Figure 5.9-16 displays the traffic forecasts for the freeway facilities under no project conditions. Figures 5.9-17A through 5.9-17D display the “2032 plus project” traffic forecasts at the study intersections and Figure 5.9-18 displays the forecasts for the study freeway facilities.

Analysis Results

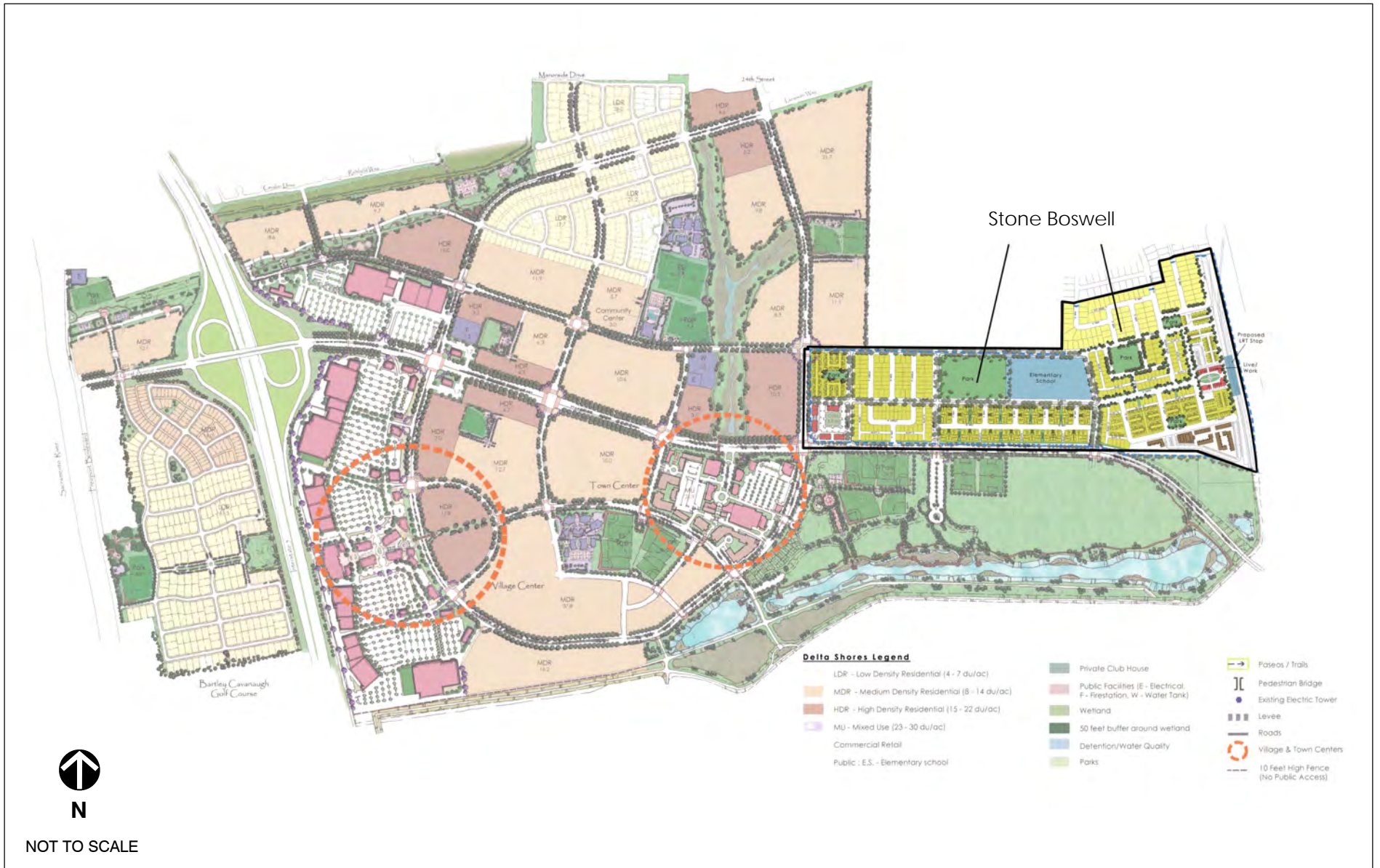
The analysis methodologies and traffic forecasts discussed above were used to analyze traffic operations under cumulative conditions with and without the development of the proposed project.

Road Segments

The ADT volumes for the study roadway segments under cumulative conditions are presented in Table 5.9-23.

Roadway Segment		Lanes	Daily Traffic Volumes					
			Cumulative			Cumulative & Project		
			Volume	V/C	LOS	Volume	V/C	LOS
Cosumnes River Blvd	Freeport Blvd to I-5	4A-H	16000	0.40	A	19000	0.48	A
	I-5 to Delta Shores Circle	6A-H	23000	0.38	A	54000	0.90	D
	Delta Shores Circle to Street A	6A-H	23000	0.38	A	31000	0.52	A
	Street A to Street B	6A-H	23000	0.38	A	27000	0.45	A
	Street B to 24 th Street	6A-H	23000	0.38	A	28000	0.47	A
	24 th Street to D Drive	4A-H	25000	0.63	B	27000	0.68	B
Street C	D Drive to E Drive	4A-H	25000	0.63	B	25000	0.63	B
	Delta Shores Circle to 24 th St	2C	-	-	-	2000	0.23	A
Street D	24 th St to Detroit to E Dr	2C	-	-	-	6000	0.69	B
	Delta Shores Circle to Street E	2C	-	-	-	4000	0.46	A
Street E	Street D to Delta Shores Circle	2C	-	-	-	5000	.057	A
	Freeport Blvd	2A-H	13000	0.65	B	14000	0.70	B
Delta Shores Circle	South of Cosumnes River Blvd	2A-H	15000	0.75	C	16000	0.80	C
	North of Cosumnes River Blvd	4A-M	-	-	-	15000	0.42	A
Street A	South of Cosumnes River Blvd	4A-M	-	-	-	20000	0.56	A
	North of Cosumnes River Blvd	2C	-	-	-	5000	0.57	A
24 th Street	South of Cosumnes River Blvd	2C	-	-	-	5000	0.57	A
	North of Cosumnes River Blvd	4A-M	10000	0.28	A	10200	0.29	A
Manorside Dr. – South of Meadowview Rd	South of Cosumnes River Blvd	4A-M	-	-	-	8000	0.22	A
	North of Cosumnes River Blvd	2C	2000	0.23	A	4000	0.46	A
Detroit Blvd – South of Meadowview Rd	2C	12000	1.37	F	13000	1.49	F	
Street G – Cosumnes River Blvd to Street E	2C	-	-	-	6000	0.69	B	
Street B – Cosumnes River Blvd to Street C	2C	-	-	-	1000	0.11	A	
D Drive – Cosumnes River Blvd to Street C	2C	-	-	-	6000	0.69	B	
E Drive – Cosumnes River Blvd to Street C	2C	-	-	-	8000	0.91	E	

Source: Fehr & Peers, 2007.



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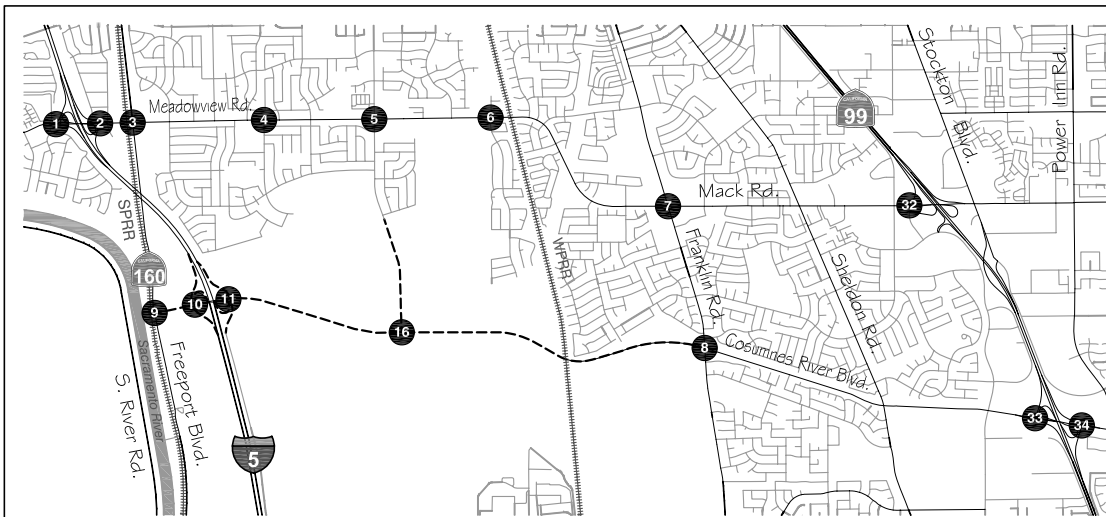


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**PROJECT SITE PLAN -
DELTA SHORES AND STONE BOSWELL**

FIGURE 14



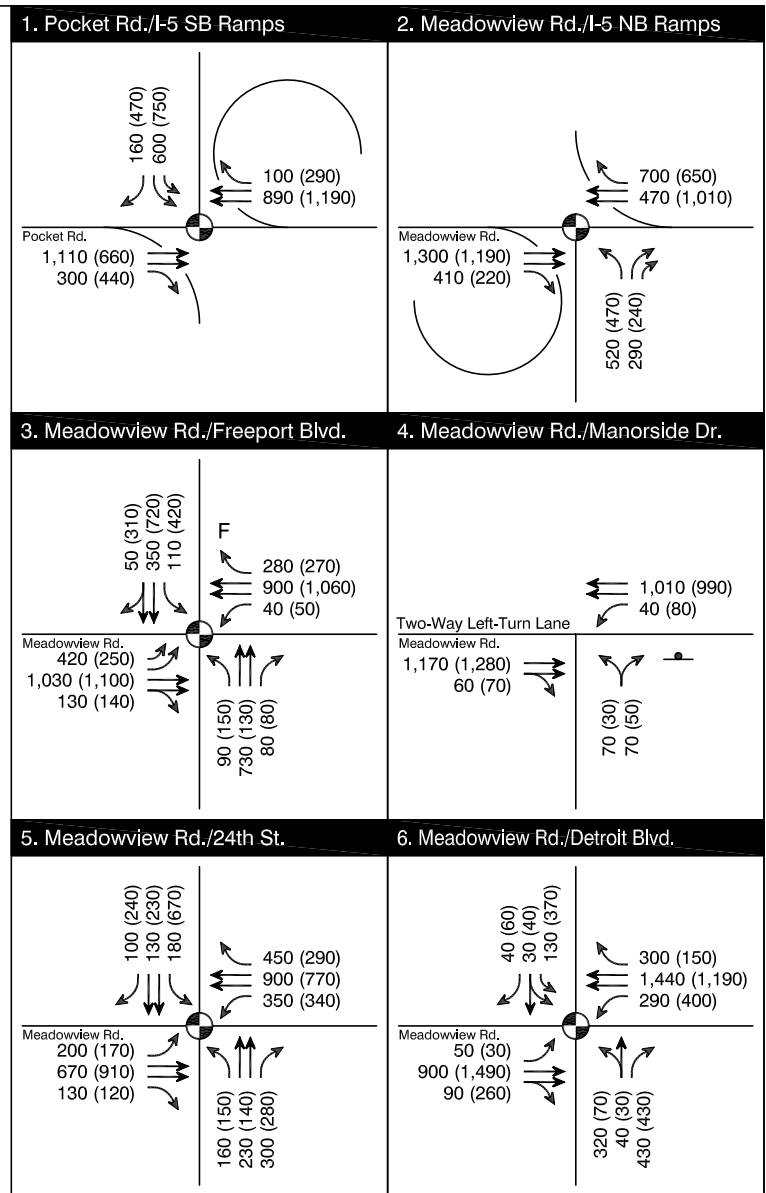
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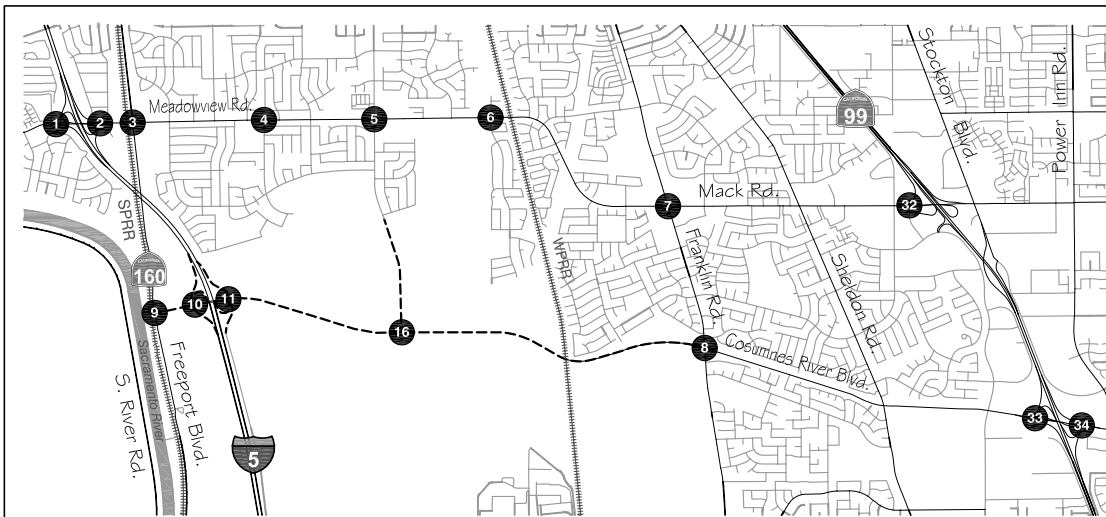
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- XX (YY) AM (PM) Peak Hour Traffic Volume
- Study Intersection
- Traffic Signal
- Stop Sign
- "Free" Right Turn
- Future Road



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NOT TO SCALE





LEGEND

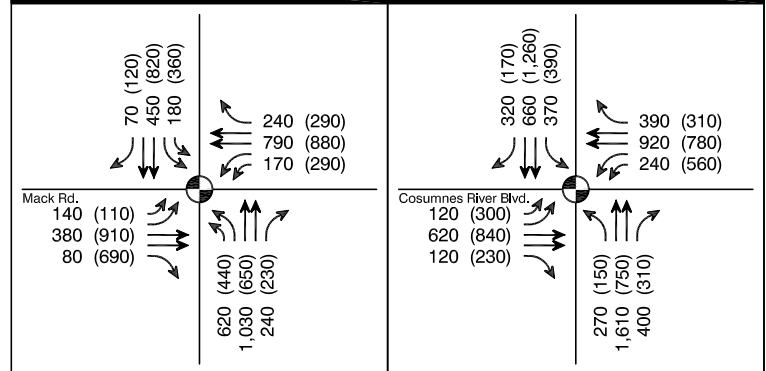
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- XX (YY) AM (PM) Peak Hour Traffic Volume
- Study Intersection
- Traffic Signal
- Future Road



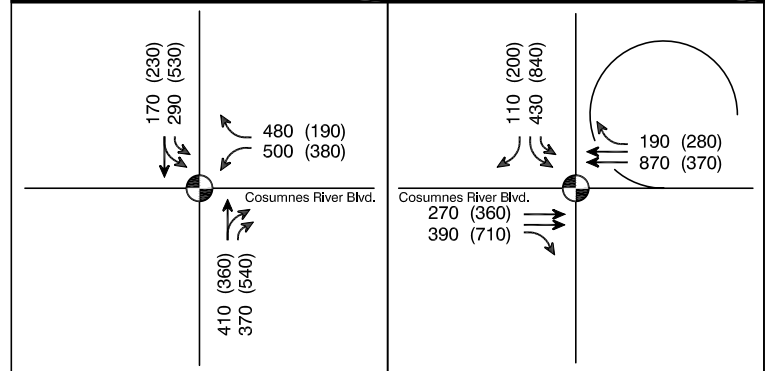
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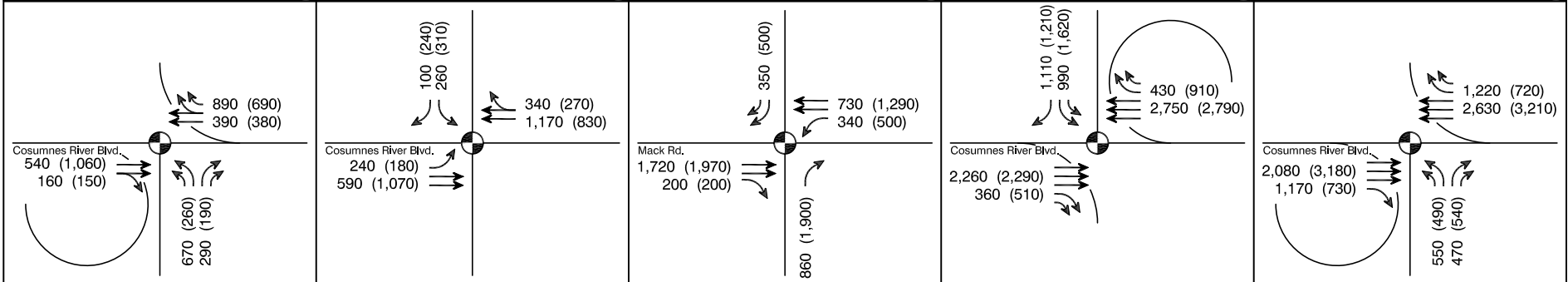
7. Mack Rd./Franklin Blvd. **8. Cosumnes River Blvd./Franklin Blvd.**

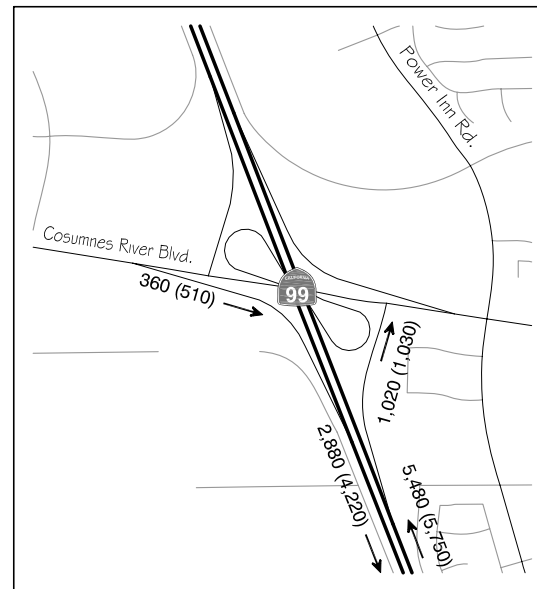
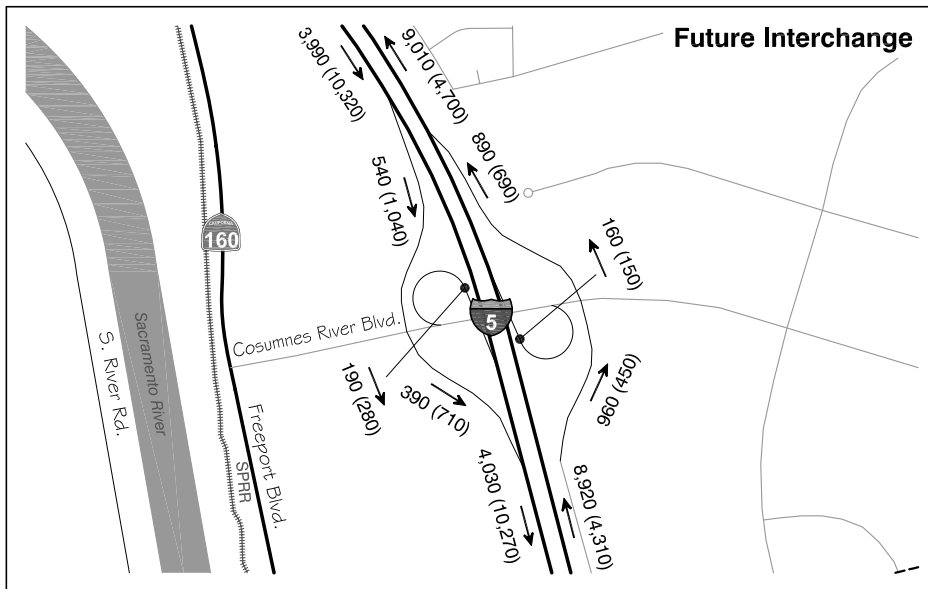
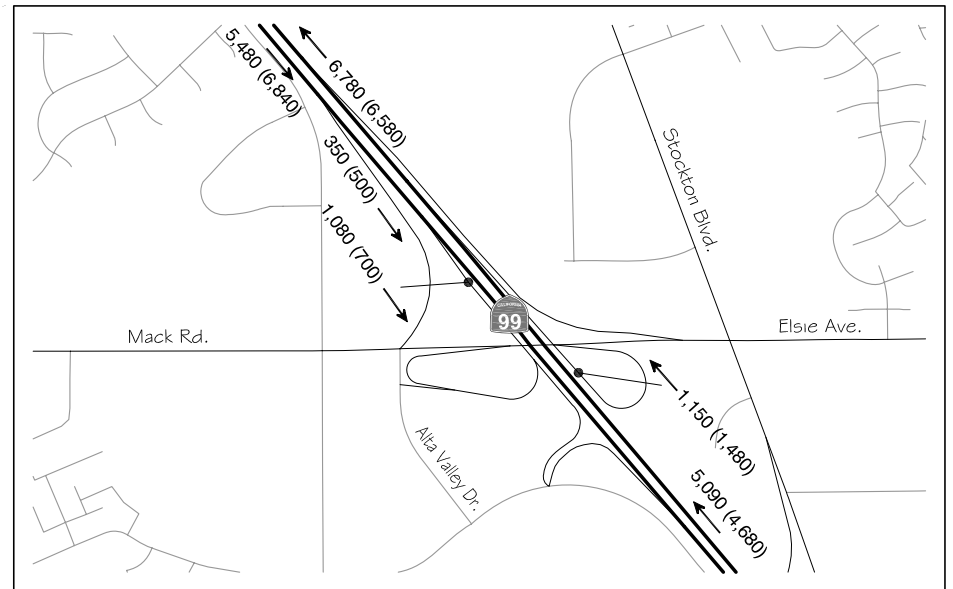
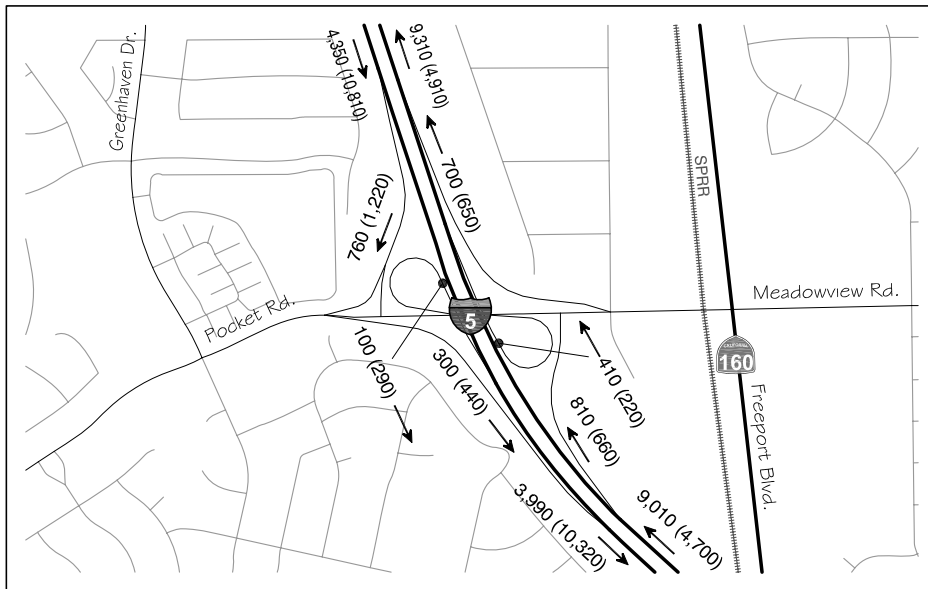


9. Cosumnes River Blvd./Freeport Blvd. **10. Cosumnes River Blvd./I-5 SB Ramps**



11. Cosumnes River Blvd./I-5 NB Ramps **16. Cosumnes River Blvd./24th St.** **32. Mack Rd./Alta Valley Dr./SR 99 SB Ramps** **33. Cosumnes River Blvd./SR 99 SB Ramps** **34. Cosumnes River Blvd./SR 99 NB Ramps**





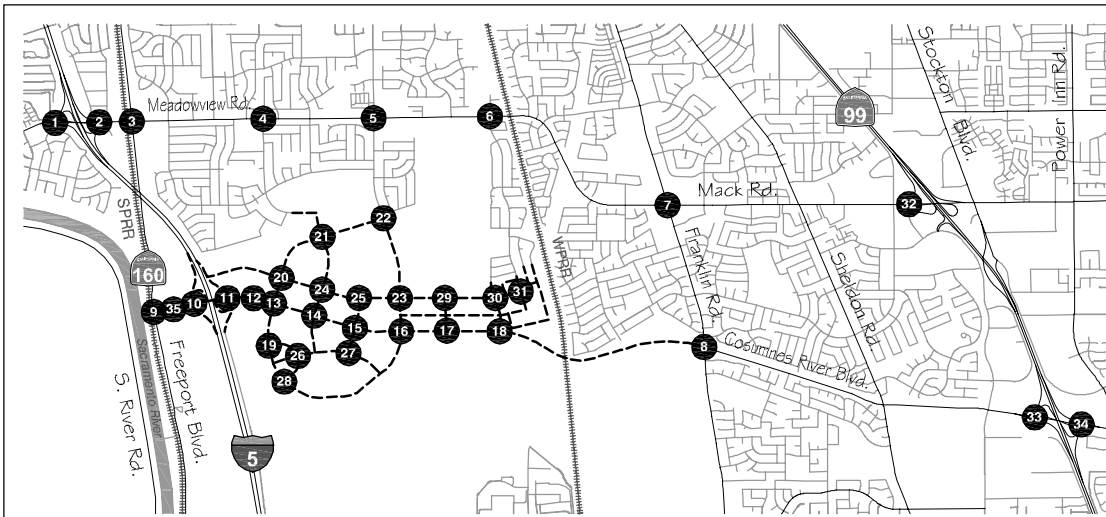
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- Travel Direction
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Future Road



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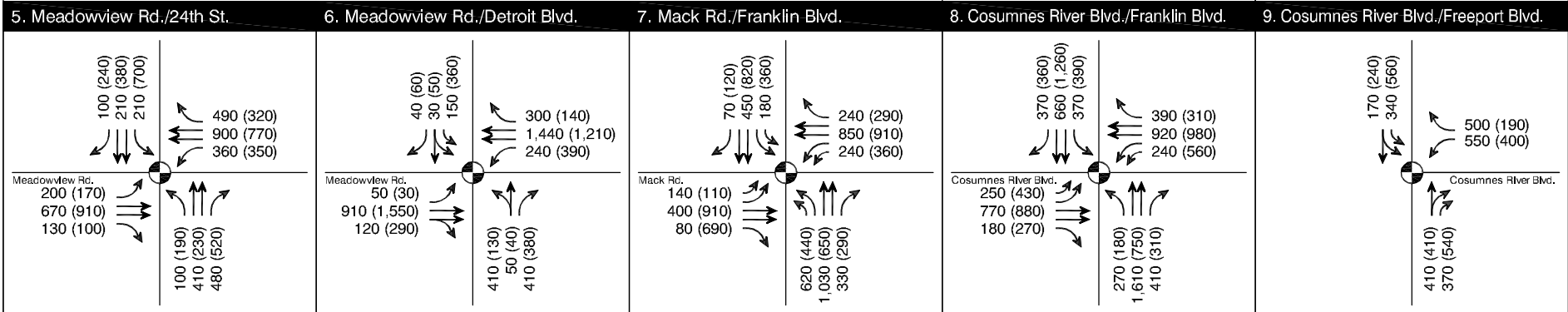
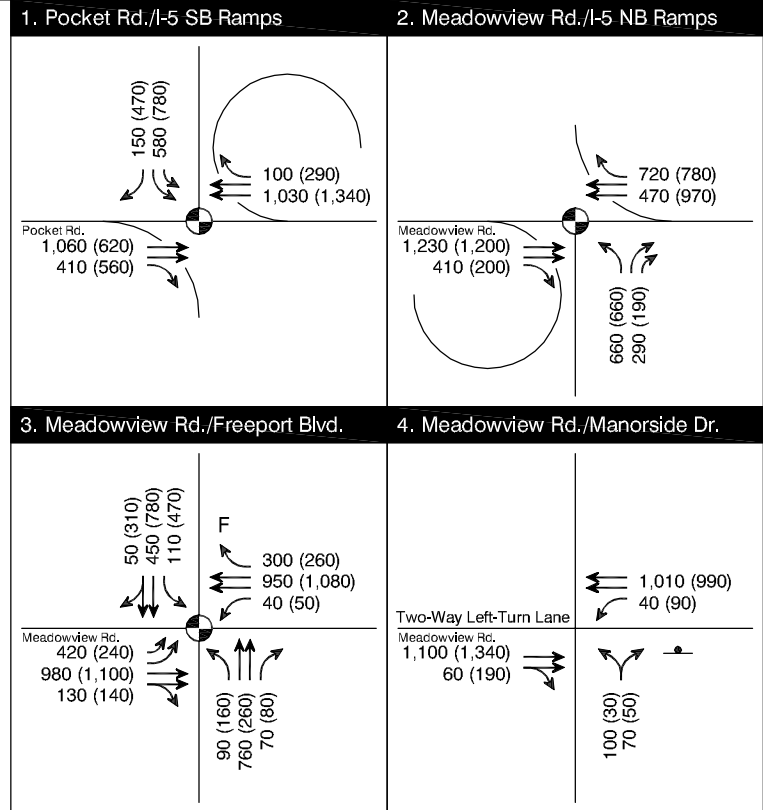
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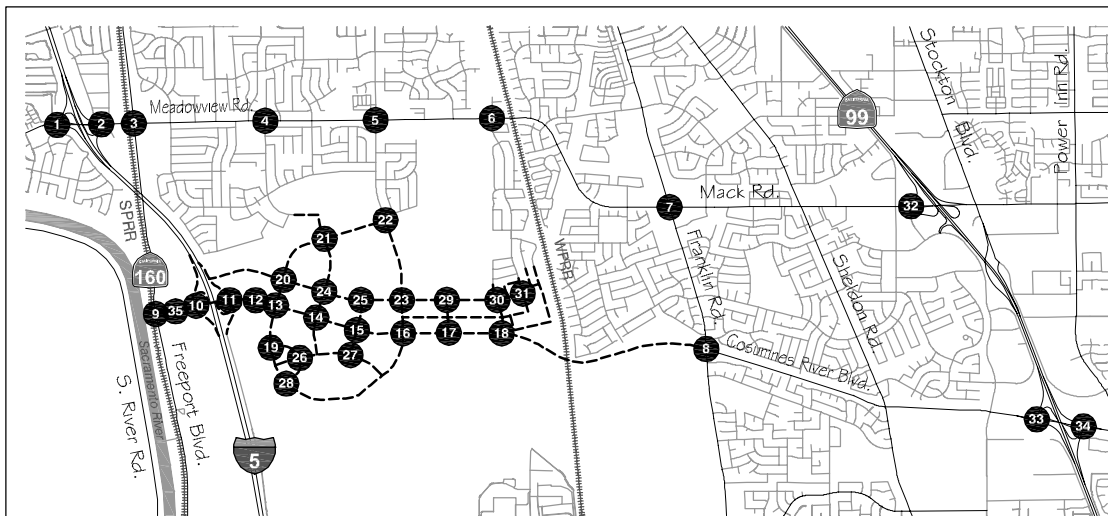


LEGEND

- Turn Movement
- "Free" Right Turn
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Study Intersection
- Traffic Signal
- Stop Sign
- Future Road
- N

NOT TO SCALE





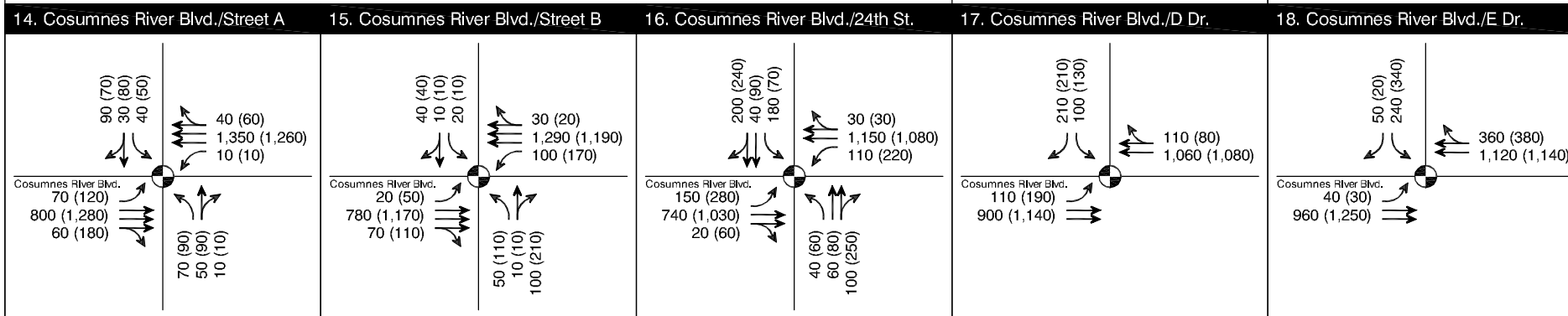
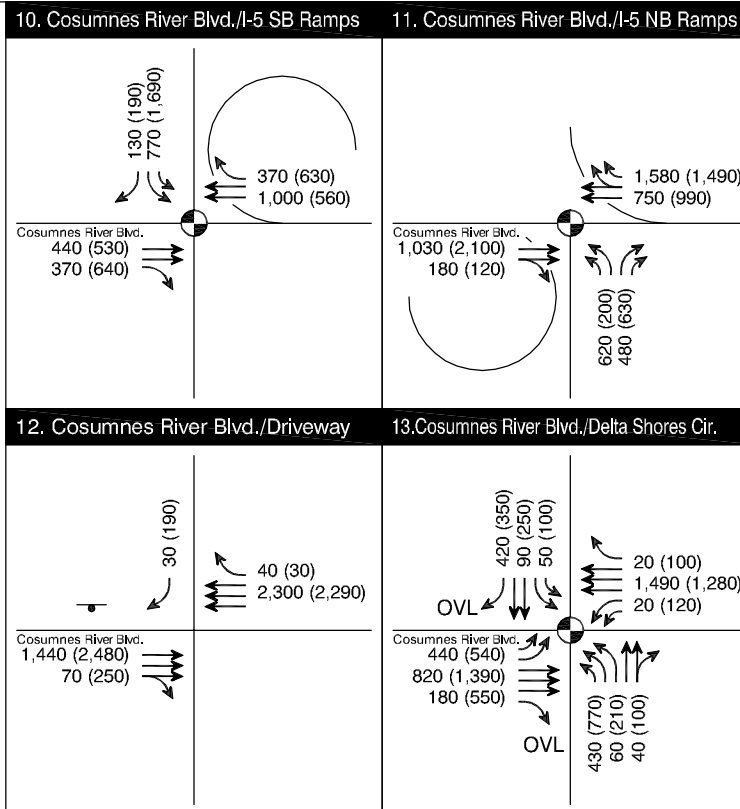
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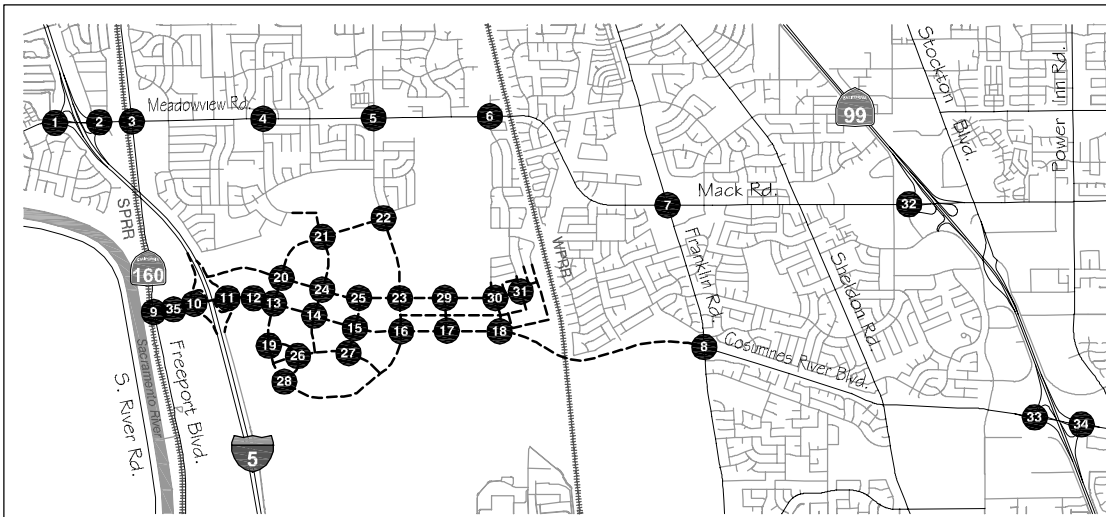
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- Traffic Signal
- Stop Sign
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Study Intersection
- Future Road
- OVL Overlap Phasing



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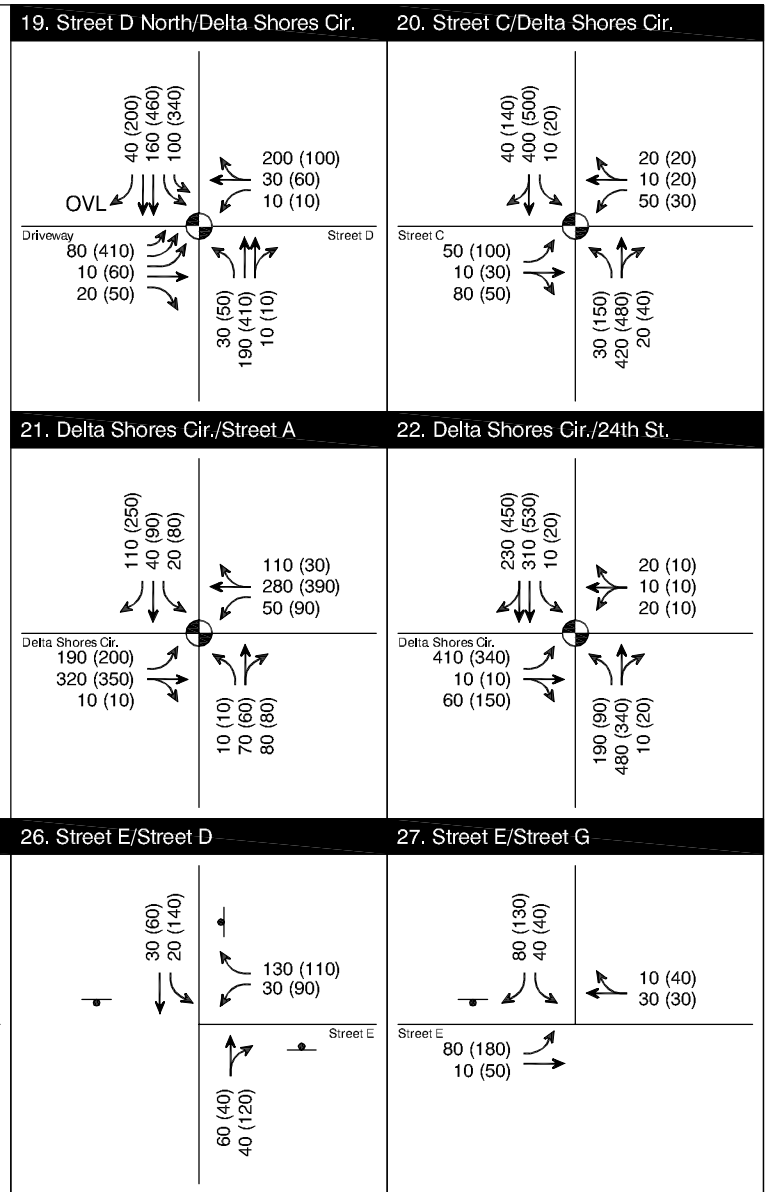


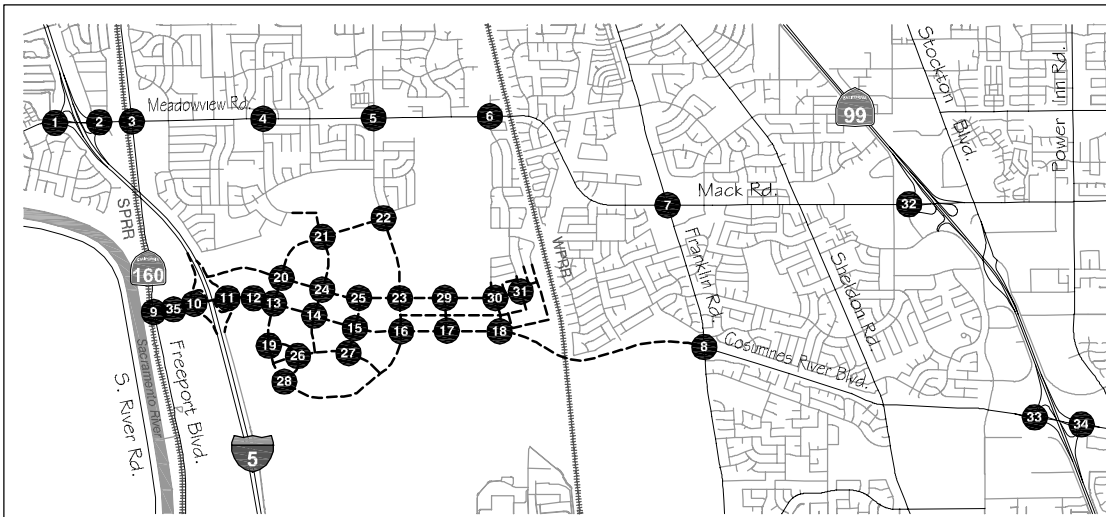


LEGEND

- Turn Movement
- Traffic Signal
- Stop Sign
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Study Intersection
- Future Road
- OVL Overlap Phasing
- N

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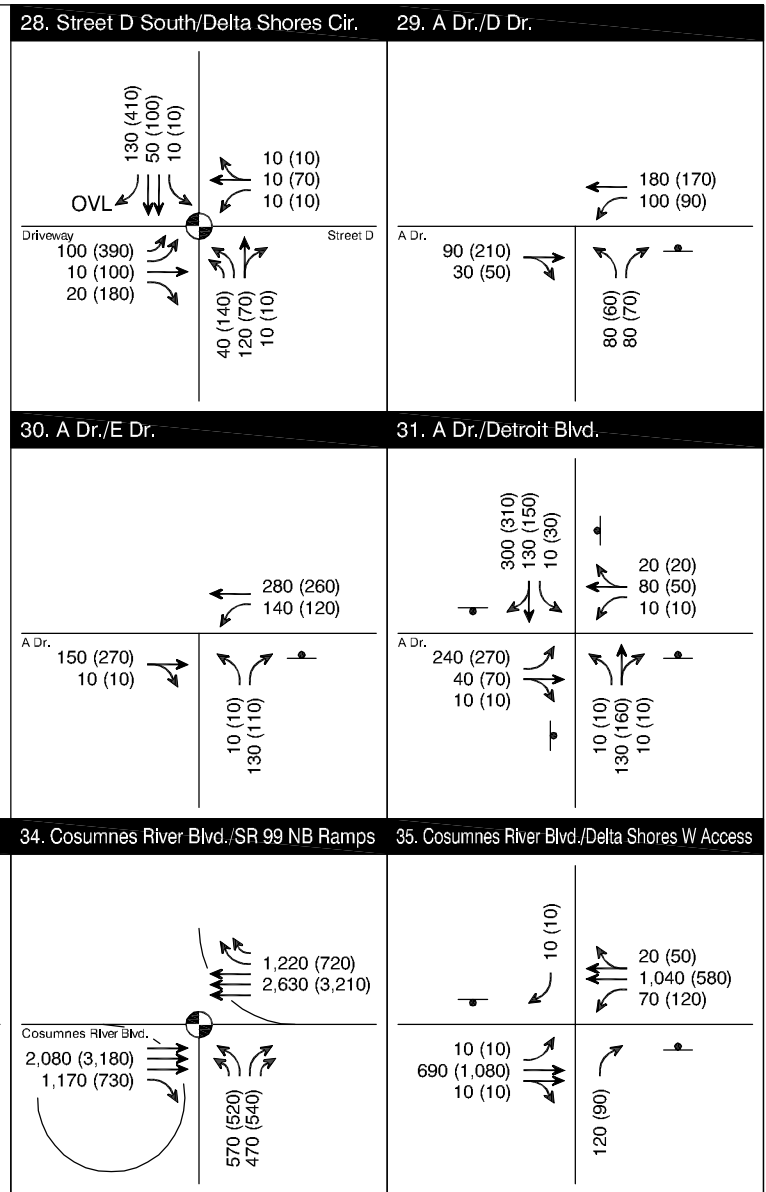


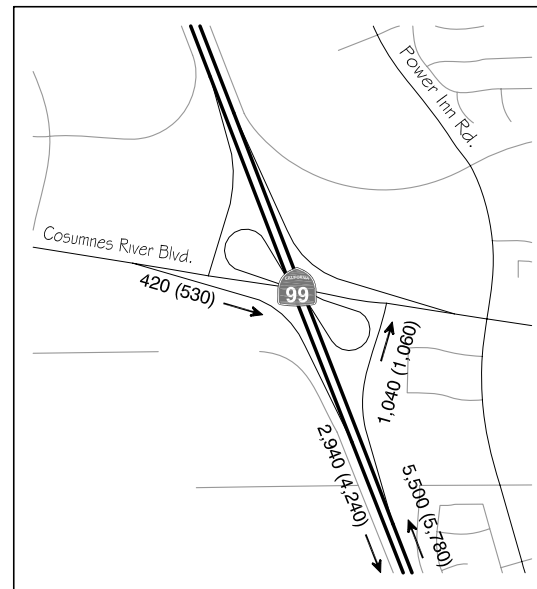
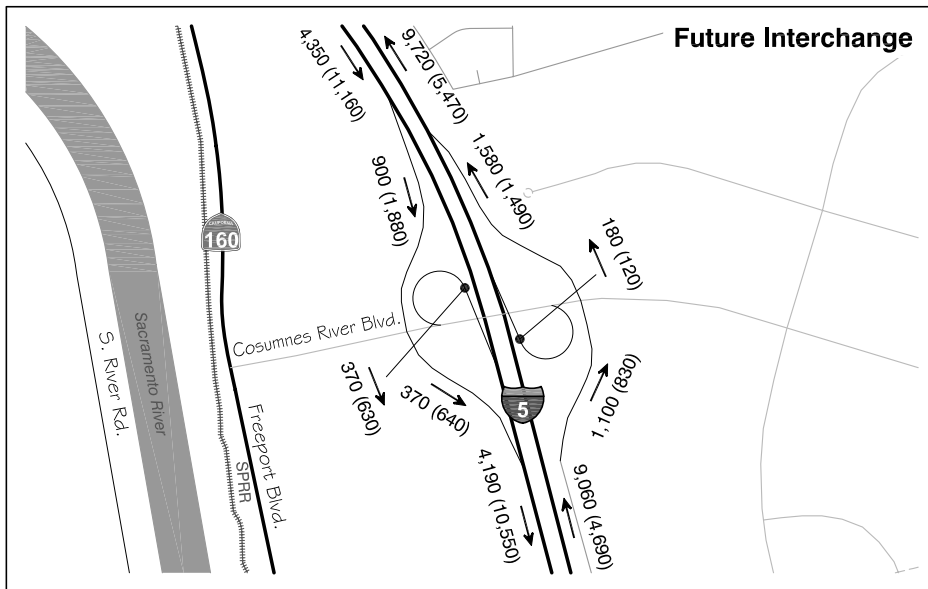
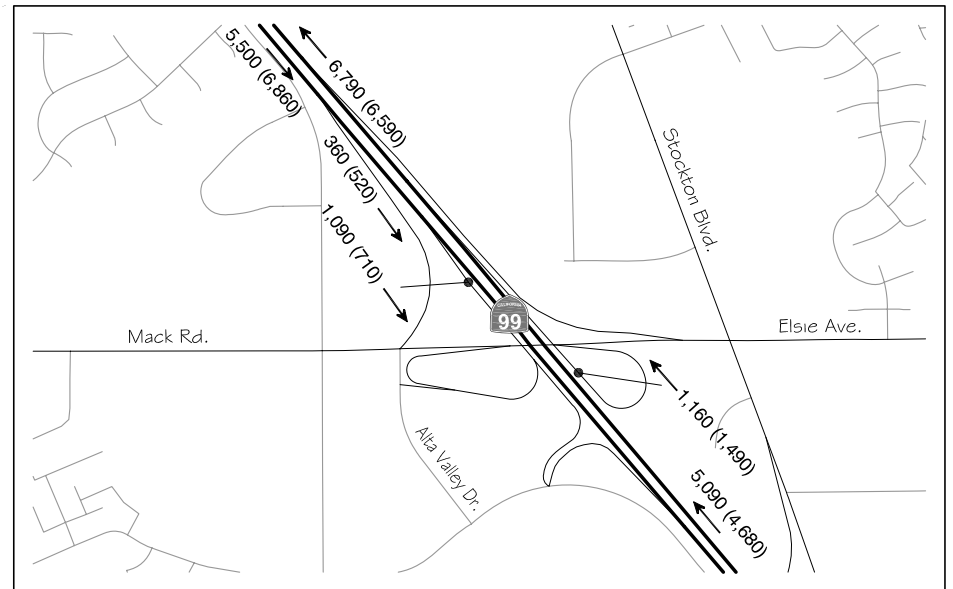
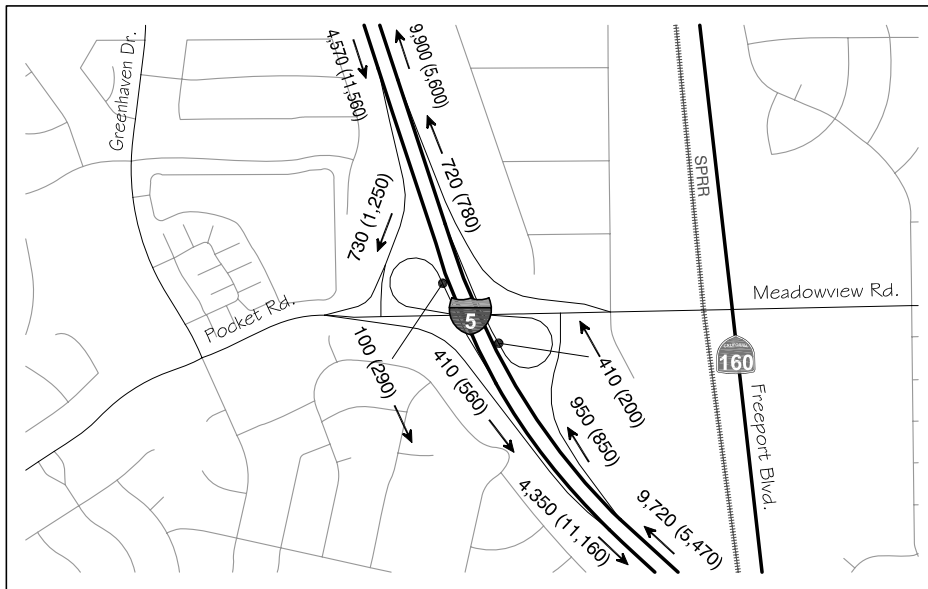
LEGEND

- Turn Movement
- Traffic Signal
- Stop Sign
- Study Intersection
- Future Road
- OVL Overlap Phasing



NOT TO SCALE





LEGEND

- Travel Direction
- XX (YY) AM (PM) Peak Hour Traffic Volume
- Future Road



N

NOT TO SCALE

Table 5.9-24 presents the AM and PM peak hour traffic operations at each study intersection under cumulative conditions.

Intersection	Control	"Cumulative No Project"				"Cumulative Plus Project"			
		AM Peak		PM Peak		AM Peak		PM Peak	
		LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay	LOS ¹	Delay
1. Pocket Rd/I-5 SB Ramps	Signalized	B	15.6	B	17.8	B	15.5	B	18.3
2. Pocket Rd/I-5 NB Ramps	Signalized	C	24.8	C	22.8	C	29.3	C	27.7
3. Meadowview Rd/Freeport Bl	Signalized	C	30.5	D	36.5	D	35.3	D	51.4
4. Meadowview Rd/Manorside Dr	TWSC	A E	<10 35.9	A D	<10 26.9	A E	<10 45.2	A D	<10 32.2
5. Meadowview Rd/24 th St	Signalized	D	40.8	F	93.9	E	57.8	F	143.8
6. Meadowview Rd/Detroit Bl	Signalized	D	45.2	F	>80	D	43.5	F	132.1
7. Mack Rd/Franklin Blvd	Signalized	C	33.4	D	54.7	C	34.1	E	59.2
8. Cosumnes River Bl/Franklin Bl	Signalized	E	57.4	D	52.5	E	65.7	E	63.2
9. Cosumnes River Bl/Freeport Bl	Signalized	E	74.4	E	55.5	E	70.6	E	79.5
10. Cosumnes River Bl/I-5 SB Ramps	Signalized	A	8.5	B	12.2	B	13.7	C	27.1
11. Cosumnes River Bl/I-5 NB Ramps	Signalized	B	10.3	A	7.4	D	36.5	C	27.4
12. Cosumnes River Bl/Retail Access	TWSC	-	-	-	-	A C	<10 16.5	A B	<10 10.2
13. Cosumnes River Bl/Delta Shores	Signalized	-	-	-	-	D	46.3	D	44.3
14. Cosumnes River Bl/Street A	Signalized	-	-	-	-	B	19.3	C	21.4
15. Cosumnes River Bl/Street B	Signalized	-	-	-	-	B	17.4	C	25.2
16. Cosumnes River Bl/24 th Street	Signalized	C	25.6	B	16.5	C	27.9	C	33.6
17. Cosumnes River Bl/D Drive	Signalized	-	-	-	-	B	19.8	C	22.7
18. Cosumnes River Bl/E Drive	Signalized	-	-	-	-	B	16.3	B	19.0
19. Delta Shores Circle/Street D north	Signalized	-	-	-	-	C	23.7	C	31.7
20. Delta Shores Circle/Street C	Signalized	-	-	-	-	C	20.2	C	23.8
21. Delta Shores Circle/Street A	Signalized	-	-	-	-	C	28.5	C	32.1
22. Delta Shores Circle/24 th Street	Signalized	-	-	-	-	C	33.0	C	29.4
23. Street C/24 th Street	Signalized	-	-	-	-	C	29.5	C	30.0
24. Street C/Street A	TWSC	-	-	-	-	A B	<10 11.4	A B	<10 14.3
25. Street C/Street B	TWSC	-	-	-	-	A A	<10 <10	A A	<10 <10
26. Street E/Street D	AWSC	-	-	-	-	A	<10	A	<10
27. Street E/Street G	TWSC	-	-	-	-	A A	<10 <10	A B	<10 10.5
28. Delta Shores Circle/Street D south	Signalized	-	-	-	-	C	23.1	C	27.3
29. A Drive/D Drive	TWSC	-	-	-	-	A B	<10 12.1	A B	<10 12.8
30. A Drive/E Drive	TWSC	-	-	-	-	A B	<10 10.4	A B	<10 11.3
31. Detroit Boulevard/A Drive	AWSC	-	-	-	-	C	15.0	C	17.4
32. Mack R/SR 99 SB Ramp/Alta Valley	Signalized	A	<10	C	27.9	A	<10	C	28.8
33. Cosumnes River Bl/SR 99 SB Ramps	Signalized	F	>80?	F	>80?	F	134.0	F	152.9
34. Cosumnes River Bl/SR 99 NB Ramps	Signalized	B	14.6	B	18.4	B	15.1	B	19.6
35. Cosumnes River Bl/Delta Shores West Access	TWSC	-	-	-	-	B C	14.4 18.0	A C	<10 21.3

Notes:
1. For signalized and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle. For side-street stop intersections, the delay and LOS for the worse individual movement is shown below the average intersection delay and LOS.
LOS = level of service; TWSC=side street stop control; AWSC=all-way stop control
Shaded areas indicate unacceptable LOS based on average delay. Bold indicates an increase in delay of more than 5 seconds.
Source: Fehr & Peers, 2007.

As shown in the above table, the following intersections operate at unacceptable LOS under cumulative conditions:

- **Meadowview Road/Freeport Boulevard** operates at LOS D during the AM and PM peak hour with the development of the proposed project. The addition of project traffic results in a significant impact at this location.
- **Meadowview Road/24th Street** operates at LOS E during the AM and LOS F during the PM peak hour with the development of the proposed project. The addition of project traffic results in a significant impact at this location.
- **Meadowview Road/Detroit Boulevard** operates at LOS D during the AM and LOS F during the PM peak hour with the development of the proposed project. The addition of project traffic results in a change in delay of less than five seconds, and thus does not create a significant impact at this location.
- **Mack Road/Franklin Boulevard** operates at LOS E during the PM peak hour with the development of the proposed project. The project results in a significant impact at this location. The addition of project traffic results in a significant impact at this location.
- **Cosumnes River Boulevard/Franklin Boulevard** operates at LOS E during the AM and PM peak hours with the development of the proposed project. The addition of project traffic results in a significant impact at this location.
- **Cosumnes River Boulevard/Freeport Boulevard** operates at LOS F during the PM peak hour with the development of the proposed project. The addition of project traffic results in a significant impact at this location.
- **Cosumnes River Boulevard/Delta Shores Circle (west)** operates at LOS D during the AM and LOS E during the PM peak hour with the development of the proposed project. The addition of project traffic results in a significant impact at this location.
- **Cosumnes River Boulevard/SR 99 SB Ramps** operates at LOS F during the AM and PM peak hours with the development of the proposed project. The addition of project traffic results in a change in delay of less than five seconds, and thus does not create a significant impact at this location.

The peak hour traffic volume warrant was analyzed for each unsignalized study intersection under cumulative conditions. The Meadowview Road/Manorside Drive intersection meets the peak hour warrant for a traffic signal under existing and baseline conditions and therefore, also meets the warrant under “Cumulative No Project” and “Cumulative Plus Project” conditions.

Freeway Mainline Segments, Ramp Merge/Diverge, and Off-Ramp Queue Lengths

Tables 5.9-25 and 5.9-26 present the AM and PM peak hour traffic operations for each study freeway facility under cumulative conditions with and without the development of the proposed project. The following improvements were assumed in place under Year 2032 conditions as identified in the SACOG MTP:

TABLE 5.9-25

RAMP JUNCTION OPERATIONS – CUMULATIVE CONDITIONS

Intersection	Merge/ Diverge/ Weaving	“Cumulative No Project”				“Cumulative Plus Project”			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Density ¹	LOS	Density ¹	LOS	Density ¹	LOS	Density ¹	LOS
<i>I-5/Pocket Rd Interchange</i>									
NB off-Ramp	Diverge	53.4	F	25.9	C	60.5	F	29.4	D
NB Loop on-Ramp	Merge	44.5	F	19.5	B	49.6	F	21.5	C
NB Slip on-Ramp	Merge	52.1	F	25.2	C	57.4	F	28.3	D
SB off-Ramp	Diverge	24.7	C	71.3	F	25.5	C	78.8	F
SB Loop on-Ramp	Merge	17.7	B	59.6	F	18.6	B	63.5	F
SB Slip on-Ramp	Merge	19.1	B	60.2	F	20.9	C	67.7	F
<i>I-5/Cosumnes River Boulevard</i>									
NB off-Ramp	Diverge	40.4	F	7.9	A	41.8	F	9.8	A
NB Loop on-Ramp	Merge	36.5	F	14.9	B	36.7	F	14.7	B
NB Slip on-Ramp	Merge	42.2	F	18.3	B	47.9	F	24.7	C
SB off-Ramp	Diverge	6.6	A	54.3	F	9.1	A	62.7	F
SB Loop on-Ramp	Merge	16.1	B	52.1	F	17.5	B	54.9	F
SB Slip on-Ramp	Merge	14.5	B	53.7	F	15.0	B	56.3	F
<i>SR 99/Mack Road Interchange</i>									
NB Loop on-Ramp	Merge	23.6	C	24.1	C	23.7	C	24.1	C
SB off-Ramp	Diverge	27.9	D	24.0	C	28.1	D	24.1	C
<i>SR 99/Cosumnes River Boulevard</i>									
NB off-Ramp	Diverge	41.0	E	44.4	F	41.1	E	44.6	F
SB Slip on-Ramp	Merge	25.3	C	26.6	C	25.8	C	26.7	C

Notes:
1. Density reported in passenger cars per mile per lane.
Source: Fehr & Peers, 2007

TABLE 5.9-26

FREEWAY MAINLINE OPERATIONS – CUMULATIVE CONDITIONS

Freeway Facilities	Segment	Direction of Travel	“Cumulative No Project”						“Cumulative Plus Project”					
			AM Peak			PM Peak			AM Peak			PM Peak		
			Volume	Density ¹	LOS	Volume	Density ¹	LOS	Volume	Density ¹	LOS	Volume	Density ¹	LOS
I-5	North of Meadowview Rd	North	9,310	>45	F	4,910	20.4	C	9,900	>45	F	5,600	23.8	C
		South	4,350	18.1	C	10,810	>45	F	4,570	19.0	C	11,560	>45	F
I-5	North of Cosumnes River Blvd	North	9,010	>45	F	4,700	19.5	C	9,720	>45	F	5,470	23.0	C
		South	3,990	16.6	B	10,320	>45	F	4,350	18.1	C	11,160	>45	F
I-5	North of Laguna Blvd	North	8,920	>45	F	4,310	17.9	B	9,060	>45	F	4,690	19.5	C
		South	4,030	16.7	B	10,270	>45	F	4,190	17.4	B	10,550	>45	F
SR 99	North of Mack Rd	North	6,780	25.8	C	6,580	25.8	C	6,790	25.8	C	6,590	25.9	C
		South	5,480	27.9	D	6,840	24.0	C	5,500	28.1	D	6,860	24.1	C
SR 99	South of Cosumnes River Blvd	North	5,480	39.6	E	5,750	>45	F	5,500	39.9	E	5,780	>45	F
		South	2,880	21.4	C	4,220	22.7	C	2,940	21.9	C	4,240	22.8	C

Notes:
1. Density reported in passenger cars per mile per lane.
Source: Fehr & Peers, 2007.

- **I-5** is widened to provide carpool lanes between Downtown Sacramento and Elk Grove Boulevard.

Although the study ramp merge/diverge areas operate at LOS E or better conditions during the peak hours under cumulative conditions, LOS F operations are identified in locations where the freeway mainline is operating over capacity. According to the *2000 HCM*, if the freeway mainline is over capacity, then the ramp merge/diverge area should also be reported at LOS F.

As shown in the table, all the study freeway facilities are expected to operate at LOS E or better during the AM and PM peak hours under cumulative conditions except for the following ramp junction and mainline segments, which operate at LOS F as noted.

- **I-5/Pocket Road Interchange: Northbound Off-Ramp** operates at LOS F during the AM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5/Pocket Road Interchange: Northbound Loop On-Ramp** operates at LOS F during the AM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5/Pocket Road Interchange: Northbound Slip On-Ramp** operates at LOS F during the AM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5/Pocket Road Interchange: Southbound Off-Ramp** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5/Pocket Road Interchange: Southbound Loop On-Ramp** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5/Pocket Road Interchange: Southbound Slip On-Ramp** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5/Cosumnes River Boulevard Interchange: Northbound Off-Ramp** operates at LOS F during the AM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5/ Cosumnes River Boulevard Interchange: Northbound Loop On-Ramp** operates at LOS F during the AM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5/ Cosumnes River Boulevard Interchange: Northbound Slip On-Ramp** operates at LOS F during the AM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5/ Cosumnes River Boulevard Interchange: Southbound Off-Ramp** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5/ Cosumnes River Boulevard Interchange: Southbound Loop On-Ramp** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.

- **I-5/ Cosumnes River Boulevard Interchange: Southbound Slip On-Ramp** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **SR 99/Cosumnes River Boulevard Interchange: Northbound Off-Ramp** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5 Mainline North of Meadowview Road: Northbound** operates at LOS F during the AM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5 Mainline North of Meadowview Road: Southbound** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5 Mainline North of Cosumnes River Boulevard: Northbound** operates at LOS F during the AM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5 Mainline North of Cosumnes River Boulevard: Southbound** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5 Mainline North of Laguna Boulevard: Northbound** operates at LOS F during the AM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **I-5 Mainline North of Laguna Boulevard: Southbound** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.
- **SR 99 Mainline South of Cosumnes River Boulevard: Northbound** operates at LOS F during the PM peak hour under both the Cumulative No Project and Cumulative Plus Project scenarios.

Table 5.9-27 presents the queues for each freeway off-ramp during the AM and PM peak hours. It shows that peak hour queues at the off-ramps for the study interchanges do not extend back into the freeway mainline of I-5 or SR 99. The queue lengths for the northbound off-ramp at the I-5/Pocket Road interchange would extend beyond the storage area into the deceleration area, but would not extend beyond the gore point onto the freeway lanes.

Table 5.9-27 displays the off-ramp vehicle queues at the I-5/Cosumnes River Boulevard interchange under “Cumulative No Project” and “Cumulative Plus Project” conditions. During the PM peak hour, the vehicle queues for the northbound left-turn movement from the I-5 off-ramp onto Cosumnes River Boulevard would increase from 200 feet to 375 feet. The southbound left-turn movement queue from I-5 onto Cosumnes River Boulevard would increase from 225 feet to 725 feet (in the PM peak hour), which exceeds the 700 foot storage capacity of the ramp. The southbound “Cumulative Plus Project” vehicle queues would extend into the deceleration area of the ramp, but not onto the freeway mainline.

TABLE 5.9-27

FREEWAY OFF-RAMP VEHICLE QUEUING – CUMULATIVE CONDITIONS

Intersection/Off-Ramp	Turn Movement	Storage Length (feet)	“Cumulative No Project” Vehicle Queue ¹		“Cumulative Plus Project” Vehicle Queue ¹	
			AM Peak	PM Peak	AM Peak	PM Peak
I-5 SB Ramps/Cosumnes River Boulevard	SB Left Turn	700	150 feet	225 feet	250 feet	725 feet
	SB Right Turn	700	75 feet	75 feet	100 feet	350 feet
I-5 NB Ramps/Cosumnes River Boulevard	NB Left Turn	1,260	200 feet	100 feet	425 feet	150 feet
	NB Right Turn	1,260	75 feet	75 feet	200 feet	275 feet
I-5 SB Ramps/Pocket Road	SB Left Turn	930	400 feet	475 feet	375 feet	525 feet
	SB Right Turn	930	25 feet	25 feet	25 feet	25 feet
I-5 NB Ramps/Pocket Road	NB Left Turn	830	850 feet	700 feet	1050 feet	950 feet
	NB Right Turn	830	225 feet	200 feet	225 feet	150 feet
SR 99 SB Ramp/Mack Road	SB Right Turn	1,230	275 feet	550 feet	275 feet	575 feet
SR 99 NB Ramp/Cosumnes River Boulevard	NB Left Turn	1,120	450 feet	400 feet	475 feet	425 feet
	NB Right Turn	1,120	450 feet	575 feet	450 feet	575 feet

Notes: Bold indicates queue longer than storage.

1. Queues for I-5/Cosumnes River Boulevard interchange based on average maximum vehicle queue. Queues for other interchanges based on 95th percentile queue.

Source: Fehr & Peers, 2007.

On-Site Vehicle Circulation

The proposed circulation system was evaluated with respect to on-site intersection traffic control, site access for the Village Center, intersection spacing, and vehicle, bicycle, and pedestrian circulation. The findings and recommendations are presented below.

On-Site Intersection Traffic Control

AM and PM peak hour traffic forecasts were developed for ten internal study intersections as well as six intersections along Cosumnes River Boulevard. Lane configurations were developed for the selected on-site intersections based on the traffic forecasts and proposed traffic control at the intersection. For the internal project study intersections, side-street stop-control and a single exclusive left-turn lane was assumed on all approaches.

Seven of the ten internal intersections would not operate at an acceptable LOS with two-way stop-control. This includes the following locations.

- Delta Shores Circle South/Street D (north)
- Delta Shores Circle South/Street D (south)
- Delta Shores Circle North/Street C
- Delta Shores Circle North/Street A
- Delta Shores Circle North/24th Street
- Street C/24th Street/A Drive
- Street E/Street D

Therefore, the following traffic control devices are recommended.

- **Recommendation** – Install traffic signals at the following locations.
 - Delta Shores Circle South/Street D (north)
 - Delta Shores Circle South/Street D (south)
 - Delta Shores Circle North/Street C
 - Delta Shores Circle North/Street A
 - Delta Shores Circle North/24th Street
 - Street C/24th Street/A Drive
- **Recommendation** – Install all-way stop-control at the following locations.
 - Street E/Street D

Site Access for the Village Center

Proposed access to/from the Village Center retail uses, located south of Cosumnes River Boulevard and west of Delta Shores Circle South, is summarized below.

- **Cosumnes River Boulevard access** – eastbound traffic on Cosumnes River Boulevard would be able to enter the Village Center via a driveway located between the I-5 NB ramps and Delta Shores Circle.
- **Delta Shores Circle South/Street D (North)** – this four-way intersection, located approximately 1,200 feet south of Cosumnes River Boulevard, would serve as a primary access to the Village Center. All movements are permitted.
- **Delta Shores Circle South/Street D (South)** – this four-way intersection, located approximately 1,000 feet south of the above access at Street D (North), would serve as the second primary access to the Village Center. All movements are permitted.

The regional retail uses at the Village Center have two proposed signalized access points onto Delta Shores Circle South. This configuration would result in a high concentration of outbound traffic at these locations, and likely create congested conditions within the retail center that will impede internal circulation during the PM peak hour. Approximately 70 percent of the traffic exiting the retail center during the PM peak hour is making a left turn out of the site, as they are destined to the north on Delta Shores Circle South. The resulting volume of left-turning traffic would require double left-turn lanes for exiting traffic at both Street D (North) and Street D (South). Long queues can be expected for outbound traffic at these two driveways. The Arden Fair Mall provides a good illustration of the scale of driveway throat depths that would be needed.

Based on the traffic operations results, the following is recommended to improve access to the Village Center site:

- **Recommendation** – Construct the intersection improvements identified in the impact and mitigation section of this study.
- **Recommendation** – At the Delta Shores Circle South/Street D (North) access to the Village Center, provide two inbound lanes and four outbound lanes (i.e., two left turn lanes, one through lane, one exclusive right turn lane). The driveway shall have a continuous raised center median 500 feet in length to provide sufficient, unobstructed throat depth for the two left turn lanes. The through lane and right turn lane would require 100 feet in storage length.
- **Recommendation** – At the Delta Shores Circle South/Street D (South) access to the Village Center, provide two inbound lanes and four outbound lanes (i.e., two left turn lanes, one through lane, one exclusive right turn lane). The driveway shall have a continuous raised center median 275 feet in length to provide sufficient, unobstructed throat depth for the two left turn lanes. The through lane would require 150 feet in storage length and the right turn lane would require 250 feet in storage length.
- **Alternate Recommendation** – The addition of a third signalized access point on Delta Shores Circle would better distribute outbound traffic, allowing for improved accessibility and internal circulation. If a third signalized access point is added along Delta Shores Circle South, the location of the northernmost access should be maintained and the two other signalized access points should be equally spaced along the remaining southerly retail center frontage.

Proposed access to/from the Village Center retail uses, located north of Cosumnes River Boulevard and west of Delta Shores Circle South, is summarized below.

- **Cosumnes River Boulevard access** – westbound traffic on Cosumnes River Boulevard would be able to enter the Village Center via a driveway located between the I-5 NB ramps and Delta Shores Circle.
- **Delta Shores Circle North access** – this intersection, located approximately 400 feet north of Cosumnes River Boulevard, would serve as a primary access to the north Village Center. All movements are permitted.

The regional retail uses at the Village Center have one proposed unsignalized access point onto Cosumnes River Boulevard and one onto Delta Shores Circle North. Traffic exiting the retail center onto Cosumnes River Boulevard would be turning right into one of two right turn lanes that would feed the on-ramp to northbound I-5. To continue in the westbound direction along Cosumnes River Boulevard, exiting traffic would have to merge across two lanes in approximately 700 feet.

The following is recommended to improve egress from the Village Center site:

- **Recommendation** – Install signing within the retail center that indicates that the exit lane onto westbound Cosumnes River Boulevard is for traffic destined to “northbound I-5 only), and directing all other exiting traffic to use the Delta Shores Circle North access.

Intersection Spacing

The City of Sacramento has a minimum allowable intersection spacing of 500 feet (measured from the nearest curb returns on the through street) for six-lane arterials (i.e., Cosumnes River Boulevard) and 250 feet for four-lane arterials (i.e., 24th Street and portions of Delta Shores Circle). The minimum allowable intersection offset is 120 feet (measured from centerline to centerline). Based on a review of the site plan, all of the intersections shown meet this standard. The site plan does not show intermediate intersection locations. As such, the following is recommended:

- **Recommendation** – the City's minimum intersection spacing shall be maintained on all project streets.
- **Cosumnes River Boulevard Recommendation** – signalized intersections are planned at approximate intervals of 1,200 to 1,400 feet along Cosumnes River Boulevard between I-5 and the eastern edge of the project. The driveway access to the Town Center located approximately mid-way between Street B and 24th Street shall be signalized to provide full access to the retail center. Any additional access points planned along Cosumnes River Boulevard shall meet the following criteria.
 - Be a minimum of 500 feet from the nearest intersection or driveway.
 - Be limited to right-turn in, right-turn out movements only unless the following conditions are met:
 - Left turn movements from Cosumnes River Boulevard into the access will be allowed if a left turn pocket is provided.
 - Left turn movements from the access onto Cosumnes River Boulevard will be allowed if a traffic signal is warranted and the addition of a traffic signal does not impact progression along the corridor.
 - The driveway shall provided shared access to adjacent parcels on both sides of Cosumnes River Boulevard.

Traffic Signal Warrants

A peak hour volume traffic signal warrant analysis was conducted for all unsignalized study intersections using the criteria described in the Manual on Uniform Traffic Control Devices (MUTCD). The results indicate that the intersection of Meadowview Road/Manorside Drive would meet this signal warrant's criteria under Baseline Plus Project conditions. The peak hour signal warrant is also met under existing conditions. It should be noted that the peak hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, a full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. In addition, factors such as congestion, approach conditions, and driver confusion should be considered before deciding to install signals.

Bicycle and Pedestrian Circulation

The project site plan provided for use in this traffic study includes street cross-sections that show Class II bicycle lanes on Cosumnes River Boulevard, Delta Shores Circle, 24th Street, Street E, and all the residential local streets (i.e., Street A, Street B, Street C, Street D, Street F, and Street G). Detached sidewalks are also shown on all of these streets, as well as planned residential internal streets. Pedestrian bridges are proposed across Cosumnes River Boulevard (between Street B and 24th Street) and across Delta Shores Circle South (between the D Street loop). In this analysis, the impacts of the project to bicycle and pedestrian circulation are considered for cumulative scenario assuming the complete built up of the project.

Transit Operations

The City of Sacramento 1988 General Plan as well as the draft 2030 General Plan includes policies that promote public transit and alternative modes of transit. The project is deemed to create a significant impact on the transit system if the project-generated ridership exceeds available or planned system capacity. The project is estimated to generate approximately 200 peak hour transit trips, primarily from planned residential uses. The project would trigger the need for either the modification of existing RT bus routes or the addition of new bus routes. This may include routes linking the project site to downtown Sacramento, the planned light rail station in the proposed Stone-Boswell project, schools, and medical centers.

Bicycle and Pedestrian Operations

Class II bicycle lanes would be provided on all new arterial, collector, and residential local streets within the Delta Shores project. The project would not hinder or eliminate any existing bikeways.

Detached sidewalks would be provided on all new arterial, collector, residential local, and internal residential streets within the Delta Shores project. The project would not hinder or eliminate any existing sidewalks.

Standards of Significance

As indicated above, under the Methods of Analysis, for the purposes of this traffic analysis a LOS C standard is used to determine intersection and roadway impacts. Under the draft 2030 General Plan a LOS D standard is proposed; however, for the purposes of this analysis the more stringent LOS C standard is used.

Intersections

The City of Sacramento has established a LOS threshold for intersections of LOS C. The City's LOS threshold is based on the average control delay at signalized and unsignalized intersections. As stated in the City's *Traffic Impact Guidelines* (February 1996), a significant traffic impact occurs under the following conditions:

- The addition of project-generated traffic causes a facility to change from LOS A, B, or C to LOS D, E, or F; or

- The addition of project-generated traffic increases the average stopped delay by five seconds or more at an intersection already operating worse than LOS C.

This standard is consistent with a goal set forth in the City of Sacramento 1988 General Plan. Specifically, Section 5-11 – Goal D, states that the City will “work towards achieving a Level of Service C on the City’s local and major street system. Due to the constraints associated with existing development in the City, and because of other environmental concerns, this goal cannot always be met.”

Roadways

The City of Sacramento has established a LOS threshold for roadways of LOS C. As stated in the City’s *Traffic Impact Guidelines* (February 1996), a significant traffic impact occurs under the following conditions:

- The addition of project-generated traffic causes a facility to change from LOS A, B, or C to LOS D, E, or F; or
- The addition of project-generated traffic increases the v/c ratio by 0.02 or more on a roadway already operating worse than LOS C.

Freeway Ramps and Mainline

Caltrans considers the following to be significant impacts:

- Off-ramps with vehicle queues that extend into the ramp’s deceleration area or onto the freeway;
- Project traffic increases that cause any ramp’s merge/diverge LOS to be worse than the freeway’s level of service;
- Project traffic increases that cause the freeway level of service to deteriorate beyond LOS E.

In addition, a significant ramp impact would occur if the expected queue is greater than the storage capacity.

Caltrans has developed Transportation Concept Reports for I-5 and SR 99 (*Interstate 5 Transportation Concept Report*, Caltrans District 3, April 1997 and *Draft State Route 99 Transportation Concept Report*, Caltrans District 3, May 2004). I-5 and SR 99 have a concept service level of LOS E. Transportation concept reports identify the expected LOS of a facility based on anticipated traffic volumes and planned roadway improvements. As stated in the SR 99 report, Caltrans applies the concept LOS as follows (page 5):

- “Concept Level of Service (LOS) reflects the minimum level or quality of operations that is appropriate for each route segment, and is considered to be reasonably attainable within the 20-year planning period. Caltrans also uses the Concept Level of Service as the CEQA level of significance threshold when evaluating the impacts of local development plans and

projects. A significant impact is identified if a specific local development plan or project results in a level of service on the highway segment or intersection that is below the Concept LOS, and must be mitigated.”

Bicycle Facilities

A significant bikeway impact would occur if:

- The project hindered or eliminated an existing designated bikeway, or if the project interfered with implementation of a proposed bikeway, or
- The project was to result in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts.

Pedestrian Facilities

A significant pedestrian circulation impact would occur if:

- The project was to result in unsafe conditions for pedestrians, including unsafe increase in pedestrian/bicycle or pedestrian/motor vehicle conflicts.

Transit Facilities

A significant impact to the transit system would occur if:

- The project-generated ridership, when added to existing or future ridership, exceeds available or planned system capacity. Capacity is defined as the total number of passengers the system of busses and light rail vehicles can carry during the peak hours of operation.

Project-Specific Impacts and Mitigation Measures

5.9-1 Implementation of the proposed project would result in an increase in traffic levels.

The Delta Shores project would contribute to an increase in traffic volumes on the transportation system in the vicinity of the project area. This would be a *significant impact*.

Mitigation Measure

With implementation of Mitigation Measure 5.9-1 the project’s contribution to this impact would be reduced to ***less than significant***.

- 5.9-1 *The project applicant shall be required to develop the Delta Shores Finance Plan for review and approval by the City before project approval. The plan shall identify the financing mechanisms for all feasible transportation improvements defined as mitigation measures including, but not limited to, new roadways, roadway widening, traffic signals and public transit. The project applicant shall coordinate preparation of the finance plan with the City of Sacramento. All mitigation measures with “fair share” contributions would be implemented through the proposed financing mechanisms(s) indicated in the finance plan or by some*

other mechanism as determined by the City of Sacramento. The City shall adopt the Delta Shores Finance Plan at the time the project is considered for approval.

Near-Term Plus Pre-Interchange Scenario – Impacts and Mitigation Measures

5.9-2 Implementation of the proposed project under Near-Term plus Pre-Interchange Scenario would affect the Meadowview Road/Freeport Boulevard intersection.

Under Near-Term Plus Pre-Interchange Scenario conditions, the Meadowview Road/Freeport Boulevard intersection would degrade from LOS D to LOS E during the PM peak hour and add more than 5 seconds to the average delay. Therefore, this is considered a *significant impact*.

Mitigation Measure

The Meadowview Road/Freeport Boulevard intersection would operate at LOS D during the PM peak hour with implementation of Mitigation Measure 5.9-2. Implementation of this improvement would result in acceptable conditions and reduce the project's contribution to this impact to **less than significant**.

5.9-2 *The project applicant shall construct an exclusive eastbound right turn lane at the intersection of Meadowview Road/Freeport Boulevard. This improvement has to be in place at the time when building permits for 200 dwelling units have been issued.*

5.9-3 Implementation of the proposed project under Near-Term plus Pre-Interchange Scenario could affect existing transit operations.

The project could adversely impact existing programs that support public transit by requiring that new bus routes be provided or that existing bus routes be modified. This is considered a *significant impact*.

Mitigation Measure

The provision of on-site bus stop and shelter facilities on the site plan, subject to the approval of the City's Department of Transportation – Traffic Engineering Division, would reduce the project's contribution to this impact to **less than significant**.

5.9-3 *The project applicant shall coordinate with Regional Transit to provide transit facilities to serve the project area. The project applicant, in coordination with Regional Transit, shall also identify the specific locations of sheltered transit stops with bus turnouts. The City of Sacramento Traffic Engineering Division, working in conjunction with Regional Transit, shall approve the location, design, and implementation timing of the sheltered transit stops and bus turnouts prior to the issuance of building permits. Construction of these on-site bus stop facilities shall be phased consistent with the phased development of the project. Once demand for public transit services reaches 50 service requests, the project applicant shall work with Regional Transit to begin to provide transit services and shall increase those services in proportion to the development levels and increased rider ship levels occurring on*

the project site. Final design and operation of the transit service will be subject to the approval of the City and other proposed operating agencies (e.g., RT).

5.9-4 Implementation of the proposed project under Near-Term plus Pre-Interchange Scenario could affect existing bicycle or pedestrian facilities.

Implementation of the proposed project would not adversely affect existing bicycle or pedestrian facilities. The project would provide new sidewalks and both on-street and off-street bike facilities to encourage and support pedestrian and bicycle travel in the area. The project would construct a grade-separated pedestrian bridge across Cosumnes River Boulevard (between Street B and 24th Street) and across Delta Shores Circle South (between the D Street loop). The project would construct the I-5/Cosumnes River Boulevard interchange that would include a pedestrian-friendly design of the signalized ramp junctions. Therefore, there would be a ***less-than-significant impact*** on existing bicycle and pedestrian system.

Mitigation Measure

None required.

5.9-5 Under Near-Term plus Pre-Interchange Scenario project construction could increase construction-related traffic on existing roadways.

Construction activities would include disruptions to the transportation network near the project site, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures. Pedestrian and transit access may also be disrupted. These activities could result in degraded roadway conditions. Therefore, the impacts are considered *significant*.

Mitigation Measure

Preparation of a Construction Traffic and Parking Management Plan, subject to the approval of the City traffic engineer, would reduce the project's contribution to this impact to ***less than significant***.

5.9-5 *Before issuance of grading permits for the project site, the project applicant shall prepare a detailed Traffic Management Plan that would be subject to review and approval by the City Department of Transportation, Caltrans, and local emergency service providers including the City of Sacramento fire and police departments. The plan shall ensure that acceptable operating conditions on local roadways and freeway facilities are maintained. At a minimum, the plan shall include:*

- *The number of truck trips, time, and day of street closures*
- *Time of day of arrival and departure of trucks*
- *Limitations on the size and type of trucks, provision of a staging area with a limitation on the number of trucks that can be waiting*
- *Provision of a truck circulation pattern*

- *Provision of driveway access plan so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas)*
- *Maintain safe and efficient access routes for emergency vehicles*
- *Manual traffic control when necessary*
- *Proper advance warning and posted signage concerning street closures*
- *Provisions for pedestrian safety*
- *A copy of the construction traffic management plan shall be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct roadways.*

Baseline Plus Project – Impacts and Mitigation Measures

5.9-6 Implementation of the project under Baseline plus Project conditions could affect the Meadowview Road/Freeport Boulevard intersection.

Under Baseline Plus Project conditions, the Meadowview Road/Freeport Boulevard intersection would degrade from LOS C to LOS D during the PM peak hour. Therefore, this is considered a *significant impact*.

Mitigation Measure

The Meadowview Road/Freeport Boulevard intersection would operate at LOS C during the PM peak hour with implementation of Mitigation Measure 5.9-6. Implementation of this improvement would result in acceptable conditions and reduce the project's contribution to this impact to ***less than significant***.

5.9-6 *The project applicant shall construct an exclusive southbound right turn lane at the intersection of Meadowview Road/Freeport Boulevard before completion of development that would generate 80 percent of the PM peak hour project traffic, assuming construction of the I-5/Cosumnes River Boulevard interchange and the Cosumnes River Boulevard Extension west to Freeport Boulevard.*

5.9-7 Implementation of the project under Baseline plus Project conditions could affect the Meadowview Road/24th Street intersection.

Under Baseline Plus Project conditions, the Meadowview Road/24th Street intersection would degrade from LOS C to LOS D during the AM peak hour and continue to operate at LOS D but experience an increase of more than five seconds in delay during the PM peak hour. Therefore, this is considered a *significant impact*.

Mitigation Measure

The Meadowview Road/24th Street intersection would operate at LOS C during the AM and PM peak hour. Widening this intersection to construct an additional lane is considered infeasible because additional right-of-way is required which is beyond the applicant's control. Widening the road could require the removal of existing buildings, which may not be feasible. Additionally, increasing the number of travel lanes at this location which is close to an existing community center is not considered pedestrian friendly and does not meet the City's Smart Growth Policies; therefore, the impact would remain **significant and unavoidable**.

5.9-7 *A second exclusive southbound left-turn lane shall be constructed and retiming of the traffic signal shall be completed to provide an overlap phase for the northbound right-turn/eastbound left-turn movements.*

5.9-8 Under Baseline Plus Project conditions, the Meadowview Road/Manorside Drive intersection may exceed the peak hour traffic signal warrant.

The Meadowview Road/Manorside Drive intersection would exceed the peak hour traffic signal warrant under Baseline Plus Project conditions. This is considered a *significant impact*.

Mitigation Measure

The Meadowview Road/Manorside Drive intersection would operate at LOS B during the AM and PM peak hours, and would reduce the project's contribution to this baseline impact to **less than significant**, with implementation of Mitigation Measure 5.9-8.

5.9-8 *The project applicant shall install a traffic signal at the Meadowview Road/Manorside Drive intersection before completion of development that would generate 70 percent of the PM peak hour project traffic, assuming construction of the I-5/Cosumnes River Boulevard interchange and the Cosumnes River Boulevard Extension west to Freeport Boulevard.*

5.9-9 Under Baseline Plus Project conditions, the project would have a significant impact on freeway operations.

The proposed project would contribute to an increase in traffic volumes on the state highway system in the project area that would result in state highways operating below acceptable levels of service. It should be noted that all of the impacts would occur with or without the project. Implementation of the project would result in *significant traffic impacts* on the freeway ramp junctions and segments listed below:

- I-5/Pocket Road Interchange: Northbound Off-Ramp diverge (AM)
- I-5/Pocket Road Interchange: Northbound Loop On-Ramp merge (AM)
- I-5/Pocket Road Interchange: Northbound Slip On-Ramp merge (AM)
- I-5/Pocket Road Interchange: Southbound Off-Ramp diverge (PM)

- I-5/Pocket Road Interchange: Southbound Loop On-Ramp merge (PM)
- I-5/Pocket Road Interchange: Southbound Slip On-Ramp merge (PM)
- I-5/Cosumnes River Boulevard Interchange: Northbound Off-Ramp diverge (AM)
- I-5/ Cosumnes River Boulevard Interchange: Northbound Loop On-Ramp merge (AM)
- I-5/ Cosumnes River Boulevard Interchange: Northbound Slip On-Ramp merge (AM)
- I-5/ Cosumnes River Boulevard Interchange: Southbound Off-Ramp diverge (PM)
- I-5/ Cosumnes River Boulevard Interchange: Southbound Loop On-Ramp merge (PM)
- I-5/ Cosumnes River Boulevard Interchange: Southbound Slip On-Ramp merge (PM)
- SR 99/Cosumnes River Boulevard Interchange: Northbound Off-Ramp diverge (PM)
- I-5 Mainline North of Meadowview Road: Northbound (AM)
- I-5 Mainline North of Meadowview Road: Southbound (PM)
- I-5 Mainline North of Cosumnes River Boulevard: Northbound (AM)
- I-5 Mainline North of Cosumnes River Boulevard: Southbound (PM)
- I-5 Mainline North of Laguna Boulevard: Northbound (AM)
- I-5 Mainline North of Laguna Boulevard: Southbound (PM)
- SR 99 Mainline South of Cosumnes River Boulevard: Northbound (PM)

Mitigation Measure

According to Delta Shores Finance Plan, the project applicant shall be required to pay fair share development impact fees towards the I-5/ Cosumnes River Boulevard interchange construction project. Additionally, the City is participating in a multi-agency committee that is developing a regional impact fee for the I-5 corridor to mitigate mainline freeway congestion. The South-line Light Rail Extension project may be included as one of the I-5 corridor improvements that could be funded under this regional impact fee. The project applicant shall be required to pay the I-5 corridor impact fee that is in effect at the time of issuance of building permits. However, the contribution of these funds does not ensure that the project's impacts on the mainline freeway system would be fully mitigated. Therefore the impact of the project would remain **significant and unavoidable**.

5.9-9 *The project applicant shall be required to pay a fair share development impact fees toward the I-5/Cosumnes River Boulevard interchange construction and the I-5 corridor impact fee that is in effect at the time of issuance of building permits.*

5.9-10 Under Baseline Plus Project conditions, the project would have a significant impact on existing transit operations.

Public Transit is not currently provided to the project site. At the time the project application was submitted to the City, no plans for provision of public transit services were proposed. The South

Line Light Rail extension project includes a station about 1 mile to the east of the project area (Morrison Creek Station), but the time line of this light rail extension project is not known. The project would increase demand for public transit facilities and could adversely impact existing programs that support public transit by requiring that new bus routes be provided or that existing bus routes be modified. This is considered a *significant impact*.

Mitigation Measure

The provision of on-site bus stop and shelter facilities on the site plan, subject to the approval of the Department of Transportation – Traffic Engineering Division, and provision of new bus routes and/or rerouting existing bus services through the project area to the future light rail station or to downtown Sacramento would reduce the project's contribution to this impact to ***less than significant***.

5.9-10 *The project applicant shall coordinate with Regional Transit to provide transit facilities to serve the project area. This may include but not limited to, creating new bus routes or/ add rerouting existing bus services through the project area to connect the project site with the future light rail station at Morrison Creek or to Meadowview station or to downtown Sacramento. The project applicant, in coordination with Regional Transit, shall also identify the specific locations of sheltered transit stops with bus turnouts. The City of Sacramento Traffic Engineering Division, working in conjunction with Regional Transit, shall approve the location, design, and implementation timing of the sheltered transit stops and bus turnouts prior to the issuance of building permits. Construction of these on-site bus stop facilities shall be phased consistent with the phased development of the project. Once demand for public transit services reaches 50 service requests, the project applicant shall coordinate to begin to provide transit services and shall increase those services in proportion to the development levels and increased rider ship levels occurring on the project site. Final design and operation of the transit service would be subject to the approval of the City and other proposed operating agencies (e.g., RT).*

5.9-11 Under Baseline Plus Project conditions, the project would not adversely affect existing bicycle or pedestrian facilities.

Implementation of the proposed project would not adversely affect existing facilities. The project would provide new sidewalks and both on-street and off-street bike facilities to encourage and support pedestrian and bicycle travel in the area. The project would construct a grade-separated pedestrian bridge across Cosumnes River Boulevard (between Street B and 24th Street) and across Delta Shores Circle South (between the D Street loop). The project would construct the I-5/Cosumnes River Boulevard interchange that will include a pedestrian-friendly design of the signalized ramp junctions. Therefore, there would be a ***less-than-significant impact*** on the existing bicycle and pedestrian system.

Mitigation Measure

None required.

5.9-12 Under Baseline Plus Project conditions, the proposed project would have a significant impact on existing roadways based on the routing of construction traffic.

Construction activities would include disruptions to the transportation network near the project site, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures. Pedestrian and transit access may also be disrupted. These activities could result in degraded roadway conditions. Therefore, the impacts are considered *significant*.

Mitigation Measure

Preparation of a Construction Traffic and Parking Management Plan, subject to the approval of the City traffic engineer, would reduce the project's contribution to this impact to ***less than significant***, with implementation of Mitigation Measure 5.9-12.

5.9-12 *Implement Mitigation Measure 5.9-5.*

Cumulative Impacts and Mitigation Measures

5.9-13 Under Cumulative plus Project conditions the segment of Cosumnes River Boulevard from I-5 to Delta Shores Circle could be impacted by the project.

Under Cumulative Plus Project conditions, the segment of Cosumnes River Boulevard from I-5 through the project site to Delta Shores Circle would degrade from LOS A to LOS D. This is considered a *significant impact*.

Mitigation Measure

Widening Cosumnes River Boulevard, between I-5 and Delta Shores Circle (west), to eight lanes would improve the operation of this segment, but is considered infeasible because it would require increasing the number of travel lanes planned for Cosumnes River Boulevard from 6 to 8 lanes (6 lanes planned with the approved I-5/Cosumnes River Boulevard Interchange EIR). Additionally, widening Cosumnes River Boulevard to eight lanes road would be inconsistent with the City's goals and objectives to create pedestrian-friendly streets and the Smart Growth policies. Therefore, the project's contribution would remain a ***significant and unavoidable impact***.

5.9-13 *The project applicant shall widen Cosumnes River Boulevard, between I-5 and Delta Shores Circle (west), to eight lanes.*

5.9-14 Under Cumulative plus Project conditions the segment of Detroit Boulevard south of Meadowview Road could be impacted by the project.

Under Cumulative Plus Project conditions, the segment of Detroit Boulevard south of Meadowview Road would operate at LOS F conditions under both the Cumulative No Project and Cumulative Plus Project scenarios. The project would result in an increase in v/c of 0.10, which exceeds the 0.02 threshold. Therefore, this is considered a *significant cumulative impact* and the project's contribution would be considerable.

Detroit Boulevard and 24th Street are parallel two-lane streets south of Meadowview Road. 24th Street is designated as a collector in the City of Sacramento General Plan, while Detroit Boulevard is a local street. Collector streets provide medium-speed/medium volume access within and between neighborhoods, while local streets are low-speed/low-volume roadways that provide direct access to abutting land uses. 24th Street is a four lane facility north of Meadowview Road, and would be constructed as a four-lane facility within the Delta Shores project. The existing two-lane section of 24th Street, south of Meadowview Road, could be re-stripped to provide four through travel lanes. If the existing two-lane section of 24th Street is not re-stripped to provide four through lanes, the two-lane segment would become a congested bottleneck and future traffic would shift to parallel facilities such as Detroit Boulevard.

Mitigation Measure

Re-stripping 24th Street, from Meadowview Road south to the northerly boundary of the project site, to four lanes would mitigate the impact of the project on Detroit Boulevard to less than significant and would result in a less than 0.02 increase in roadway v/c. However, widening 24th Street to four lanes is considered infeasible since it would require additional right-of-way which is not available. Additionally, several existing residential buildings on both sides of the street would be impacted by eliminating all on street parking and bike lanes which is not consistent with the City's Pedestrian Friendly standards and Smart Growth Policies. Therefore there is no feasible mitigation, and the impact would remain **significant and unavoidable**.

5.9-15 Under Cumulative plus Project conditions the Meadowview Road/Freeport Boulevard intersection could be impacted by the project.

Under Cumulative Plus Project conditions, the Meadowview Road/Freeport Boulevard intersection would degrade from LOS C to LOS D during the AM peak hour and continue to operate at LOS D, but experience an increase of more than five seconds in delay during the PM peak hour. Therefore, this is considered a *significant impact* and the project's contribution would be considerable.

Mitigation Measure

The Meadowview Road/Freeport Boulevard intersection would operate at LOS C during the AM and PM peak hour with implementation of Mitigation Measure 5.9-15. Implementation of this improvement would result in acceptable conditions and reduce the project's contribution to this impact to **less than significant**.

5.9-15 *The project applicant shall pay a fair share towards the addition of a second exclusive southbound left turn lane, an exclusive southbound right turn lane, and shall pay a fair share to recover costs for the City's Traffic Operations Center monitoring and retiming of modifications to the traffic signal to provide an overlap phase for the southbound right turn/eastbound left turn movements at the intersection of Meadowview Road/Freeport Boulevard.*

5.9-16 Under Cumulative plus Project conditions the Meadowview Road/24th Street intersection could be impacted by the project.

Under Cumulative Plus Project conditions, the Meadowview Road/24th Street intersection would degrade from LOS D to LOS E during the AM peak hour and continue to operate at LOS F, but experience an increase of more than five seconds in delay during the PM peak hour. Therefore, this is considered a *significant impact*.

Mitigation Measure

The Meadowview Road/24th Street intersection would operate at LOS C during the AM peak hour and LOS D during the PM peak hour by adding a second exclusive southbound left-turn lane and retiming the traffic signal to provide an overlap phase for the northbound right-turn and eastbound left-turn movements. Widening this intersection is considered infeasible because additional right-of-way is required which is beyond the applicant's control since existing buildings would also be affected. Additionally, increasing the number of travel lanes at this location, which is close to an existing community center is not considered pedestrian friendly and does not meet the City's Smart Growth Policies. Therefore, there is no feasible mitigation, and the impact would remain ***significant and unavoidable***.

5.9-17 Under Cumulative plus Project conditions the Mack Road/Franklin Boulevard intersection could be impacted by the project.

Under Cumulative Plus Project conditions, the Mack Road/Franklin Boulevard intersection would degrade from LOS D to LOS E during the PM peak hour, with an increase in average delay of more than 5 seconds. Therefore, this is considered a *significant impact*.

Mitigation Measure

The Mack Road/Franklin Boulevard intersection would operate at LOS D during the PM peak hour with implementation of Mitigation Measure 5.9-17. Implementation of this improvement would result in a less than five second increase in delay during the AM and PM peak hour and would reduce the project's contribution to this cumulative impact to ***less than significant***.

5.9-17 *The project applicant shall pay a fair share to recover costs for the City's Traffic Operations Center monitoring and retiming of the traffic signal to provide an overlap phase for the eastbound right-turn/northbound left-turn movements at the intersection of Mack Road/Franklin Boulevard.*

5.9-18 Under Cumulative plus Project conditions the Cosumnes River Boulevard/Franklin Boulevard intersection could be impacted by the project.

Under Cumulative Plus Project conditions, the Cosumnes River Boulevard/Franklin Boulevard intersection would continue to operate at LOS E during the AM peak hour and degrade from LOS D to LOS E during the PM peak hour, with an increase in average delay of more than 5 seconds.

Therefore, this is considered a *significant impact* and the project's contribution would be considerable.

Mitigation Measure

The Cosumnes River Boulevard/Franklin Boulevard intersection would operate at LOS E during the AM peak hour and LOS D during the PM peak hour. The Cosumnes River Boulevard/Franklin Boulevard intersection would continue to operate at an unacceptable LOS in the AM and PM peak hour with implementation of Mitigation Measure 5.9-18. However, implementation of this improvement would result in a less than five second increase in delay during the AM and PM peak hour and would reduce the project's contribution to this cumulative impact to ***less than significant***.

5.9-18 *The project applicant shall pay a fair share towards the addition of a second exclusive northbound left-turn lane at the intersection of Cosumnes River Boulevard/Franklin Boulevard.*

5.9-19 Under Cumulative plus Project conditions the Cosumnes River Boulevard/Freeport Boulevard intersection could be impacted by the project.

Under Cumulative Plus Project conditions, assuming the Cosumnes River Boulevard/Freeport Boulevard intersection would have the same lane geometry approved in the I-5/Cosumnes River Boulevard Interchange Project DEIR (April 2007), the Cosumnes River Boulevard/Freeport Boulevard intersection would continue to operate at LOS E, but experience an increase of more than five seconds in delay during the PM peak hour. Therefore, this is considered a *significant impact* and the project's contribution would be considerable.

Mitigation Measure

Modification of the traffic signal to provide overlap phasing for the northbound right-turn/westbound left-turn movements at the intersection of Cosumnes River Boulevard/Freeport Boulevard, this intersection would operate at LOS D during the PM peak hour, and would reduce the impact to less than significant. However, the design of this intersection is included in the I-5/Cosumnes River interchange, currently in progress and some changes may occur to the interchange lane configuration during the Project, Specification and Estimate (PS&E) approval. Therefore, implementation of Mitigation Measure 5.9-19, would reduce the project's contribution to this cumulative impact to ***less than significant***.

5.9-19 *.The project applicant shall pay a fair contribution toward the construction of the Cosumnes River Boulevard/Freeport Boulevard intersection as defined in the Delta Shores Finance Plan.*

5.9-20 Under Cumulative plus Project conditions the Cosumnes River Boulevard/Delta Shores Circle (West) intersection could be impacted.

Under Cumulative Plus Project conditions, the Cosumnes River Boulevard/Delta Shores Circle (West) intersection would operate at LOS D during the AM peak hour and LOS E during the PM

peak hour. Therefore, this is considered a *significant impact* and the project's contribution would be considerable.

Mitigation Measure

The Cosumnes River Boulevard/Delta Shores Circle (West) intersection would operate at LOS D during the AM and PM peak hours with implementation of Mitigation Measure 5.9-20. Further widening of the Cosumnes River Boulevard between I-5 and Delta Shores Circle (West), which would be required to achieve LOS C conditions, would be inconsistent with the City's goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Therefore, the project's contribution would remain considerable and the impact would be considered ***significant and unavoidable***.

5.9-20 *The project applicant shall construct two southbound through lanes and two northbound through lanes on Delta Shores Circle South between Cosumnes River Boulevard and Street D (north). The project applicant shall pay a fair share towards modifying the planned westbound approach of the Cosumnes River Boulevard/I-5 northbound ramps intersection to provide two through lanes and two exclusive right-turn (mixed flow) lanes. This configuration would allow mixed flow vehicles to use both westbound right-turn lanes to enter the northbound on-ramp. This differs from the planned configuration which only allows high occupancy vehicles (HOV) to turn right from a shared through/right-turn lane. The HOV bypass lane would begin just downstream on the northbound on-ramp.*

5.9-21 Under Cumulative plus Project conditions the Meadowview Road/Manorside Drive intersection could be impacted by the project.

Under Cumulative Plus Project conditions, the Meadowview Road/Manorside Drive intersection would exceed the peak hour traffic signal warrant under cumulative plus project conditions. Therefore, this is considered a *significant impact* and the project's contribution would be considerable.

Mitigation Measure

The Meadowview Road/Manorside Drive intersection would operate at LOS B during the AM and PM peak hours, and would reduce the project's contribution to this cumulative impact to ***less than significant***, with implementation of Mitigation Measure 5.9-21.

5.9-21 *Implement the Mitigation Measure 5.9-8.*

5.9-22 Under Cumulative plus Project conditions the I-5 SB Off-Ramp at Cosumnes River Boulevard – queues could be impacted by the project.

The vehicle queues for the southbound left turn movement from I-5 onto Cosumnes River Boulevard would exceed the storage capacity of the ramp under Cumulative Plus Project conditions assuming the interchange would have the same lane geometry approved in the I-5/Cosumnes River Boulevard Interchange Project DEIR (April 2007). The design of this interchange is currently in progress and

some changes may occur to the interchange lane configuration during the PS&E approval. Therefore, this is considered a *significant impact* and the project's contribution would be considerable.

Mitigation Measure

The vehicle queues on the southbound I-5 off-ramp at Cosumnes River Boulevard would be less than the storage capacity of the ramp, and would reduce the project's contribution to this cumulative impact to ***less than significant***, with implementation of Mitigation Measure 5.9-22.

5.9-22 *The project applicant shall pay a fair contribution toward the construction of the interchange as defined in the Delta Shores Finance Plan and the cost of widening the southbound off ramp and I-5 overcrossing additional eastbound lane. Design of the interchange is not finalized at this time and may change during the PS&E approval process.*

5.9-23 Under Cumulative Plus Project conditions, the project would have a significant cumulative impact on freeway operations.

The proposed project, in combination with anticipated development in the area, would contribute to an increase in traffic volumes on the state highway system in the project area that would result in state highways operating below acceptable levels of service. It should be noted that all of the impacts would occur with or without the project. Implementation of the project would result in *significant traffic impacts* to the freeway ramp junctions and segments listed below:

- I-5/Pocket Road Interchange: Northbound Off-Ramp diverge (AM)
- I-5/Pocket Road Interchange: Northbound Loop On-Ramp merge (AM)
- I-5/Pocket Road Interchange: Northbound Slip On-Ramp merge (AM)
- I-5/Pocket Road Interchange: Southbound Off-Ramp diverge (PM)
- I-5/Pocket Road Interchange: Southbound Loop On-Ramp merge (PM)
- I-5/Pocket Road Interchange: Southbound Slip On-Ramp merge (PM)
- I-5/Cosumnes River Boulevard Interchange: Northbound Off-Ramp diverge (AM)
- I-5/ Cosumnes River Boulevard Interchange: Northbound Loop On-Ramp merge (AM)
- I-5/ Cosumnes River Boulevard Interchange: Northbound Slip On-Ramp merge (AM)
- I-5/ Cosumnes River Boulevard Interchange: Southbound Off-Ramp diverge (PM)
- I-5/ Cosumnes River Boulevard Interchange: Southbound Loop On-Ramp merge (PM)
- I-5/ Cosumnes River Boulevard Interchange: Southbound Slip On-Ramp merge (PM)
- SR 99/Cosumnes River Boulevard Interchange: Northbound Off-Ramp diverge (AM & PM)
- I-5 Mainline North of Meadowview Road: Northbound (AM)

- I-5 Mainline North of Meadowview Road: Southbound (PM)
- I-5 Mainline North of Cosumnes River Boulevard: Northbound (AM)
- I-5 Mainline North of Cosumnes River Boulevard: Southbound (PM)
- I-5 Mainline North of Laguna Boulevard: Northbound (AM)
- I-5 Mainline North of Laguna Boulevard: Southbound (PM)
- SR 99 Mainline South of Cosumnes River Boulevard: Northbound (PM)

Mitigation Measure

According to the Delta Shores Finance Plan, the project applicant shall be required to pay its fair share development impact fees toward the I-5/Cosumnes River Boulevard interchange construction costs. Additionally, the City is participating in a multi-agency committee that is developing a regional impact fee for the I-5 corridor to mitigate mainline freeway congestion. The South-line Light Rail Extension project may be included as one of the I-5 corridor improvements that could be funded under this regional impact fee. The project applicant shall be required to pay the I-5 corridor impact fee that is in effect at the time of issuance of building permits. However, the contribution of these funds does not ensure that the project's impacts on the mainline freeway system would be fully mitigated. Therefore the impact of the project would remain **significant and unavoidable**.

5.9-23 *Implement Mitigation Measure 5.9-9.*

5.9-24 Under Cumulative Plus Project conditions, the project would have a significant impact on existing transit operations.

The project could adversely impact existing programs that support public transit by requiring that new bus routes be provided or that existing bus routes be modified. The project would increase demands for public transit facilities. This is considered a *significant impact*.

Mitigation Measure

The provision of on-site bus stop and shelter facilities on the site plan, subject to the approval of the Department of Transportation – Traffic Engineering Division, and provision of new bus routes and/or rerouting existing bus services through the project area would reduce the project's contribution to this cumulative impact to **less than significant**, with implementation of Mitigation Measure 5.9-24.

5.9-24 *Implement Mitigation Measure 5.9-10.*

5.9-25 Under Cumulative Plus Project conditions, the project would not adversely affect existing bicycle or pedestrian facilities resulting in a less-than-significant cumulative impact.

Implementation of the proposed project would not adversely affect existing bicycle or pedestrian facilities. The project would provide new sidewalks and both on-street and off-street bike facilities to

encourage and support pedestrian and bicycle travel in the area. The project would construct a grade-separated pedestrian bridge across Cosumnes River Boulevard (between Street B and 24th Street) and across Delta Shores Circle South (between the D Street loop). The project would construct the I-5/Cosumnes River Boulevard interchange that would include a pedestrian-friendly design of the signalized ramp junctions. Therefore, there would be a ***less-than-significant impact*** on the existing bicycle and pedestrian system.

Mitigation Measure

None required.

5.10 GLOBAL CLIMATE CHANGE

5.10 GLOBAL CLIMATE CHANGE

INTRODUCTION

There is a general scientific consensus that worldwide climate change is occurring, caused in whole or in part, by increased emissions of greenhouse gases that keep the Earth's surface warm by trapping heat in the Earth's atmosphere. Climate change is a global issue caused by the cumulative effects of millions of individual decisions. Development projects may contribute incrementally to climate change, but with no measurable direct impacts. This section addresses greenhouse gas (GHG) emissions that can reasonably be associated with construction and operation of the proposed project and the potential for those emissions to contribute individually or cumulatively to global climate change.

Although this section attempts to quantify the likely GHG emissions of the project, it is generally agreed that climate change is caused by the cumulative impact of many projects over time and that the emissions of any one project cannot be demonstrated to be substantial enough to have any material impact on global climate change. See, *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* by the Association of Environmental Professionals (hereinafter AEP). As such, this DEIR evaluates the impact of the project on climate change as a cumulative impact and not as a project specific impact. It is important to note that the discussion of cumulative impacts in an EIR need only examine the severity of impacts and their likelihood of occurrence, but is not required to provide as great detail as is provided for the effects attributable to the project (CEQA Guidelines section 15130(b)).

Most human activities, including construction and occupation of residential and commercial/retail developments, result in GHG emissions. Greenhouse gas emissions occur in connection with many activities associated with development, including emissions related to construction equipment, building materials, vegetation clearing, natural gas usage, electrical usage (since electricity generation by conventional means is a major contributor to GHG emissions) and transportation. This section focuses on the larger sources of anthropogenic (human caused) GHG emissions, such as transportation related emissions, energy consumption emissions, and solid waste emissions which are the major sources of GHGs including carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄). In this section, these emissions are quantified for the project while other potential sources of GHGs are discussed qualitatively.

Background information for this Section's analysis includes quantitative data from the Sacramento Metropolitan Air Quality Management District (SMAQMD); the Sacramento Municipal Utility District (SMUD); the Sacramento Area Council of Governments (SACOG); the California Air Resources Board (CARB) website; AEP; the Office of the California Attorney General Global Warming Mitigation Measures (see Appendix K); and *More Than an Inconvenient Truth: Making Sense of the California Global Warming Solutions Act of 2006* by Morrison & Foerester, LLP. Qualitative information was also included from the Intergovernmental Panel on Climate Change (IPCC) Climate Change 2007: Fourth Assessment Report.

Notwithstanding the level of scientific attention that has been devoted to global warming and the project-related detail provided in this section, no accepted analytical methodology currently exists to determine the significance of a project's impact on global climate change either on a stand-alone basis or cumulatively. Therefore, this section does not identify a threshold of significance or make a significance determination as to the project's cumulative contribution to global climate change. That does not mean that this project has ignored the issue or has failed to include measures that would mitigate GHG emissions. Rather, as further discussed below, the City has made a determination that in the absence of definitive standards, a determination as to whether a project has a significant effect, on a stand alone basis or cumulatively with other human activity, would require speculation and is not required by CEQA.

This section evaluates the project's impact on global climate change in two ways. First, the DEIR examines the consistency of the project with the numerous existing plans and planning efforts undertaken by the City to address and reduce GHG emissions. The project was determined to be consistent with these plans due to the incorporation of project design features. These features include the fact that the project is an infill project of sufficient density, contains a mix of uses (primarily residential and retail development) and provides for pedestrian accessibility, is located within 5 miles of major job centers including downtown Sacramento, and is situated along major north-south and east-west transportation corridors. As such, the project is the type of sustainable and smart growth planning called for in local and regional plans consistent with GHG emission reduction.

The project is evaluated based on its gross GHG emissions, which are estimated for construction and for major operational sources. This section also: (1) describes the reasons for the City's determination that it cannot make a finding of significance or insignificance of the project's individual or cumulative impacts at this time; (2) provides empirical information relative to the existing environmental setting as it relates to greenhouse gases, including international, national and state efforts to evaluate and reduce greenhouse gases; and (3) identifies the project design features and specific mitigation measures that are being employed to reduce the project's contribution to greenhouse gas emissions.

ENVIRONMENTAL SETTING

Global climate change¹ refers to the change in the average weather of the Earth that may be measured by changes in wind patterns, storms, precipitation, and temperature. Projected climate changes could impact California's public health through changes in air quality, weather-related disasters, precipitation and water supply. If extreme precipitation and severe weather events

1 Global climate change and global warming are both terms that describe long-term changes in the earth's climate. "Global climate change" is a broader term used to describe any worldwide, long-term change in the earth's climate (e.g., increase or decrease in temperatures, the start or end of an ice age, or a shift in precipitation patterns). The term "global warming" is more specific and refers to a general increase in temperatures across the earth. Though global warming is characterized by rising temperatures, it can cause other climatic changes, such as a shift in the frequency and intensity of weather events. Global warming does not necessarily imply that all locations will be warmer. Individual locations may be cooler even though the world, on average, is warmer. All of these changes fit under the umbrella of global climate change.

become more frequent, and if sanitation and water-treatment facilities have inadequate capacity or are not maintained, increases in infectious diseases may result.² The baseline by which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. Many of the recent concerns over global climate change use this data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations IPCC constructed several emission trajectories of GHG emissions needed to stabilize global temperatures and climate change impacts. The IPCC predicted that the increase in global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1°C to 6.4°C. Regardless of analytical methodology, global average temperature and sea level are expected to rise under all scenarios.³

The IPCC Fourth Assessment Report makes it clear that the impacts of future climate change will be mixed across regions. For example, according to the IPCC Report, there may be large differences in regional population, income and technological development under alternative scenarios, which are often a strong determinant of the level of vulnerability to climate change. To illustrate, in a number of recent studies of global impacts of climate change on food supply, risk of coastal flooding and water scarcity, the projected number of people potentially affected is considerably greater in areas characterized by relatively low per capita income and large population growth. This difference is largely explained, not by differences in changes of climate, but by differences in vulnerability.⁴

Impacts of Global Climate Change at the Local Level

Studies have shown that climate change effects in California may include changes in air quality, water supply, hydrology (including sea level rise), agriculture, and ecosystems/wildlife. Those that might impact the proposed project are described below.

Air Quality: Global climate change could result in higher average temperatures that are conducive to air pollution formation, thereby worsening air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, is uncertain. For other pollutants, the effects of climate change and/or weather are less well studied, and less well understood.⁵ If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus

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- 2 California Environmental Protection Agency (Cal EPA), AB 1493 (Pavley) Briefing Package Global Warming and Greenhouse Gas Emissions from Motor Vehicles, undated.
 - 3 Intergovernmental Panel on Climate Change, 2007. R.B. Alley et al. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Summary for Policymakers.
 - 4 Intergovernmental Panel on Climate Change, 2007. R.B. Alley et al. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Summary for Policymakers.
 - 5 United States Environmental Protection Agency (US EPA). Climate Change – Health and Environmental Effects: Health. Washington D.C.: US EPA. <www.epa.gov/climatechange/effects/health.html>.

ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state.⁶

Hydrology: As discussed above, global climate change could potentially affect the amount of snowfall, rainfall and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes: expansion of sea water as the oceans warm, and the melting of ice over land. A rise in sea levels could result in coastal flooding and erosion. In particular, saltwater intrusion would threaten the quality and reliability of the state's major fresh water supply that is pumped from the southern edge of the Sacramento/San Joaquin River Delta into the system of aqueducts which carry it to southern California. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Ecosystems and Wildlife: Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. In 2004, the Pew Center on Global Climate Change released a report examining the possible impacts of climate change on ecosystems and wildlife.⁷ The report outlines four major ways in which it is thought that global climate change could affect plants and animals: (1) timing of ecological events; (2) geographic range; (3) species composition within communities; and (4) ecosystem processes such as carbon cycling and storage.

Current research efforts focus on determining the potential for changes in the geographic range and species composition of California's major bioregions. The notion that the primary habitat constituents of California's bioregions are determined by precipitation, temperature, frequency of extreme weather events and fire has led some scientists to create dynamic vegetation models designed to reconstruct vegetation community structure in response to atmospheric composition changes. The output of these models suggests that if the future proves to be warmer and drier, areas of coastal sage scrub and chaparral throughout southern and central California might convert to annual grasslands, while in northern portions of the state, particularly the Sierra Nevada, alpine evergreen forest habitats could be lost if temperatures at higher elevations increase. Under a warmer/wetter scenario, however, different impacts would be anticipated. These sorts of large-scale vegetation community changes, should they occur, could result in substantial impacts to species that currently occur within narrow habitat requirements. This is particularly true for populations that occur near the geographic limits of their ranges.

6 California Climate Change Center. Our Changing Climate: Assessing the Risks to California. Sacramento, CA: CalEPA. <www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.pdf>, July 2006.

7 Parmesan, C. and H. Galbraith. Observed Impacts of Global Climate Change in the U.S. (prepared for the Pew Center on Global Climate Change). Arlington, VA, <www.pewclimate.org/document.cfm?documentID=371>, November 2004.

Currently available climate models were designed to understand global trends (see e.g., Lenihan 2007 and Lenihan 2003^{8,9}) and do not have the specificity to provide detailed information on localized temperature, precipitation, or biological conditions. Predicting future conditions within the major bioregions of California, not to mention in any single county or city, is beyond the confidence range of any current climate change model. The models used to forecast localized changes to vegetation and species distribution are based on estimates and projections, and include many layers of uncertainty that result in identification of “potential patterns.” The details of these patterns are not statistically quantifiable and are appropriately considered to be in the realm of theories that are difficult, if not impossible, to test, and are fairly viewed as scientific speculation. As such, environmental analysis cannot reliably use these models to anticipate impacts or mitigations useful in the CEQA process.

Greenhouse Gas Emissions

Gases that trap heat in the atmosphere are called GHGs, analogous to the way a greenhouse retains heat. Common GHG include water vapor, CO₂, CH₄, nitrous oxides (NO_x), chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), ozone, and aerosols. Global atmospheric concentrations of CO₂, CH₄ and N₂O have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years. The accumulation of GHG in the atmosphere regulates the earth’s temperature. Without the natural heat trapping effect of GHG, the earth’s surface would be about 34 degrees °C cooler.¹⁰ However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Any particular gas or aerosol has a “global warming potential” (GWP) that is based on its ability to trap heat in the atmosphere. Individual GHGs have varying GWP and atmospheric lifetimes (see Table 5.10-1 below). The CO₂ equivalent (CO₂e) is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent metric. The reference gas for GWP is CO₂-- CO₂ has a GWP of one. By comparison, CH₄’s GWP is 21, which indicates that CH₄ has a greater global warming effect than CO₂ on a molecule-by -molecule basis.¹¹

Of all GHGs in the atmosphere, water vapor is the most abundant, important, and variable. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include

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- 8 Lenihan, J.M. February 2007. *California Climate Change Center. The Response of Vegetation Distribution, Ecosystem Productivity, and Fire in California to Future Climate Scenarios Simulated by the MC1 Dynamic Vegetation Model.*
- 9 Lenihan, J. M.; Drapek R.; and Bachelet D. 2003 and Climate Change Effects on Vegetation Distribution, Carbon, and Fire in California. *Ecological Applications* 13(6), pp. 1667-1681.
- 10 Cal EPA, Climate Action Team. March 2006. Climate Action Team Report to Governor Schwarzenegger and the California Legislature.
- 11 U.S. Environmental Protection Agency. 2006. Non CO₂ Gases Economic Analysis and Inventory. Global Warming Potentials and Atmospheric Lifetimes.

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50-200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Tetrafluoromethane (CF ₄)	50,000	6,500
PFC: Hexafluoroethane (C ₂ F ₆)	10,000	9,200
Sulfur Hexafluoride (SF ₆)	3,200	23,900

Source: U.S. Environmental Protection Agency. 2006. Non CO₂ Gases Economic Analysis and Inventory. Global Warming Potentials and Atmospheric Lifetimes, <www.epa.gov/nonco2/econ-inv/table.html>, accessed December 20, 2006.

evaporation from other water bodies, sublimation (change from solid to gas) from ice and snow, and transpiration from plant leaves.

Primary Sources of GHG Emissions.

Carbon dioxide (CO₂) is an odorless, colorless gas, which has both natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing.

Anthropogenic sources of CO₂ are from burning coal, oil, natural gas, and wood. Concentrations of CO₂ were 379 parts per million (ppm) in 2005, which is an increase of 1.4 ppm per year since 1960.¹² In California, the most common GHG is CO₂, which constitutes approximately 84 percent of all GHG emissions.¹³ CO₂ emissions in California are mainly associated with in-state fossil fuel combustion and with fossil fuel combustion in out-of-state power plants supplying electricity to California. Other activities that produce CO₂ emissions include mineral production, waste combustion, and land use changes that reduce vegetation.

Methane (CH₄) is a flammable gas and is the main component of natural gas. When one molecule of CH₄ is burned in the presence of oxygen, one molecule of CO₂ and two molecules of water are released. There are no adverse health effects from CH₄. A natural source of CH₄ is from the anaerobic decay of organic matter. Geologic deposits, known as natural gas fields, also contain CH₄, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle.

Nitrous oxide (N₂O), also known as laughing gas, is a colorless GHG. Higher concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing

12 Intergovernmental Panel on Climate Change. 2007. R.B. Alley, et al. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Summary for Policymakers.

13 California Energy Commission. December 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. Staff Final Report.

nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used in rocket engines, racecars, and as an aerosol spray propellant.

Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in CH₄ or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987.

Hydrofluorocarbons (HFCs) are synthetic man-made chemicals that are used as a substitute for CFCs for automobile air conditioners and refrigerants.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above the earth's surface are able to destroy the compounds. PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane and hexafluoroethane. Concentrations of tetrafluoromethane in the atmosphere are over 70 parts per trillion (ppt).¹⁴ The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur hexafluoride (SF₆) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest GWP of any gas evaluated, 23,900. Concentrations in the 1990s were about 4 ppt (EPA 2006d). Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Ozone is a GHG; however, unlike other GHG, ozone in the troposphere is relatively short-lived and, therefore, its effects are not globally important. It is difficult to make an accurate determination of the contribution of ozone precursors (NO_x and volatile organic compounds) to global climate change.¹⁵

Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Aerosols can also affect cloud formation. Sulfate aerosols are emitted when fuel-containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning or incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

14 U.S. Environmental Protection Agency. 2006. High Global Warming Potential (GWP) Gases. Science. <www.epa.gov/highgwp/scientific.html>, accessed December 2006.

15 Cal EPA, Air Resources Board. Technical Support Document for Staff Proposal Regarding Reduction of Greenhouse Gas Emissions from Motor Vehicles Climate Change Overview. July 21, 2004.

Federal and State GHG Inventory

In 2004, total worldwide GHG emissions were estimated to be 20,135 Tg CO₂e, excluding emissions/removals caused by removal of vegetation and forestry. as Forest and other vegetative land uses, such as agriculture and rain forest, absorb carbon and play an important role in the GHG inventory. Such land uses are referred to as “carbon sinks.”

In 2004, GHG emissions in the U.S. were 7,074.4 Tg CO₂e. In 2005, total U.S. GHG emissions were 7,260.4 Tg CO₂e, a 16.3 percent increase from 1990 emissions, while U.S. gross domestic product has increased by 55 percent over the same period. Emissions rose from 2004 to 2005, increasing by 0.8 percent. The primary causes of the increase were: (1) strong economic growth in 2005, leading to increased demand for electricity; and (2) an increase in the demand for electricity due to warmer summer conditions. However, a decrease in demand for fuels due to warmer winter conditions and higher fuel prices moderated the increase in emissions.

California is a substantial contributor of GHG emissions as the second largest contributor in the U.S. and the sixteenth largest in the world. In 2004, California produced 492 Tg CO₂e, which is approximately seven percent of the total nationwide GHG emissions. On the other hand, among the states, California has the 4th lowest per capita rate of GHG emissions, due to its temperate climate and to its enhanced energy regulations. The major source of GHG in California is transportation, contributing 41 percent of the State's total GHG emissions. Electricity generation is the second largest source, contributing 22 percent of the State's GHG emissions.¹⁶

Regulatory Context

International and Federal Climate Change Legislation

The Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol governs compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform. The Protocol provided that these compounds were to be phased out by 2000 (2005 for methyl chloroform). In 1988, the United Nations and the World Meteorological Organization established the IPCC to assess “the scientific, technical and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.”¹⁷

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments: "gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to

16 Association of Environmental Professionals, *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*. Final. June 29, 2007.

17 Intergovernmental Panel on Climate Change. 16 Years of Scientific Assessment in Support of the Climate Convention. December 2004.

expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change."¹⁸

A particularly notable result of UNFCCC efforts was a treaty known as the Kyoto Protocol. Countries sign the treaty to demonstrate their commitment to reducing GHG emissions or to engaging in emissions trading. More than 160 countries representing 55 percent of global emissions have ratified the protocol; however, the United States has not done so.

In October 1993, President Clinton announced his "Climate Change Action Plan," with the goal of returning GHG emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives, relying on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in GHG emissions. As of September 2007, 20 states have completed comprehensive Climate Action Plans that detail the steps that each state can take to reduce their contribution to climate change. However, without specific targets for emissions reductions, incentives for cleaner technologies, or other clear policies, climate action plans have not to date achieved real reductions in GHG emissions.¹⁹

The United States Environmental Protection Agency (US EPA) currently does not regulate GHG emissions from motor vehicles. Historically, US EPA had maintained that it did not have authority to regulate such emissions. However, the U.S. Supreme Court recently held that US EPA has a statutory authority to regulate emissions of GHG from motor vehicles if it determines that such emissions contribute to climate change. US EPA can now avoid regulating these emissions only if it determines that GHGs "do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do." To date, US EPA has not made any decision in this regard.

State

California Code of Regulations Title 24

Although it was not originally intended to reduce GHGs, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest amendments, made in October 2005, currently require new homes to use half the energy they used only a decade ago. Energy efficient buildings require less electricity, and electricity production by fossil fuels results in GHG emissions. Therefore, increased energy efficiency results in decreased GHG emissions.

18 Association of Environmental Professionals, *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*. Final. June 29, 2007.

19 Pew Center on Global Climate Change, Climate Action Plans, <www.pewclimate.org/what_s_being_done/in_the_states/action_plan_map.cfm>, accessed October 12, 2007.

California Assembly Bill 1493

California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimates that the regulations will reduce climate change emissions from the light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030.²⁰ The US EPA has refused to grant a waiver to California to enable it to enforce these regulations. In turn, the State, in conjunction with fifteen other states, has filed suit to overturn the waiver refusal. The heart of the complaint addresses the question of whether the states can regulate vehicle emissions under the federal Clean Air Act. While the State and Federal governments continue to wrestle with the issue of which governmental entity has authority to regulate vehicle emissions, it is clear that the State intends to aggressively pursue authority to regulate these emissions as envisioned by Assembly Bill 1493.

Executive Order S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. The California Climate Action Team's (CAT) Report to the Governor in 2006, contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met.²¹

California Assembly Bill 32

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHG emissions from stationary sources in California. GHG, as defined under AB 32 include CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. AB 32 requires CARB to adopt rules and regulations that would reduce GHG emissions equivalent to the statewide levels existing in 1990 by 2020. On or before June 30, 2007, CARB is required to publish a list of discrete early action GHG emission reduction measures that can be implemented by 2010. The law further requires that such measures achieve the maximum technologically feasible and cost effective reductions in GHGs from sources or categories of sources to achieve the statewide GHG emissions goal for 2020.

CARB has published its final report for Proposed Early Actions to Mitigate Climate Change in California, which describes recommendations for discrete early action measures to reduce GHG emissions. The report was approved by CARB in October, 2007, and it provides for 44 distinct early action measures as part of California's strategy for achieving GHG reductions under AB 32. One of the sources for the potential measures includes the CAT Report. CARB estimates that by 2020, the

20 California Air Resources Board. Fact Sheet, Climate Change Emission Control Regulations. December 10, 2004.

21 State of California, Environmental Protection Agency, Climate Action Team. Climate Action Team Report to Governor Schwarzenegger and the California Legislature. March 2006.

reductions from those 44 measures would be approximately 42 Tg of CO₂e.²² None of the CARB measures were directed at land use.

AB 32 also requires CARB to determine by January 1, 2008 what the statewide GHG emissions level was in 1990, and to approve a statewide GHG emissions goal that is equivalent to that level, to be achieved by 2020. On December 6, 2007, the CARB adopted Resolution 7-55, which set both the 1990 emissions level and the 2020 target at 427 Tg.²³ Based on estimated California GHG emissions in 2004 of 492 Tg, at least 65 Tg of GHG reduction (13.5%) will be required to achieve the standards established for 2020.

Under AB 32, CARB has the primary responsibility for reducing GHG emissions. However, the CAT Report contains strategies that can be undertaken by many other California agencies. In addition, CARB staff are working on several non-regulatory measures including guidance documents and protocols to encourage the public, local government and businesses to take positive steps to reduce GHG emissions.

Senate Bill 97

The provisions of Senate Bill 97, enacted in August 2007 as part of the State Budget negotiations, direct the Office of Planning and Research (OPR) to propose CEQA Guidelines advising local agencies how to mitigate the impacts of GHG emissions. OPR has been directed to promulgate such guidelines by July 2009, and the California Resources Agency has been directed to adopt such new guidelines by January 2010. At this time, however, there are no new CEQA Guidelines from OPR or the Resources Agency regarding the analysis of GHG or the threshold standards of significance to be used for CEQA purposes when evaluating the environmental impacts of projects. On June 19, 2008, OPR issued a Technical Advisory concerning global climate change and GHG emissions, but it did not contain any suggested thresholds of significance for GHG emissions. In that regard, OPR acknowledged that the global nature of climate change warrants investigation of a statewide threshold of significance for GHG emissions. Until such a threshold is established, OPR has instructed lead agencies to include a discussion of global climate change issues in CEQA documents and advised them of their right under CEQA to adopt their own individual standards of significance in the absence of any guidance from OPR and the Resources Agency, but noted that any individual standards and conclusions as to the significance of a project's cumulative climate change impacts must be supported by substantial evidence and be consistent with available guidance and current CEQA practice. As mentioned previously, there are currently no generally recognized and accepted scientific standards available to local governments at this time for determining the significance of an individual project's GHG emission impacts on a local level or on a cumulative level.

22 State of California, California Air Resources Board, October 26, 2007 Final Early Action Report, <www.arb.ca.gov/cc/ccea/meetings/ea_final_report.pdf>.

23 California Air Resources Board, December 6, 2007, Staff Report re: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, <www.arb.ca.gov/cc/ccei/inventory/1990_level.htm>.

Executive Order S-01-07

Governor Arnold Schwarzenegger enacted Executive Order S-01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The process for meeting the 2020 target includes coordination between the California Environmental Protection Agency, the University of California and the California Energy Commission to develop and propose a draft compliance schedule to meet the 2020 Target by June 30, 2007. The order also requires that a Low Carbon Fuel Standard for transportation be established for California.

Senate Bill 1368

Senate Bill (SB) 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 required the California Public Utilities Commission (PUC) to establish a GHG emission performance standard for baseload electricity generation from investor-owned utilities by February 1, 2007. Similarly, the CEC was tasked with establishing a similar standard for local publicly-owned utilities by June 30, 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas fired power plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from power plants that meet the standards set by the PUC and the CEC. In January 2007, the PUC adopted an interim GHG Emissions Performance Standard, which requires that all new long-term commitments for baseload electricity generation entered into by investor-owned utilities have emissions no greater than a combined cycle gas turbine power plant (i.e., 1,100 pounds of CO₂ per megawatt-hour). A "new long-term commitment" refers to new plant investments (new construction), new or renewal contracts with a term of 5 years or more, or major investments by the utility in its existing baseload power plants. In May 2007, the CEC approved regulations that prohibit the state's publicly owned utilities from entering into long-term financial commitments with power plants that exceed the standard adopted by the PUC of 1,100 pounds of carbon monoxide (CO) per megawatt hour.

Senate Bill 1078

SB 1078 establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 107, passed in 2006, to require compliance with that 20 percent requirement by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least 1 percent each year. The outcomes of this legislation will impact regional transportation powered by electricity.

Additional California Climate Change Initiatives

The Western Regional Climate Action Initiative was signed on February 26, 2007 by five states: Washington, Oregon, Arizona, New Mexico, and California. British Columbia, Canada joined on April 20, 2007. The Initiative calls for collaboration to identify, evaluate, and implement ways to reduce GHG emissions in the states collectively and to achieve related co-benefits. The Initiative calls for designing a regional market-based multi-sector mechanism, such as a load-based cap and

trade program by August 2008. In addition, a multi-state registry will track, manage, and credit entities that reduce GHG emissions. California is also exploring the possibility of cap and trade systems for GHGs. The Market Advisory Committee to CARB published draft recommendations for designing a GHG cap and trade system for California.²⁴

Local

City of Sacramento Policies and Plans Relevant to GHG Emissions and Climate Change

The City of Sacramento has acknowledged the importance of the reduction of GHG emissions and has acted upon those concerns in a variety of ways including adoption of the plans and programs associated with the Smart Growth Principles described below. The Delta Shores project includes many project design features consistent with these Smart Growth Principles, including, among other things, the incorporation of mixed use development, and the creation of a walkable community with a wide variety of housing types. In addition, the proposed project has been designed to place employment generating retail and commercial uses near existing/planned public transit services in order to reduce GHG emissions from mobile sources.

Smart Growth Principles

In 2001, the City of Sacramento adopted a series of Smart Growth Principles (Resolution 2001-805) that were, among other goals, designed to reduce the vehicle miles traveled (VMT) by encouraging infill development, intensification of densities, a reinvestment in the urban core, and a recognition of the importance of alternative means of transit among other relevant land use practices.

- Promote mixed land uses and support vibrant city centers.
- Take advantage of existing community assets emphasizing joint use of facilities.
- Create a range of housing opportunities and choices.
- Foster walkable, close-knit neighborhoods.
- Preserve open space, farmland, natural beauty, and critical environmental areas.
- Concentrate new development and target infrastructure investments within the urban core of the region.
- Provide a variety of transportation choices .
- Promote resource conservation and energy efficiency.
- Support land use, transportation management, infrastructure and environmental planning programs that reduce vehicle emissions and improve air quality.

Elements included in the proposed project designed to incorporate the city's Smart Growth Principles are described below.

24 Association of Environmental Professionals, *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*. Final. June 29, 2007.

1. Promote mixed land uses and support vibrant city centers

The project is designed to integrate a variety of land uses in a single master planned community. In addition to a broad range of residential uses, from multi-family affordable housing to traditional single-family homes, the project includes retail and commercial development to serve the community's needs for goods and services. The eastern portion of the project site is anchored by a mixed use town center that is proposed to include both a vertical and horizontal mixing of retail, residential and commercial uses in close proximity to public transit and recreational amenities.

2. Take advantage of existing community assets emphasizing joint use of facilities

As an infill development, the project has been designed to integrate into the surrounding community of Meadowview, to the north and east, and the small town of Freeport to the west. In an effort to take advantage of these existing communities, the project includes circulation connections to ensure access to existing community services like the Pannell Community Center and the Sacramento River Delta, by multiple modes of transit through automobile, bicycle, and pedestrian connections.

The project has located proposed school sites immediately adjacent to neighborhood parks to maximize the joint use of these compatible facilities. The project also locates multi-family development adjacent to parks and retail services to increase access and to reduce vehicle trips in furtherance of the City's Smart Growth Principles.

3. Create a range of housing opportunities

In keeping with the City's goal of providing a range of housing opportunities, the project has identified land use and development regulations and standards for the development of high density rental housing, affordable housing, for-sale condominium and townhome units, micro and small lot single family homes, and traditional large lot and move up housing. The project is designed to provide a range of housing choices for the full spectrum of residents that live and work within the City of Sacramento.

4. Foster walkable close-knit neighborhoods

The project includes an integrated network of joint use, off-street bicycle and pedestrian trails connecting uses through the project site, as well as the surrounding community.

The project's circulation network has been designed to accommodate a modified traditional street grid to allow easy, direct walking routes to all portions of the project site. Separated sidewalks and dedicated pedestrian bridges on the project site facilitate pedestrian access. These amenities, as well as enhanced pedestrian elements at intersections and pedestrian friendly design guidelines within project are intended to promote walkable close-knit neighborhoods throughout the project site.

5. Preserve open space, farmland, natural beauty, and critical environmental areas

The project includes a large open space component that is designed to preserve valuable wetland features that bisect the eastern portion of the project site. Consistent with federal regulatory

requirements, these open space areas will be set aside and maintained to ensure the preservation of these sensitive areas.

6. Concentrate new development and target infrastructure

As noted above, the project is designed to integrate into the City's existing circulation networks. The project is also designed to fit within the City's existing utilities network.

7. Provide a variety of transportation choices

The project supports automobile, pedestrian, bicycle, bus and light rail circulation. Bisected by the proposed extension of Cosumnes River Boulevard and developed around the anticipated construction of a new interchange on Interstate 5, the project will accommodate much needed automobile circulation improvements for the southern portion of the city. In addition, the project has been designed to be consistent with the City's 2010 Bikeway Master Plan and includes Class I, II, and III bike routes. Furthermore, the project promotes pedestrian circulation through enhanced street design, widened sidewalks, and dedicated pedestrian bridges over major vehicular corridors.

8. Promote resource conservation and energy efficiency

The project includes specific guidelines to ensure the project will meet and exceed Title 24 Energy standards through the use of energy efficient home construction and retail site design. The project also anticipates the use of sustainable energy sources, include photovoltaic, to provide a portion of the project's energy needs.

Water Quality and resource preservation measures have also been included in the project's design to reduce impacts on the existing hydrologic resources. These measures are anticipated to include, in part, detention/water quality basins, disconnected downspouts and a comprehensive use of landscaping as a water quality tool.

9. Support land use, transportation management, infrastructure and environmental planning programs that reduce vehicle emissions and improve air quality.

Consistent with City Codes and Policy, the proposed project is obligated to participate in the City's transportation system management programs by joining a transportation management association (TMA). The stated goal of the City's TMA's is to provide long term operation assistance to businesses and residents within the city that is aimed at reducing vehicle emissions and improving air quality.

Speculative Nature of Project Impacts on Global Climate Change

The Public Resources Code and the CEQA Guidelines are silent on the issue of global climate change. In addition, CEQA does not provide a template or methodology for evaluating the impacts of GHG emissions on global climate change. Typically, methodologies evolve over time based on technical analyses that are developed for the particular impact in question. Thus, in evaluating a new area of potential impact, the lead agency must draw conclusions from general CEQA principles

in determining the level of review and analysis of climate change required in an EIR without substantial regulatory guidance or legal decisions interpreting the statutes and regulations.

An analysis of impacts pursuant to CEQA begins with an examination of the environmental setting, and evaluates the changes the proposed project would make based on the identified threshold of significance. As identified in section 15064(a) of the CEQA Guidelines, “determining whether a project may have a significant effect plays a critical role in the CEQA process”. In addition, as outlined in sections 15064(h) and 15130 of the CEQA Guidelines, an environmental impact report (EIR) is required to evaluate cumulative impacts when they can be determined to be “cumulatively considerable.”

As stated in section 15064(b) of the CEQA Guidelines, “The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data.” Additionally, CEQA Guidelines section 15145 states, “If, after thorough investigation, a Lead Agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact.” The determination of significance requires several variables, first, establishment of a threshold of significance, second, an understanding of the impact of the project on the environment and as measured against the established threshold and third, a nexus between the project and the mitigation proposed to reduce that impact. These issues are discussed below.

Threshold of Significance

To date, no state or regional regulatory agency has adopted any agreed upon threshold of significance for GHG emissions. With respect to establishment of significance thresholds, the California OPR is charged with developing guidelines for the mitigation of GHG emissions by July 1, 2009, and the CARB is required to develop a framework to manage impacts of GHG pollutants by June 30, 2009.

In the absence of guidance from OPR and CARB, experts have acknowledged there is a lack of any meaningful basis for lead agencies, such as the city, to consider or evaluate thresholds of significance for GHG emissions. In this regard, the California Air Pollution and Control Officers Association has opined that a local agency “may decide to defer any consideration of thresholds” until the state framework is in place.²⁵ Similarly, the AEP has concluded that “there are currently no published CEQA thresholds or approved methods for determining whether a project’s potential contribution to a cumulative [global climate change] impact is considerable.”²⁶ Consequently, the city has determined that it is unable to establish a threshold of significance to enable evaluation and determination of whether project specific impacts of the proposed project rise to the level of significance for purposes of CEQA review.

25 California Air Pollution and Control Officers Association, *CEQA and Climate Change*, January 2008, p. 23.

26 Association of Environmental Professionals, *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*, June 29, 2007, page 1.

Impacts of the Project on Global Climate Change

CEQA does not require that the City undertake an analysis of GHG emissions that cannot be conclusively tied to a physical change in the environment. As noted in the AEP report, “a typical individual project does not generate enough greenhouse gas emissions to influence [global climate change] significantly on its own.”²⁷ Further, while global warming could have significant effects on local and regional weather patterns, agricultural production, flood and water resources, and the distribution of plant and animal species, there is no currently-identified mechanism to determine the effect or significance of any particular project’s contribution to global temperature increases. For example, the Intercontinental Panel on Climate Change has stated that “difficulties remain in attributing temperature changes on smaller than continental scales and over time scales of less than 50 years. Attribution at these scales, with limited exceptions, has not been established.”²⁸

The difficulty in assessing the impact of the project is magnified by the fact that issues of GHG emissions and climate change are fundamentally different from other areas of an air quality impact analysis, which are linked to some region or specific area in which the impact is significant. In the context of global warming, the majority of emissions that could be generated by a land development project would not necessarily qualify as “new” emissions that are specifically attributable to the proposed project in question. The approval of a new development project does not, for example, necessarily create new or additional VMT, which is the primary source of project emissions, in the global context. People moving to a particular California city or county are in some cases switching their individual VMT and resultant GHG emissions from one place to another, rather than creating a new emission.

This conclusion holds true, regardless of whether the relocating citizen is from within or outside of the State of California. The city, as the entity with land use control, has only limited control over VMT through its land use and siting decisions. Emissions associated with VMT cannot be avoided, since the proposed project is accommodating growth and it can reasonably be assumed that VMT associated with such growth would occur somewhere, resulting in GHG emissions contributing to global climate change. The project proponent and the City can influence VMT to only a limited extent through implementation of Smart Growth measures incorporated into the project as project design features.

Further, although climate change is a global phenomenon, the relative per capita rate of GHG emissions varies from location to location. California is one of the lowest per capita GHG emitters in the United States, and migration to the development from elsewhere in the United States could result in an overall reduction in GHG emissions. On the other hand, migration to the project from less developed countries could have the opposite effect. Similarly, to the extent the project attracts population from less dense areas and older housing units, it may reduce GHG emissions per capita. Thus, there is no accepted methodology for identifying the specific incremental impact of a development project on the creation of “new” GHG emissions.

27 Association of Environmental Professionals, *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*, June 29, 2007, page 1.

28 . Intergovernmental Panel on Climate Change. Fourth Assessment Report, Working Group I Report, 2007, <www.ipcc.ch/ipccreports/ar4-wg1.htm>, p. 665.

Nexus for GHG Reduction Measures

The City also recognizes the limitations inherent in quantifying any nexus between the calculated GHG emissions of individual projects and the predicted environmental changes that could be caused by global temperature increases. Absent such quantification, the City has no authority, pursuant to CEQA or otherwise, to impose mitigation measures on the project to address speculative project impacts on global climate change (see, CEQA Guidelines section 15126.4(a)(4)).

In the absence of some uniform, accepted methodology to evaluate the significance of potential project level contributions to global climate change, it is sufficient for the city to have analyzed the issue and determined that any impact is too speculative for evaluation. CEQA does not require evaluation of speculative impacts that are impossible to quantify.

For all of the reasons discussed above, and pursuant to section 15145 of the CEQA Guidelines, the City has determined that until such time as a sufficient scientific basis exists to ascertain the incremental impact of an individual project on global climate change, and to accurately project future climate trends associated with that increment of change, and guidance is provided by regulatory agencies on the control of GHG emissions and thresholds of significance,²⁹ the significance of an individual project's contribution to global GHG emissions is too speculative to be determined. There is no basis to predict future climate trends associated with the incremental GHG emissions arising from the project, and the regulatory agencies have provided no guidance on the thresholds of significance to be used whenever evaluating GHG emissions. Therefore, further analysis of current GHG emissions scenarios, climate models, and climate change projections to the proposed project is also determined to be too speculative.

However, in order to disclose potential impacts of the project on climate change, this DEIR does discuss estimated GHG emissions from the project, project-related activities that could contribute to the generation of increased GHG emissions, the project design features that would avoid or minimize those emissions, and measures that would reduce those emissions.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

A very large development project cannot individually generate enough GHG emissions to measurably influence global climate change. A project contributes to a potentially significant cumulative impact by its incremental contribution to the cumulative increase in GHG emissions from all sources, which together can produce measurable global climate changes. The impact analysis for the Delta Shores project estimates and compares project GHG emissions with available data on state, regional, and city of Sacramento GHG emissions. It also compares the GHG reduction potential of proposed project design features and strategies as they relate to the measures identified in the CAT Report and by the Attorney General's office and evaluates the project for consistency

29 Refer to the discussion under "Regulatory Setting, California" regarding the Proposed Early Actions to Mitigate Climate Change in California published by CARB in April 2007. There are no early action measures specific to residential development included in the list of 36 measures identified for CARB to pursue during calendar years 2007, 2008, and 2009.

with state, regional and local planning and regulatory efforts such as those discussed above. The analysis also discusses characteristics of the project which help to reduce GHG emissions and achieve state goals for such reductions.

The following activities associated with a typical residential and commercial development could contribute to the generation of GHG emissions:

Removal of Vegetation – The net removal of vegetation for construction results in a loss of the carbon sequestration in plants. Alternately, planting of additional vegetation would result in additional carbon sequestration and lower the carbon footprint of the project.

Construction Activities – Construction equipment typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHG such as CO₂, CH₄ and N₂O. Furthermore, CH₄ is emitted during the fueling of heavy equipment.

Gas, Electricity and Water Use – Gas use results in the emissions of two GHGs: CH₄ (the major component of natural gas) and CO₂ from the combustion of natural gas. Methane is released prior to initiation of combustion of the natural gas (as before a flame on a stove is sparked), and from the small amount of CH₄ that is uncombusted in a natural gas flame. Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. The use of water requires pumping, which results in increased needs for electrical power generation. Reducing water use will reduce the need for electricity, thereby reducing the emission of GHG to generate that electricity.

Motor Vehicle Use – Transportation associated with the proposed project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips.

By percentage, the transportation sector is the largest contributor to GHG emissions in California, followed by residential and commercial energy use. California's transportation sector is heavily dependent upon oil, with petroleum-based fuels currently providing nearly all (96 percent) of California's transportation energy needs (State of California 2007). Transportation-related activities represent almost half (48 percent) of California's petroleum-based fuel consumption. Within the transportation sector, light vehicles (i.e., cars, light trucks, and motorcycles) account for about 60 percent of the petroleum-based energy consumption. Electricity generation is the second largest category of GHG emissions in California, followed by natural gas combustion and solid waste processing/disposal. For a additional information, on electricity generation, natural gas combustion, and solid waste processing/disposal see discussions below.

Project GHG Emissions

An estimate of the project's three most important GHG emissions (i.e., CO₂, CH₄, and N₂O) is presented below. The emissions of the individual gases were estimated and then converted to their CO₂e using the individually determined GWP of each gas. Thus, total GHG emissions = total CO₂e emissions + total CO₂e emissions from CH₄ and N₂O.

Implementation of the proposed project would generate GHGs through the construction and operation of new residential, commercial, and recreational uses. GHG emissions from the project would specifically arise from project construction and from sources associated with project operation, including direct sources such as motor vehicles, natural gas consumption, solid waste handling/treatment, and indirect sources such as electricity generation. Emissions from these sources are estimated and presented, below.

Construction GHG Emissions

The project would emit GHG during construction of the project from the operation of construction equipment and from worker and building supply vendor vehicles. Emissions during construction were estimated using the URBEMIS2007 model. The project construction emissions of CO₂ are shown in Table 5.10-2, below. Emissions of N₂O and CH₄ are negligible in comparison to CO₂ and were not estimated. GHG emissions estimates for each year were based on construction phasing and square footage data for each project land use category as provided by the project applicant.

CONSTRUCTION-GENERATED EMISSIONS	
Year	CO₂e (Tons)
2009	11,219
2010	14,998
2011	14,599
2012	13,856
2013	13,862
2014	13,867
TOTAL	82,401
Source: Emissions generated by phase were calculated using the URBEMIS2007 (version 9.2.4) computer program.	
Refer to Appendix E for detailed emissions calculations and assumptions.	

Operational GHG Emissions

The project would also generate GHG during its operation, principally from motor vehicle use, electricity and natural gas consumption, and solid waste disposal. GHG from each of these sources are further explained, below. Table 5.10-3 summarizes the total operational emissions at buildout in CO₂e.

TOTAL OPERATIONAL EMISSIONS AT BUILDOUT	
Emissions Source	CO₂e (Tons/Year)
Motor Vehicles	116,266
Electricity	127,063
Natural Gas	17,708
Solid Waste	7,795
TOTAL	268,832
Source: Source: PBS&J, 2008. Refer to Appendix E for detailed emissions calculations and assumptions.	

Motor Vehicle GHG Emissions

The second largest source of GHG emissions associated with the project would be on- and off-site motor vehicle use. CO₂ emissions, the primary GHG from mobile sources, are directly related to the quantity of fuel consumed. Two important determinants of transportation-related GHG emissions are VMT and vehicle fuel efficiency. VMT in the California region has steadily increased over the last quarter-century.

CO₂ emissions during operation of the project at full buildout were estimated using URBEMIS2007. These calculations are "worst case" in that they do not take into account anticipated regulatory changes in vehicle efficiency standards which would reduce per vehicle GHG emissions over time. As shown in Table 5.10-4 below, total CO₂ emissions would be 116,266 tons per year, which is 0.024 percent of California's 2004 emissions (i.e., 478.7 million tons).

OPERATIONAL CO₂ EMISSIONS FROM MOTOR VEHICLES AT BUILDOUT	
Land Use Type	CO₂e (Tons/Year)
Residential	53,544
Commercial	59,630
School	2,895
Other	198
TOTAL	116,266
Notes: Emissions were calculated using the URBEMIS2007 (version 9.2.4) computer program. Refer to Appendix E for detailed emissions calculations and assumptions. Source: PBS&J, 2008.	

Although motor vehicle energy consumption would occur under the proposed project, the project's proximity to the extension of a future light rail line and other alternative transit modes, its mixing of land uses, its participation in a TMA and the various smart growth measures incorporated as project design features into the project are intended to improve the energy efficiency of the transportation system by increasing use of more fuel-efficient public transit, carpools, and vanpools, and improving circulation system levels of service. Any reductions in traffic congestion realized through implementation of enhanced transit operations would also allow for more energy-efficient vehicular travel.

As an example of the effect of density and mixed use development on vehicle usage efficiency, researchers have determined that the most significant factor in determining travel and transportation outcomes is density. Controlling for other factors, the difference between low and high density metropolitan areas is more than 40 percent daily per capita VMT. Doubling of neighborhood density can be expected to result in approximately 15 percent reduction in both vehicle trips and VMT per capita.³⁰ In sum, overall VMT and vehicle trips decline as accessibility, density, and/or land-use mixing increase. A San Francisco Bay Area study found that, all else being equal, "every 10 percent

30 Ewing R. and R. Cervero, "Travel and the Built Environment," Transportation Research Record, Vol. 1780, pp. 87-114, 2001, as cited in California Energy Commission, The Role of Land Use in Meeting California's Energy and Climate Change Goals, Final Staff Report, August 2007, CEC-600-2007-008-SF.

increase in the number of retail and service jobs within 4 miles of one's residence is associated with a 1.68 percent reduction in shopping and personal-service VMT. [also] a doubling of accessibility to retail and service activities was associated with a 13.7 percent decline in daily hours spent getting to and from shops and consumer service outlets."³¹ The results of a 2002 travel model that compared VMT between high-density and business-as-usual growth scenarios showed that miles traveled in privately owned vehicles would be 7.5 percent less in a high-density development than in a business-as-usual development. Also, transit miles traveled were 30 percent more.³²

Electricity and Natural Gas GHG Emissions

The proposed project's largest source of GHG emissions would come from the generation of electricity for its commercial, residential, and other components. The generation of electricity through the combustion of fossil fuels typically yields CO₂ and, to a much smaller extent, CH₄ and N₂O. In order to determine emissions from electricity consumption, annual electricity use must be established. The project related electricity emissions were estimated by using project electricity use estimates noted below. The emissions factors for electricity use were obtained from the California Climate Action Registry (CCAR 2007). The GHG emissions from electricity generation can also be considered the "worst case" scenario in that they do not take into account anticipated regulatory changes on the manner of electrical energy generation that will reduce GHG emissions per kilowatt over time. GHG emissions from fossil fuel powered electricity generation are as shown in Table 5.10-5.

Geographic Region and Emissions Source	Energy Use (MWh/Year)	CO ₂ e (Tons/Year)			
		CO ₂	N ₂ O	CH ₄	Total
State of California	272,464,000	109,604,093	156,258	19,168	109,779,519
Sacramento County	10,574,000	4,253,603	6,064	744	4,260,411
City of Sacramento	3,363,000 ¹	1,352,834	1,929	237	1,354,999
Project	315,360 ²	126,860	181	22	127,063

Notes:
1. Calculated based on percentage of statewide energy use according to ratio from U.S. Bureau of the Census, California Dept. of Finance, Population Estimates.
2. The SMUD estimates that an additional 36 MW of electrical generating capacity would be needed to serve the project. The annual electricity use of the project was estimated by multiplying this capacity by the number of hours in a year (8,760 hours).
Source: PBS&J, 2008. Refer to Appendix E for detailed emissions calculations and assumptions.

Solid Waste GHG Emissions

Since the project involves commercial and residential uses, solid waste generated by the project would also contribute to GHG emissions. Treatment and disposal of municipal, industrial and other solid waste produces significant amounts of CH₄. In addition to CH₄, solid waste disposal sites also produce biogenic CO₂ and non-methane volatile organic compounds (NMVOCs) as well as smaller

31 California Energy Commission, The Role of Land Use in Meeting California's Energy and Climate Change Goals, Final Staff Report, August 2007, CEC-600-2007-008-SF, footnote 16.

32 California Energy Commission, The Role of Land Use in Meeting California's Energy and Climate Change Goals, Final Staff Report, August 2007, CEC-600-2007-008-SF, footnote 17.

amounts of N₂O, NO_x, and CO. CH₄ produced at solid waste sites contributes approximately 3 to 4 percent to the annual global anthropogenic GHG emissions (IPCC, 2001).³³

Waste management practices in California have changed significantly over the last decade. State mandated waste minimization and recycling/reuse policies have been introduced to reduce the amount of waste disposed of in landfills, and alternative waste management practices to solid waste disposal on land have been implemented to reduce the environmental impacts of waste management. Also, landfill gas recovery has become more common as a measure to reduce CH₄ emissions from solid waste disposal sites.

CH₄ and CO₂ emissions from solid waste generated by the project were estimated based on formulas provided in the State Workbook: Methodologies for Estimating Greenhouse Gas Emissions (pages 5-1 to 5-3). Estimates were obtained by multiplying the tons of solid waste annually disposed of at landfills by the percent of degradable material they contain, by the percent dissimilated and by the pounds of gas produced per pound of biomass. Landfill gas is approximately 50 percent CH₄ and 50 percent CO₂. Total project emission of GHGs from landfill material is shown in Table 5.10-6, below. N₂O emissions from landfills are considered negligible (because the microbial environment in landfills is not very conducive to the nitrification and denitrification processes that result in N₂O emissions) and are, therefore, not explicitly modeled as part of GHG emissions generated through solid waste.

Geographic Region	Solid Waste (Tons/Year)	CO ₂ e (Tons/Year)		
		CO ₂	CH ₄	Total
State of California				
2004				6,876,000
City of Sacramento				
2005	291,691	21,068	12,039	273,880
2005 (including private hauling)	632,800	45,705	26,117	594,160
Proposed Project at Buildout	8,302	600	7,195	7,795
Note: Refer to Appendix E for detailed emissions calculations and assumptions. Sources: Based on a ratio of project-generated waste and estimated 2005 waste generation rates for City of Sacramento. Emission factors derived from US EPA State Workbook: Methodologies for Estimating Greenhouse Gas Emissions. Waste generation rates derived from California Integrated Waste Management Board, 2007 and US EPA, 1998.				

Other Greenhouse Gas Emissions

Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and therefore is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_x and ROGs) to global warming.³⁴ Therefore, it is assumed that project emissions of ozone precursors would not significantly contribute

33 Intergovernmental Panel on Climate Change, *IPCC Guidelines for National Greenhouse Gas Inventories*, Chapter 3, Solid Waste Disposal, 2006, page 3.1.

34 California Air Resources Board. Fact Sheet, Climate Change Emission Control Regulations. December 10, 2004.

to global climate change. At present, there is a federal ban on CFCs; therefore, it is assumed the project will not generate emissions of these GHGs. The project may emit a small amount of HFC emissions from leakage and service of refrigeration and air conditioning equipment and from disposal at the end of the life of the equipment (US EPA 2004c). However, the details regarding refrigerants to be used in the project and the capacity of these are unknown at this time. PFCs and SF₆ are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated the project would contribute significant emissions of these additional GHGs.

Project Design Features to Reduce Greenhouse Gas Emissions

Under AB 32, CARB has the primary responsibility for regulating and reducing GHG emissions. Nevertheless, the City acknowledges that design features and project conditions can help reduce GHG emissions associated with development projects, many of which were itemized in the CAT Report. As shown in Table 5.10-7, below, the Delta Shores Project is designed and conditioned to include numerous feasible measures to reduce GHG emissions associated with the project. In addition, the project will adhere to several of the mitigation measures recommended by the California Attorney General to address global warming (see Appendix K). Accordingly, this project is fully consistent with the goal of AB 32 and CEQA – it contains conditions and design features that avoid or substantially lessen the GHG emissions that would otherwise be associated with the project.

CONCLUSION

As noted in the Introduction to this section, the specific GHG emissions of an individual project cannot be shown to have any measurable, material effect on global climate change. Consequently, a specific project's contribution to GHGs is an inherently cumulative impact issue when examined in a global setting.

No state or regional agency has yet identified any method for determining a local project's threshold of significance. In the absence of any analytical methodology to determine a particular project's impact on global climate change, the City has no means of determining the significance of a specific project's contribution to global climate change for CEQA purposes. While it is possible to determine the gross level of GHGs associated with a particular project, such as the Delta Shores Project, it is not possible to determine whether its level of emissions is individually significant. In the absence of a generally recognized analytical protocol, CEQA does not require speculation.

The City believes that the Delta Shores project is a good example of project design that would minimize GHG emissions and thereby reduce the project's contribution to global warming. From a geographic standpoint, the project is situated within five miles of the urban core in Downtown Sacramento and within close proximity to a future light rail station. It would provide residents of the city with the opportunity to live and shop close to their jobs and close to public transportation lines.

TABLE 5.10-7

**DELTA SHORES GREENHOUSE GAS EMISSIONS REDUCTION
MEASURES/DESIGN STRATEGIES**

California Climate Change Greenhouse Gas Emissions Reduction Strategies	Proposed Project Design/ Emission Reduction Measures
Diesel Anti-Idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling. Post signs that restrict idling; education for truck drivers regarding diesel health impacts. Set specific limits on idling time for commercial vehicles, including delivery vehicles.	The project is subject to the Sacramento City Code, Chapter 8.116, which regulates idling of commercial vehicles within the City limits, prohibits idling for longer than five consecutive minutes, or five total minutes in one hour.
Alternative Fuel Standards for Construction – SMAQMD Guidelines	The project includes the following mitigation: "When appropriate, use alternative fueled (such as aqueous diesel fuel) or catalyst equipped diesel construction equipment." (Draft EIR Mitigation Measure 5.3-1)
Transportation Emissions Reduction: Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where signals are installed, require the use of Light Emitting Diode (LED) traffic lights.	The applicant shall be conditioned to install light emitting diode (LED) traffic lights in all traffic signals associated with development of the project.
Transportation Emissions Reduction: Promote ride sharing programs, e.g., by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing, designating adequate passenger loading and unloading and waiting areas and provide shuttle service to public transit.	The applicant is required to participate in and provide funding to a Transportation Management Association (TMA) which will operate ridesharing and shuttle services programs. The applicant shall be conditioned to provide designated parking spaces for high occupancy vehicles and passenger loading, unloading and waiting areas for ridesharing in commercial/retail/office developments. The project is designed to accommodate future Regional Transit bus service and is in close proximity to the future South Line Phase II light rail line, which, in conjunction with future planned bus service, will provide transit service to the entire project site.
Transportation Emissions Reduction: Offer public transit discounts to residents.	As noted above, the applicant is required to participate and provide funding for a TMA, which may offer public transit discounts to residents in Delta Shores.
Transportation Emissions Reduction: Design a regional transportation center where public transportation of various modes intersects.	The project is in close proximity to the proposed South Line Phase II light rail line and has been designed to support the proposed Cosumnes River Boulevard Light Rail Station with the development of a mixed use Town Center along the project's eastern edge.
Transportation Emissions Reduction: Incorporate bicycle lanes into the project circulation system.	The applicant is conditioned to construct Class I and Class II bike lanes throughout the project site in excess of those required by the City of Sacramento's 2010 Bikeway Master Plan.
Transportation Emissions Reduction: Provide on-site bicycle and pedestrian facilities (showers, bicycle parking, etc.) for commercial uses, to encourage employees to bicycle or walk to work.	The applicant is conditioned to provide on-site bicycle and pedestrian facilities, including showers and bicycle parking for all commercial uses.
Transportation Emissions Reduction: Provide public education and publicity about public transportation services.	The applicant is required to participate in and provide funding for a TMA, which will provide public education and publicity about public transit.

TABLE 5.10-7

**DELTA SHORES GREENHOUSE GAS EMISSIONS REDUCTION
MEASURES/DESIGN STRATEGIES**

California Climate Change Greenhouse Gas Emissions Reduction Strategies	Proposed Project Design/ Emission Reduction Measures
<p>Zero Waste - High Recycling: Additional recycling beyond the State's 50 percent recycling goal.</p> <p>1) Design locations for separate waste and recycling receptacles. 2) Utilize recycled components in the building design.</p>	<p>The project is subject to Sacramento City Code Section 17.72.030, which establishes separate waste and recycling disposal requirements for all new uses in the City, including provisions requiring the use of separate receptacles. In addition, City Code Section 13.10.400 provides for the separate collection of garden wastes from residential properties in the City.</p> <p>The applicant shall be conditioned to utilize recycled building materials, where feasible, in its building designs.</p>
<p>Solid Waste Reduction Strategy: Project construction shall require reuse and recycling of construction and demolition waste.</p>	<p>The applicant shall be conditioned to reuse and recycle construction waste where feasible.</p>
<p>Solid Waste Reduction Strategy: Project shall ensure that each unit includes recycling and composting containers and convenient facilities for residents and businesses.</p>	<p>The project is subject to Sacramento City Code Section 17.72.030, which establishes separate waste and recycling disposal requirements for all new uses in the City, including provisions requiring the use of separate receptacles. In addition, the applicant will encourage the use of specific recycling efforts associated with project operation. These efforts may include, but are not limited to, green waste and food recycling.</p>
<p>Water Use Efficiency: Increase the efficiency of water transport and reducing water use would reduce greenhouse gas emissions. Use both potable and non-potable water to the maximum extent practicable; low flow appliances (i.e., toilets, dishwashers, shower heads, washing machines, etc.); automatic shut off valves for sinks in restrooms; drought resistant landscaping; Place "Save Water" signs near water faucets.</p>	<p>The project is subject to Sacramento City Code Sections:</p> <p>15.76.030, which requires that all shower fixtures be fitted with low-flow features.</p> <p>15.92.080, which establishes maximum water usage for landscaping, limits the use of turf, and requires the use of climate-adapted landscaping.</p>
<p>Water Use Efficiency: Require measures that reduce the amount of water sent to the sewer system (Reduction in water volume sent to the sewer system means less water has to be treated and pumped to the end user, thereby saving energy.)</p>	<p>The project is subject to Sacramento City Code Sections:</p> <p>15.76.030, which requires that all shower fixtures be fitted with low-flow features.</p> <p>15.92.080, which establishes maximum water usage for landscaping, limits the use of turf, and requires the use of climate-adapted landscaping.</p>
<p>Lighting Efficiency Standards: Require that the project include efficient lighting. (Fluorescent lighting uses approximately 75% less energy than incandescent lighting to deliver the same amount of light.)</p>	<p>The applicant shall be conditioned to provide efficient fluorescent lighting for all primary lighting within project retail buildings. Accent and aesthetic lighting shall be subject to this condition.</p>
<p>Transportation Refrigeration Units (TRU), Off-Road Electrification, Port Electrification: Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.</p> <p>If TRUs access the site, implement measures to reduce emissions; install electrification in applicable projects (i.e., truck stops, warehouses, etc.)</p>	<p>Applicant shall be conditioned to install electrification stations/connections in all project loading docks for use by transportation refrigeration units. (TRUs).</p>

TABLE 5.10-7

**DELTA SHORES GREENHOUSE GAS EMISSIONS REDUCTION
MEASURES/DESIGN STRATEGIES**

California Climate Change Greenhouse Gas Emissions Reduction Strategies	Proposed Project Design/ Emission Reduction Measures
<p>Urban Forestry: A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.</p> <p>Trees near structures shall be planted to act as insulators from weather, thereby decreasing energy requirements. Trees also store carbon.</p>	<p>The project is subject to Sacramento City Code Section 17.68.040, which requires the planting of shade trees to ensure that 50% percent of all surface parking areas are shaded within 15 years of establishment.</p>
<p>Afforestation/Reforestation Projects: Reforestation projects focus on restoring native tree cover on lands which were previously forested and are now covered with other vegetative types.</p> <p>Residential development on the project site shall be clustered to preserve forest/woodland resources; increase density; and preserve and restore open space.</p>	<p>As noted above, the project is designed to provide a total net increase of approximately 1,000 new trees within the project site.</p>
<p>Smart Land Use and Intelligent Transportation Systems (ITS): Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services.</p> <p>Governor Schwarzenegger is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through state investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity, and a quality environment.</p> <p>Encourage mixed-use and high-density development to reduce vehicle trips, promote alternatives to vehicle travel and promote efficient delivery of services and goods. (A city or county could promote "smart" development by reducing developer fees or granting property tax credits for qualifying projects.)</p>	<p>The project is subject to and consistent with the City's adopted Smart Growth Principles and the associated strategies and initiatives, including a jobs/housing balance, the mixing of land uses, and transit oriented development.</p> <p>The proposed project will implement these Smart Growth Principles by providing a mixed use development consistent with the City's goals. In addition, the project is in close proximity to and has been designed to support light rail through the identification of a mixed use Town Center along its eastern boundary. Moreover, as has been noted, the project is required to participate in and provide funding for a TMA, which will have as its mission the promotion of transit supportive measures throughout the Delta Shores area.</p>
<p>Smart Land Use and Intelligent Transportation Systems (ITS): Impose measures to address the "urban heat island" effect by, e.g., requiring light-colored roofing materials and paint.</p>	<p>The project shall be conditioned to require light-colored roofing materials and paint on roofs.</p>
<p>Smart Land Use and Intelligent Transportation Systems (ITS): Incorporate public transit into project design.</p>	<p>The project is in close proximity to and has been designed to support light rail through the identification of a mixed use Town Center along its eastern boundary.</p>
<p>Smart Land Use and Intelligent Transportation Systems (ITS): Require pedestrian-only streets and plazas within the project site and destinations that may be reached conveniently by public transportation, walking, or bicycling.</p>	<p>The project is conditioned to provide Class I and Class II bike lanes in excess of those required by the City of Sacramento 2010 Bikeway Master Plan. In addition, the project has been designed to include enlarged sidewalks to encourage pedestrian movement throughout the project site.</p>
<p>Smart Land Use and Intelligent Transportation Systems (ITS): Discourage "leapfrog" development. Enact ordinances and programs to limit sprawl.</p>	<p>The proposed project is within the current City limits and is directly adjacent to urbanized portions of the City. In addition, the project has been identified and zoned for development for over two decades.</p>
<p>Source: Information provided by the project applicant, 2008.</p>	

The project reflects the City's interest in project design that includes a mix of uses, including retail, residential, and open space. The project provides a more integrated mix of uses than those envisioned when the project site was originally zoned for development over 20 years ago.

The Delta Shores project differs from the typical suburban development project found elsewhere in the greater Sacramento metropolitan region. It is an example of the type of new urban development the City of Sacramento has taken the lead in planning and promoting with its proximity to the future light rail line and increased urban densities. The Delta Shores Project will help to reduce GHG emissions and their impact on global climate change.

6.0 ALTERNATIVES

INTRODUCTION

The purpose of this chapter is to identify and describe alternatives to the proposed project. CEQA requires that an EIR evaluate project alternatives that either reduce or eliminate the significant or potentially significant adverse environmental effects identified associated with the proposed project, while still meeting most if not all of the basic project objectives.

California Environmental Quality Act Requirements

An EIR must evaluate a reasonable range of alternatives to the proposed project, or to the location of the proposed project that could 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, section 15126.6). An EIR need not evaluate the environmental effects of alternatives at the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project. The CEQA Guidelines provide the following language for discussing alternatives to a proposed project:

The specific alternative of the “no project” shall also be evaluated along with its impacts....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, Section 15126.6 subd.(e)(2)).

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 proposed objectives, or would be more costly (CEQA Guidelines, Section 15126.6 subd.(b)).

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 (CEQA Guidelines, Section 15126.6 subd.(d)).

The range of alternatives required in an EIR is governed by a “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice....The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making....An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (CEQA Guidelines, Section 15126.6 subd.(f)).

The requirement that an EIR evaluate alternatives to the proposed project or alternatives that address 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. The EIR need examine in detail only the alternatives that could feasibly attain most of the basic objectives of the

project. The Public Resources Code and the CEQA Guidelines direct that an EIR should 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 need to be evaluated in a given EIR. According to the CEQA Guidelines (section 15126.6 (b)):

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 determines could feasibly attain most of the basic objectives of the project.

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the applicant can reasonably acquire, control, or otherwise have access to the alternative site (CEQA Guidelines, section 15126.6 (f)(1)).

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” (section 15126.6 (f)(2)(3)).”

The selection of alternatives to the proposed project takes into account the project objectives provided in Chapter 2 (Project Description) and are listed below.

- Increase the City’s housing supply in close proximity to existing transportation corridors and employment centers to minimize trip length for employees.
- Design a residential development that is consistent with the City’s land use designations and zoning for the site, and compatible with existing nearby neighborhoods.
- Provide residential uses in an area contiguous to existing development and finance required infrastructure.
- Provide regional and neighborhood serving retail to satisfy the substantial demand for these retail services in the south Sacramento portion of the city.
- Provide hospitality uses in conjunction with the proposed retail development to serve the traveling public associated with the project’s proximity to Interstate 5.
- Provide circulation and infrastructure improvements consistent with the City’s existing General Plan goals and policies while recognizing the inherent constraints of the project site.

Equally important to attaining the project objectives is the reduction of some or all significant impacts, particularly those that could not be mitigated to a level below the threshold of significance. The project-specific and cumulative significant and unavoidable impacts of the proposed project, after mitigation, are identified below.

Project-Specific Significant and Unavoidable Impacts

5.3-3 Operation of the proposed project would contribute to emissions of ozone precursors.

- 5.6-3 Operation of the proposed project could permanently expose sensitive receptors to increased traffic noise levels from local roadways.
- 5.9-7 Implementation of the project under Baseline plus Project conditions could affect the Meadowview Road/24th Street intersection.
- 5.9-9 Under Baseline Plus Project conditions, the project would have a significant impact on freeway operations.

Cumulative Significant and Unavoidable Impacts

- 5.3-9 Operation of the proposed project, combined with other on-going development in the air basin, would increase cumulative levels of ozone precursors.
- 5.9-13 Under Cumulative plus Project conditions the segment of Cosumnes River Boulevard from I-5 to Delta Shores Circle could be impacted by the project.
- 5.9-14 Under Cumulative plus Project conditions the segment of Detroit Boulevard south of Meadowview Road could be impacted by the project.
- 5.9-16 Under Cumulative plus Project conditions the Meadowview Road/24th Street intersection could be impacted by the project.
- 5.9-20 Under Cumulative plus Project conditions the Cosumnes River Boulevard/Delta Shores Circle (West) intersection could be impacted.
- 5.9-23 Under Cumulative Plus Project conditions, the project would have a significant cumulative impact on freeway operations.

ALTERNATIVES CONSIDERED AND DISMISSED FROM FURTHER CONSIDERATION

Consistent with CEQA, primary consideration was given to alternatives that would reduce significant impacts while still meeting most of the project objectives. Those alternatives that would have impacts identical to or more severe than the proposed project, or that would not meet most of the project objectives, were rejected from further consideration. The alternatives included in this chapter were derived after reviewing issue areas with significant and unavoidable impacts, which include operational air emissions and traffic. Alternatives that would exceed the significance thresholds for the aforementioned issue areas or would not substantially lessen any significant environmental impacts identified in Chapter 5 of the EIR were rejected from further analysis. The following alternatives were considered but rejected from further analysis because they were determined to be infeasible or would not reduce or avoid significant impacts identified under the proposed project.

Retail on the East and West Side of Interstate-5 Alternative

The project applicant considered an alternative that would place the two proposed retail developments on either side of I-5 off of Cosumnes River Boulevard. While maintaining some of the

density and mix of uses as the proposed project, this alternative could increase the magnitude of impacts, specifically, traffic congestion, water demand, and air emissions. By locating the retail uses on either side of I-5, it would change the urban character and connection of land uses achieved in the proposed project. Furthermore, this alternative would eliminate the mixed-use Village Center from the easterly portion of the project site, which would service the residents in that area. The net result of this alternative would be equal or greater levels of congestion on regional roadways, air pollutant emissions, and other effects caused by this type of development pattern.

It is unlikely that this alternative would generate adequate revenues to support the high cost of infrastructure improvements necessary to make the site developable, as such, this alternative would be infeasible.

Because retail uses on the east and west side of I-5 Alternative would result in equal or greater environmental effects and would be infeasible to implement, it was not further considered or evaluated in this EIR.

Retail Corridor Alternative

The Retail Corridor Alternative would consist of retail development in a long corridor along the newly constructed Cosumnes River Boulevard with the remaining development in residential uses. The proposed development would consist of multiple large retail projects with varying densities of housing located behind the retail corridor stretching along Cosumnes River Boulevard from I-5 to 24th Street.

The Retail Corridor Alternative serves to bifurcate the project site along Cosumnes River Boulevard into two non-synergistic developments. This alternative would fail to meet the stated objectives of the proposed project because it does not provide for two mixed use retail centers. Development of the Retail Corridor Alternative would result in a less dense and a decentralized retail project. It is anticipated that the net result of this type of development would not reduce any of the significant environmental effects associated with the proposed project.

Because the Retail Corridor Alternative would not reduce or avoid significant impacts identified under the proposed project and because it would fail to meet some of the objectives of the proposed project, it is not further considered or evaluated in this EIR.

Off-Site Alternative

Section 15126.6(f)(2)(B) of the CEQA Guidelines states that “[i]f the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location.”

The project site is the largest remaining contiguous vacant piece of land within the city of Sacramento and is the only site within the city large enough to accommodate the proposed project. While the construction of residential, office, retail, or other uses identified in the project site could be

accomplished through construction at a combination of other locations in the city, no other single location would be large enough to accommodate the project and meet the objectives of the project. In this case, no feasible off-site location exists that could accommodate the project or achieve the objectives of the project. As such, the evaluation of an Off-Site Alternative is not further considered in this EIR.

ALTERNATIVES CONSIDERED IN THIS EIR

Although any number of alternatives could be designed that could result in the reduction or elimination of project impacts, a total of three representative alternatives, each intended to reduce or eliminate one or more of the significant impacts identified for the proposed project, are evaluated in this Draft EIR. The alternatives are described below.

- **No Project/No Development Alternative**, which assumes that the proposed project would not be built and there would be no new development of the site. This alternative assumes the existing buildings and agricultural uses on the site would remain.
- **No Project/Existing Zoning Alternative**, which assumes that the proposed project site would be developed consistent with currently allowable land uses, zoning, and development intensities.
- **Reduced Density/All Residential Alternative**, which assumes that the regional commercial uses would not be developed and would be replaced by residential uses, while the neighborhood commercial uses would remain. In addition, this alternative would reduce the total number of residential units by 20 percent while using the same footprint. All other uses would remain the same.

Each of the alternatives is described in more detail, below, followed by an assessment of the alternative's impacts relative to the proposed project. Estimates for water demand and the generation of wastewater and solid waste were calculated by applying the standard generation rates used in the utilities analysis of the proposed project to the land uses proposed under this alternative. Transportation impacts were qualitatively assessed by comparing the traffic report for the proposed project to the assumptions made for each alternative. The alternatives' potential for noise impacts were qualitatively analyzed by their relative inclusion of noise-sensitive land uses, the length of the construction schedules, and their potential for generating motor vehicle trips in comparison with the proposed project. The alternatives' potential for air quality impacts were assessed quantitatively by calculating their emissions of air pollutants from both stationary and mobile sources using the URBEMIS model with quantitative specifications of the type of land uses they would include.

The focus of this analysis is the difference between the alternative and the proposed project, with an emphasis on addressing the significant impacts identified under the proposed project. For each issue area, the analysis indicates which mitigation measures would be required of the alternative and which significant and unavoidable impacts would be avoided or reduced in severity. If necessary, the analysis indicates what additional mitigation measures would be required for the alternative being discussed, and what significant impacts would be less (or more) severe. Unless

otherwise indicated, the level of significance and required mitigation would be the same for the alternative as for the proposed project and no further statement of the level of significance is made. Table 6-1 provides a summary comparison of the severity of impacts for each alternative by topic.

ALTERNATIVE IMPACT DISCUSSION				
Issue Area	Proposed Project	No Project/ No Development	No Project/ Existing Zoning	Reduced Density/ All Residential
Aesthetics	S	NI	Equal	Equal
Agricultural Resources	SU	NI	Reduced	Equal
Air Quality	SU	NI	Reduced	Reduced
Biological Resources	S	NI	Equal	Equal
Hydrology & Water Quality	LS	NI	Equal	Equal
Noise	S	NI	Equal	Equal
Public Services	S	NI	Reduced	Reduced
Public Utilities	S	NI	Equal	Reduced
Transportation and Circulation	SU	NI	Reduced	Equal

Notes:
 SU = Significant and Unavoidable – if any impact was identified as significant and unavoidable in the technical analysis.
 S = Significant before mitigation – if any impact was identified as significant in the technical analysis.
 LS = Less than Significant – if all impacts were identified as less than significant in the technical analysis.
 NI = No impact would occur when compared to the proposed project.
 Equal = Level of significance is equal to the proposed project.
 Greater = Level of significance is greater compared to the proposed project.
 Reduced = Level of significance is reduced compared to the proposed project, but not necessarily to a less-than-significant level.
 Source: PBS&J, 2007.

No Project/No Development Alternative

Under CEQA, the No Project/No Development Alternative must consider the effects of forgoing the project. The purpose of analyzing the No Project/No Development Alternative is to allow decision-makers to compare the impacts of the proposed project versus no project. The No Project/No Development Alternative describes the environmental conditions that exist at the time that the environmental analysis commences (CEQA Guidelines, section 15126.6 (e) (2)). Under the No Project/No Development Alternative, the existing structures on the site would remain and the site would not be developed. It would remain primarily in agricultural production.

Comparative Environmental Effects

The No Project/No Development Alternative would produce no changes on the project site, which would effectively eliminate all project impacts identified in the Draft EIR. Because the site would remain in its current condition, there would be no impacts associated with introducing buildings and people into an area that is currently undeveloped. The drainage on the site would remain unchanged, as would the biological resources present on the site. New residences would not be introduced to the site, so there would be no demand for new services or extension of utilities into the site. Similarly, the absence of residents would result in no traffic generation as well as no increase in noise associated with traffic or increase in air pollutants at the site. Because no development would occur, there would be no change to the visual quality of the site, and ground disturbing activities would not occur, so there would be no impacts associated with such activities (i.e., dust, construction emissions, and noise).

Mitigation That Would No Longer Be Required

None of the mitigation measures identified in this EIR would be required under the No Project/ No Development Alternative.

Significant and Unavoidable Impacts That Would No Longer Occur

None of the significant and unavoidable impacts identified in this EIR would occur under the No Project/No Development Alternative.

Relationship of the No Project/No Development Alternative to the Project Objectives

The No Project/No Development Alternative would be environmentally superior to the proposed project, because none of the environmental impacts identified in Chapter 5 would occur. However, the No Project/No Development Alternative would not achieve any of the project objectives.

No Project/Existing Zoning Alternative

The No Project/Existing Zoning Alternative assumes that the proposed project site would be developed consistent with currently allowable land uses, zoning, and development intensities.

The City of Sacramento General Plan currently designates the majority of the project site for Industrial-Employee Intensive uses, such as a high-tech business park, as shown in Figure 4-1 in Chapter 4, Land Use Compatibility and Consistency. Other General Plan land use designations include Community/Neighborhood Commercial and Office (CNO), Low Density Residential (LDR), Medium Density Residential (MDR), Regional Commercial and Office (RCO), Parks-Recreation-Open Space (P/OS), and Public/Quasi-Public-Miscellaneous (P/QP).

Current zoning districts for the project site include Agricultural (A), Shopping Center-Planned Unit Development (SC-PUD), Single Family Alternative Residential-PUD (R-1A-PUD), Single Family Alternative Review-PUD (R-1A-R-PUD), Multi-Family-PUD (R-2A-PUD), and Manufacturing, Research & Development-PUD (MRD-PUD), as shown in Figure 4-2, in Chapter 4, Land Use.

These zoning designations are generally defined below:

The A zoning district restricts land use within this zone to agriculture and farming and may be used for open space. This district restricts residential units to 1 dwelling unit (du) per 5 acres. The SC-PUD district allows community-serving shopping centers, but prohibits general commercial uses that are not compatible with shopping center retail. This district requires plan review prior to approval of development. The PUD designation attached to this and other zoning districts within the project site allows for greater flexibility in the design of projects that may include a variety of land uses in the same area, such as mixed-use developments. The R-1A-PUD district allows low- to medium-density attached or detached single-family homes in areas where the requirements may vary from those of the standard single-family districts. This district has a maximum density of 15 dus per acre. The R-1A-R-PUD district has the same allowances and restrictions as the R-1A-PUD district, but with the added caveat that proposed development is required to undergo a review to

specifically ensure that it is compatible with surrounding uses and that necessary infrastructure is in place to serve it. The R-2A-PUD district is a multi-family residential zone that provides garden apartments and cluster housing. This district has a maximum density of 17 dus per acre. The MRD-PUD zoning district is intended to provide prime industrial land for high quality manufacturing, assembly, research and development, and similar uses in a campus-park-like business park setting. Incompatible uses are prohibited.

Under the No Project/Existing Zoning Alternative, these zoning districts would remain in place, so that the project site would only be able to develop agricultural, shopping center retail, single-family residential, multi-family residential, and high quality manufacturing, assembly, and research and development uses within the project site. The PUD designation within several of the zoning districts would allow greater flexibility for some mixed uses, but some proposed uses would not be allowed under the current zoning districts. For example, the proposed project would include up to 1,738 high-density residential units with a maximum density of 26 du per acre and 187 mixed-use podium style residences with a maximum density of 29 du per acre. These units would be prohibited under current zoning since the R-1A and R-2A districts have maximum densities of 15 and 17 du per acre, respectively. In addition, current zoning includes agricultural zoning, which would limit residential development to 1 du per 5 acres.

Based on the current zoning map of the project site (see Figure 4-2), approximately 480 acres of the site is zoned as MRD-PUD, 200 acres of R-1A-PUD and/or R-1A-R-PUD, 80 acres of R-2A-PUD, 24 acres of A and/or A-PUD, and 16 acres of SC-PUD. For residential uses, including agricultural, maximum allowable densities from the City's Zoning Code were used to estimate the number of dwelling units that could be developed under the current zoning districts. Based on the assumptions of 1 dwelling unit per 5 acres for agricultural, 15 dwelling units per acre for R-1A zones, 17 dwelling units per acre for R-2A zones, existing zoning on the project site could result in the development of a maximum of 4,365 dwelling units. Approximately 60 percent of the site is zoned MRD-PUD, which, according to the City of Sacramento General Plan, would typically have an employee intensity of 30 to 45 employees per acre,¹ so the project site could accommodate up to 21,600 employees in up to 6,000,000 square feet of buildings. This would be a major contributor to potential environmental impacts on the site, as employees would travel to and from the site daily and use resources while there.

Comparative Environmental Effects

Development consistent with the City's current land use designations and zoning districts would result in many similar impacts as the proposed project. Except for the land zoned for agricultural, the site would be graded and developed, which would result in similar impacts on biological resources, drainage, and air quality, construction-related noise. For construction-related air quality impacts, the analysis assumes that construction would occur over three phases, but as shown, impacts would be similar. Some phases of construction would result in higher levels of air pollutants than the proposed project, while other phases would have less severe impacts than the project.

1 City of Sacramento, *City of Sacramento 1988 General Plan*, Commerce and Industry Land Use Element, 1988, page 4-11.

Table 6-2 shows air pollutant levels for construction of this alternative. Mitigation measures identified for the proposed project would still be necessary to reduce these impacts. The areas zoned for agricultural would remain in agricultural production or as open space, so impacts on agricultural resources would be reduced compared to the project. Because a majority of the site would be converted to developed uses under this alternative, the aesthetic impact of this alternative would be the same as the proposed project. It is assumed that this alternative would adequately plan for drainage and that the potential for on-site and off-site drainage impacts and effects on water quality would be the same as the proposed project. Although residential development on most of the site could occur under this alternative, reduction in the number of residences under this alternative would result in less severe impacts on public services and utilities. The shift from the regional commercial center with shopping uses to a high-tech business park would cause a change from out-of-area shoppers making vehicle trips in and out of the project site to large number of employees commuting in and out of the project site on weekdays. Despite the loss of traffic resulting from the regional commercial uses, the large number of employees would likely result in traffic impacts similar to that of the proposed project. In addition, the loss of the regional commercial uses would also require residents living within the project site to drive out of the site for shopping at these types of retail venues. Based on Institute of Transportation Engineers (ITE) trip generation standards, the number of daily traffic trips under this alternative is estimated to be around 79,594, compared to the proposed project at 79,923. This would be a slight decrease in traffic, which would translate to operational air quality impacts that are slightly reduced from the proposed project, but would still exceed significance thresholds. Table 6-3 shows operational impacts on air quality. Operational noise impacts would be anticipated to be similar to that of the proposed project.

The reduction in the number of dwelling units would reduce the anticipated population of the project site to approximately 11,218, down from the 13,086 estimated under the proposed project. In general, this would reduce the demand for population-based services, such as demand for police, fire, schools, and parks. However, as shown in Table 6-4, due to the addition of the employee-intensive MDR uses under this alternative would actually result in a higher demand for water at the project site, up from 4.98 MGD estimated under the proposed project to 5.4 for this alternative. Wastewater generation, on the other hand, would decrease slightly: the alternative would generate approximately 1.9 MGD of wastewater, whereas the proposed project would generate 2.03 MGD of wastewater (see Table 6-5).

Mitigation That Would No Longer Be Required

The No Project/Existing Zoning Alternative would involve construction on most of the site, although less than the project; therefore, the impacts would be somewhat reduced compared to those associated with the proposed project, but would require the same mitigation as the project. Impacts on aesthetics, biological resources, and hydrology and water quality would remain the same under this alternative and would therefore require the same mitigation. However, due to the employee-intensive uses allowed under the MRD-PUD zoning, traffic trips under this alternative would be greater than that of the project. Impacts on agricultural resources, air quality, and noise, may be slightly reduced under this alternative, but they would not be reduced to a level that would no longer require mitigation. All mitigation proposed under the proposed project would still be required under this alternative.

TABLE 6-2				
NO PROJECT/EXISTING ZONING ALTERNATIVE CONSTRUCTION EMISSIONS IN PEAK POUNDS PER DAY				
	ROG	NO_x	CO	PM₁₀
Year 2008				
Phase 1 Demolition	7.91	79.49	39.74	31.30
Phase 1 Mass Grading	10.42	87.75	46.13	444.48
Phase 1 Paving	10.30	38.62	18.02	2.55
Phase 1 Building Construction	13.34	102.90	178.06	5.97
Year 2009				
Phase 1 Building Construction	12.44	96.31	166.02	5.61
Phase 1 Architectural Coating	857.20	0.52	11.75	0.07
Year 2010				
Phase 2 Mass Grading	12.40	107.13	55.22	1,719.99
Year 2011				
Phase 2 Mass Grading	11.66	100.73	52.09	1,719.58
Phase 2 Paving	29.57	76.53	32.13	4.30
Phase 2 Building Construction	31.14	209.89	644.51	13.27
Phase 2 Architectural Coating	6,210.45	3.08	71.63	0.53
Year 2012				
Phase 2 Architectural Coating	6,210.25	2.79	65.78	0.53
Year 2011				
Phase 3 Mass Grading	14.10	123.44	61.64	1,730.48
Year 2012				
Phase 3 Mass Grading	13.44	115.68	58.19	1,730.07
Phase 3 Paving	29.21	69.08	29.97	3.94
Phase 3 Building Construction	31.08	222.24	613.48	14.02
Phase 3 Architectural Coating	5,746.90	2.58	60.87	0.49
Source: PBS&J, 2007.				

TABLE 6-3		
NO PROJECT/EXISTING ZONING ALTERNATIVE DAILY OPERATIONAL EMISSIONS		
Emissions Source	Emissions in Pounds per Day	
	ROG	NO_x
Natural Gas	4.93	63.95
Hearth	396.45	91.32
Landscape Maintenance	24.83	1.62
Consumer Products	196.83	0.00
Architectural Coatings	87.5	0.00
Motor Vehicles	558.27	724.7
Maximum Daily Emissions	1,268.81	881.59
SMAQMD Thresholds (lb/day)	65	65
Significant Impact	Yes	Yes
Source: PBS&J, 2007. Calculation sheets are provided in Appendix E.		

TABLE 6-4				
NO PROJECT/EXISTING ZONING ALTERNATIVE LAND USE AND WATER DEMAND SUMMARY				
	Acres	Units	Water Demand Factor	Average Day Demand (gpd)
Residential Uses				
High Density Residential Housing Types	53.00	0	230 gpd	-
Medium Density Residential Housing Types	97.10	1360	350 gpd	476,000.0
Low Density Residential Housing Types	38.76	3000	520 gpd	1,560,000.0
Subtotal	188.86	4360		2,036,000.0
Light Industrial	480	6,000,000.00	0.6 gpd/sf	360,000.0
Subtotal	480	6,000,000.00		360,000.0
Parks (AFA) Irrigation	68.1		3.89 af/ac/yr	264.9
Water Feature and Detention Basins	36.0		4.51 af/ac/yr	162.3
Subtotal	68.1			427.2
Public Uses				
Schools	19.8	516,186.00	2.5 af/ac/yr	1,290,465.0
		344,124.00	3.89 af/ac/yr	1,338,642.4
Community Center	3.0	78,408.00	2.5 af/ac/yr	196,020.0
		52,272.00	3.89 af/ac/yr	203,338.1
Subtotal	22.8	990,990.00		3,028,465.4
TOTAL				5,424,892.6
Note: Project area was included in the City of Sacramento Urban Water Management Plan, Adopted November 14, 2006. Sources: Jim Peifer, Senior Engineer, City of Sacramento Department of Utilities Memorandum to PMC Consultants, December 21, 2005; Billings, R.B., and C.V. Jones, <i>Forecasting Urban Water Demand</i> , American Water Works Association, 1996; Placer County Water Agency IRWP, October 2005..				

TABLE 6-5				
NO PROJECT/EXISTING ZONING ALTERNATIVE WASTEWATER GENERATION				
Use	Unit of Measurement	Generation Rate (1 ESD =400 gpd)	ESD	Wastewater (gpd)
Single Family	3,000	1 per unit	3,000	1,200,000
Multi Family	1,360	0.75 per unit	1,020	408,000
Light Industrial	6,000,000	90% of water demand	n/a	324,000
Fire Station	1	1 per station	1	400
Schools	2	1.4 per 100 average daily attendance	0	11
Community Center	20,000	0.3 per 1,000 sf of gross floor area	6	2,400
TOTAL (gpd)				1,934,811
TOTAL (mgd)				1.9
Source: PBS&J, 2007.				

Significant and Unavoidable Impacts that Would No Longer Occur

Construction and transportation-related air quality impacts would be reduced in magnitude under this alternative, along with impacts on traffic. However, although some impacts would be less severe, all of the significant and unavoidable project-specific and cumulative impacts identified under the project would still occur under the No Project/Existing Zoning Alternative.

Relationship of the No Project/Existing Zoning Alternative to the Project Objectives

The No Project/Existing Zoning Alternative would be generally consistent with most of the proposed project objectives, with the exception of providing regional and neighborhood retail and associated hospitality services to satisfy demand in South Sacramento. This alternative would provide residential uses close to existing transportation corridors and employment centers (which would be developed under this alternative) in an area adjacent to existing residential development. Development under this alternative would also be consistent with existing land use designations and zoning for the site. Although the alternative would provide residential development, the number of residences would be reduced from that of the proposed project. Therefore, although this alternative would fulfill nearly all the project objectives, it would not necessarily meet the overall intent of the project objectives as well as the proposed project would.

Reduced Density/All Residential Alternative

The Reduced Density/All Residential Alternative assumes that the regional commercial uses proposed by the project would not be developed and would be replaced by residential uses. The smaller neighborhood commercial area within the project site would however, still be developed. In addition to the removal of the regional commercial uses, the density of the residential component under this alternative would be reduced by 20 percent, to 4,178 units. Assuming that approximately 42 acres of the regional commercial uses would be developed as medium-density residential and the remaining 83.6 acres would be developed as low-density residential with a 20 percent density reduction from the maximum densities, the 121.9 acres of regional commercial uses would be replaced by approximately 460 medium-density units and 462 low-density units, for a total of 922 residences replacing the 121.9 acres of regional commercial uses proposed under the project. When combined with the overall 20 percent reduction in the number of residential units proposed under the proposed project, this would result in a total of approximately 5,100 residential units that would be developed as part of this alternative. Although there would be a 20 percent reduction in density, the replacement of the regional commercial uses with residential development would result in a net loss of only 122 residential units relative to the proposed project, nearly replacing the residential units lost due to the density reduction. This alternative would develop all of the other uses proposed by the project, including 19.9 acres of residential/mixed-use, two elementary schools, parks, open space, fire station, and other public uses. This alternative assumes the project's footprint would remain the same.

Comparative Environmental Effects

Because this alternative would develop the same footprint as the proposed project, the impacts associated with grading activities and the conversion of land uses (agricultural resources, biological resources, and hydrology and water quality) would remain the same. The reduction in the number of housing units and loss of the regional commercial uses would change the aesthetic quality of the site from that of the proposed project, but the overall effect of replacing the currently vacant site with residential development would permanently change the visual appearance of the site and add light and glare to the area. These impacts, like the proposed project, would be less than significant. Construction-related impacts, such as an increase in air pollutants and noise would be slightly

reduced, since the regional commercial uses would not be constructed under this alternative, although the impacts would likely remain significant for a short period of time associated with residential development, requiring mitigation for construction-related air quality and noise impacts. Table 6-6 shows the air pollutant levels for construction activities for this alternative.

TABLE 6-6				
REDUCED DENSITY/ALL RESIDENTIAL ALTERNATIVE				
CONSTRUCTION EMISSIONS IN PEAK POUNDS PER DAY				
	ROG	NO_x	CO	PM₁₀
Year 2008				
Residential Phase 1 Demolition	7.91	79.49	39.74	31.30
Residential Phase 1 Mass Grading	10.42	87.75	46.13	501.68
Residential Phase 1 Paving	11.21	41.17	18.91	2.67
Residential Phase 1 Building Construction	16.07	74.32	340.07	5.30
Year 2009				
Residential Phase 1 Building Construction	14.82	69.32	314.97	5.08
Residential Phase 1 Architectural Coating	2,990.42	1.82	40.98	0.26
Year 2010				
Commercial Component Mass Grading	3.03	25.04	13.54	56.06
Commercial Component Fine Grading	3.03	25.04	13.54	56.06
Commercial Component Paving	3.56	18.15	12.05	1.50
Commercial Component Building Construction	4.07	18.22	23.54	1.33
Residential Phase 2 Mass Grading	11.27	95.65	49.31	1,038.68
Year 2011				
Commercial Component Building Construction	3.76	17.18	22.20	1.27
Commercial Component Architectural Coating	173.14	0.09	2.00	0.01
Residential Phase 2 Mass Grading	10.55	89.79	46.72	1,038.29
Residential Phase 2 Paving	19.04	53.41	23.97	3.24
Residential Phase 2 Building Construction	12.77	59.19	280.67	4.68
Residential Phase 2 Architectural Coating	3,049.94	1.51	35.18	0.26
Year 2012				
Residential Phase 2 Architectural Coating	3,049.85	1.37	32.30	0.26
Year 2011				
Residential Phase 3 Mass Grading	10.55	89.79	46.72	895.29
Year 2012				
Residential Phase 3 Mass Grading	10.00	84.03	44.35	894.95
Residential Phase 3 Paving	16.49	44.09	20.98	2.78
Residential Phase 3 Building Construction	12.65	55.18	296.09	4.70
Residential Phase 3 Architectural Coating	3,035.77	1.37	32.16	0.26

Source: PBS&J, 2007.

The reduction in the number of housing units would result in a corresponding reduction in the number of people inhabiting the project area, so impacts associated with increases in population, such as increased demand for public services and utilities, would be reduced accordingly. For example, based on the generation factors provided in the EIR, wastewater generation under this alternative would be reduced to approximately 1.91 million gallons per day (mgd), down from 2.03 mgd estimated under the proposed project (see Table 6-7). Water demand would be reduced to 4.8 mgd, compared to 4.98 mgd for the proposed project, as shown in Table 6-8. Solid waste generation would be reduced to 3,911 tons of solid waste per year, down from 7,914 tons, as estimated under the proposed project. Since net loss of residential units under this alternative is relatively low, the number of police and fire staff needed to serve the site under this alternative would

TABLE 6-7

**REDUCED DENSITY/ALL RESIDENTIAL ALTERNATIVE
WASTEWATER GENERATION**

Use	Unit of Measurement	Generation Rate (1 ESD =400 gpd)	ESD	Wastewater (gpd)
Single Family	3,601	1 per unit	3,601	1,440,400
Multi Family	1,498	0.75 per unit	1,124	449,400
Retail	161,600	0.2 per 1,000 sf	32	12,928
Fire Station	1	1 per station	1	400
Schools	2	1.4 per 100 average daily attendance	0	11
Community Center	20,000	0.3 per 1,000 sf of gross floor area	6	2,400
TOTAL (gpd)				1,905,539
TOTAL (mgd)				2

Source: PBS&J, 2007.

TABLE 6-8

**REDUCED DENSITY/ALL RESIDENTIAL ALTERNATIVE
LAND USE AND WATER DEMAND SUMMARY**

	Acres	Units	Water Demand Factor	Average Day Demand (gpd)
Residential Uses				
High Density Residential Housing Types		1498	230 gpd	344,540.0
Medium Density Residential Housing Types		2599	350 gpd	909,650.0
Low Density Residential Housing Types		1002	520 gpd	521,040.0
Subtotal		5099		1,775,230.0
Parks (AFA) Irrigation	68.1		3.89 af/ac/yr	264.9
Water Feature and Detention Basins	36.0		4.51 af/ac/yr	162.3
Subtotal	68.1			427.2
Public Uses				
Schools (indoor)	19.8	516,186.00	2.5 af/ac/yr	1,290,465.0
(outdoor)		344,124.00	3.89 af/ac/yr	1,338,642.4
Community Center (indoor)	3.0	78,408.00	2.5 af/ac/yr	196,020.0
(outdoor)		52,272.00	3.89 af/ac/yr	203,338.1
Subtotal	22.8	990,990.00		3,028,465.4
Subtotal of Land Uses with Water Demands (i)	409.9			4,813,892.85
Subtotal of Non-Irrigated Areas (h)	371.8	0.0	0.0	4,813,892.85
TOTALS	781.8			4,813,892.85

Note:

Project area was included in the City of Sacramento Urban Water Management Plan, adopted November 14, 2006.

Sources: Jim Peifer, Senior Engineer, City of Sacramento Department of Utilities Memorandum to PMC Consultants, December 21, 2005; Placer County Water Agency IRWP, October 2005.

not change dramatically. Approximately 39 to 50 sworn and civilian police personnel would be required, depending on the staffing ratio used. Like the proposed project, the fire station within the project site would be sufficient to maintain levels of service.

Similarly, impacts associated with development and operation of a large regional commercial center (such as vehicle trips) would be far less than under the proposed project. In addition, the limited commercial uses under this alternative would be mostly neighborhood-serving, and would not likely draw large numbers of people from other areas of the city. However, with the loss of the commercial uses, residents within the project site may need to travel to other areas of the city for the larger, regional commercial uses. Although fewer people would live within the project site and fewer people from other areas would travel to the site, residents may make more outside trips. Traffic impacts would likely be slightly reduced, but not by enough to drastically reduce adverse traffic, and air quality impacts. As shown in Table 6-9, operational air quality impacts would be lower than the proposed project, but would still exceed significance thresholds. Air Quality emissions for this alternative were modeled in three construction phases; however, the impacts are still lower than under the proposed project.

Emissions Source	Emissions in Pounds per Day	
	ROG	NO_x
Natural Gas	5.72	74.15
Hearth	463.65	106.96
Landscape Maintenance	30.67	1.94
Consumer Products	230.19	0.00
Architectural Coatings	62.93	0.00
Motor Vehicles	466.62	645.61
Maximum Daily Emissions	1,259.78	828.66
SMAQMD Thresholds (lb/day)	65	65
Significant Impact	Yes	Yes

Source: PBS&J, 2007. Calculation sheets are provided in Appendix E.

Mitigation that Would No Longer be Required

The Reduced Density/All Residential Alternative would generally involve the same level of disturbance as the proposed project, so all impacts associated with ground disturbing activities and converting land uses on the site would be the same, including loss of agricultural resources, biological resources, and a change in the hydrology and water quality. All of the mitigation required to reduce these impacts would still be required. Under this alternative, the visual character of the site would change, but, like the proposed project, no mitigation would be required. Impacts on air quality, noise, and traffic may also be reduced under this alternative due to the slight reduction in residential units and loss of the regional commercial uses, but they would not be reduced to a level that would no longer require mitigation. All mitigation proposed under the proposed project would still be required.

Significant and Unavoidable Impacts that Would No Longer Occur

Although some impacts associated with air quality and traffic may be reduced under this alternative due to the smaller number of residential units and reduction in regional commercial uses, they would still exceed established thresholds for acceptable levels for air emissions and traffic levels of service. Therefore, all of the significant and unavoidable impacts identified under the proposed project would also occur under the Reduced Density/All Residential Alternative.

Relationship of the Reduced Density/All Residential Alternative to the Project Objectives

The Reduced Density/All Residential Alternative would not meet all of the proposed project objectives. The only objectives this alternative would meet would be the development of residential uses in areas contiguous to existing development and to provide circulation and infrastructure improvements. Development under this alternative would not provide housing in close proximity to employment centers, provide regional and neighborhood serving retail, or provide hospitality uses to serve travelers on I-5. This would not meet the objectives or intent of the proposed project to the extent that the proposed project would.

Environmentally Superior Alternative

The environmentally superior alternative would be the No Project/No Development Alternative because it would eliminate and/or reduce the significant impacts identified for the proposed project. However the No Project/No Development Alternative does not achieve any of the project's objectives. CEQA Guidelines Section 15126.6(e)(2) states that when the No Project/No Development Alternative is identified as the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives. The other two alternatives analyzed would result in similar impacts to that of the proposed project. Each would result in less severe impacts than the proposed project on air quality, noise, and public services. Each would have impacts equal to the proposed project in the areas of aesthetics, biological resources, and hydrology and water quality. The No Project/Existing Zoning Alternative would result in slightly reduced traffic impacts than the proposed project. However, the Reduced Density/All Residential Alternative would have a slight advantage over the No Project/Existing Zoning Alternative, including slightly fewer air emissions during operation and have smaller water demands and wastewater generation than both the proposed project and the No Project/Existing Zoning Alternative. Therefore, the Reduced Density/All Residential Alternative would be the environmentally superior alternative.

7.0 CEQA CONSIDERATIONS

7.0 CEQA CONSIDERATIONS

INTRODUCTION

Section 15126 of the California Environmental Quality Act (CEQA) Guidelines requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the EIR must also identify (1) significant environmental effects of the proposed project, (2) significant environmental effects that cannot be avoided if the proposed project is implemented, (3) significant irreversible environmental changes that would result from implementation of the proposed project, and (4) growth-inducing impacts of the proposed project. It should be noted that although growth inducement itself is not considered an environmental effect, it could potentially lead to foreseeable physical environmental effects, which are discussed under Growth Inducing Impacts, below.

Significant Environmental Effects

Chapter 3 of this EIR, Summary of Impacts and Mitigation Measures, and Sections 5.1 through 5.10 of this EIR provide a comprehensive identification of the proposed project's environmental effects, including the level of significance both before and after mitigation.

Significant and Unavoidable Impacts

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with implementation of feasible mitigation measures. The environmental effects of the proposed project on various aspects of the environment are discussed in detail in Chapter 5 of this EIR. Project-specific and cumulative impacts that cannot be avoided if the project is approved as proposed include:

Project-Specific Significant and Unavoidable Impacts

- 5.3-3 Operation of the proposed project would contribute to emissions of ozone precursors.
- 5.6-3 Operation of the proposed project could permanently expose sensitive receptors to increased traffic noise levels from local roadways.
- 5.9-7 Implementation of the project under Baseline plus Project conditions could affect the Meadowview Road/24th Street intersection.
- 5.9-9 Under Baseline Plus Project conditions, the project would have a significant impact on freeway operations.

Cumulative Significant and Unavoidable Impacts

- 5.3-9 Operation of the proposed project, combined with other on-going development in the air basin, would increase cumulative levels of ozone precursors.

- 5.9-13 Under Cumulative plus Project conditions the segment of Cosumnes River Boulevard from I-5 to Delta Shores Circle could be impacted by the project.
- 5.9-14 Under Cumulative plus Project conditions the segment of Detroit Boulevard south of Meadowview Road could be impacted by the project.
- 5.9-16 Under Cumulative plus Project conditions the Meadowview Road/24th Street intersection could be impacted by the project.
- 5.9-20 Under Cumulative plus Project conditions the Cosumnes River Boulevard/Delta Shores Circle (West) intersection could be impacted.
- 5.9-23 Under Cumulative Plus Project conditions, the project would have a significant cumulative impact on freeway operations.

Significant Irreversible Environmental Effects

Section 15126.2(c) of the CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by the proposed project. Section 15126.2(c) states:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Generally, a project would result in significant irreversible environmental changes if:

- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project;
- The project would involve a large commitment of nonrenewable resources;
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Development of the proposed project would result in the continued commitment of the project site to urban development, thereby precluding any other uses for the lifespan of the project. Restoration of the site to a less developed condition would not be feasible given the degree of disturbance, the urbanization of the area, and the level of capital investment.

The CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by an accident associated with the project. While the project would result in the

use, transport, storage, and disposal of hazardous wastes, as described in the Initial Study (see Appendix A) all activities would comply with applicable state and federal laws related to hazardous materials transport, use and storage, which significantly reduces the likelihood and severity of accidents that could result in irreversible environmental damage.

Implementation of the proposed project would result in the long-term commitment of resources to urban development. The most notable significant irreversible impacts are urbanization of the site and the change in visual character of the site, increased generation of pollutants, and the short-term commitment of non-renewable and/or slowly renewable natural and energy resources, such as water resources during construction activities. Operations associated with future uses would also consume fossil fuels, water and natural gas and electrical energy. These unavoidable consequences of urban growth are described in the appropriate sections in Chapter 5 of this EIR and in the Initial Study (Appendix A).

Resources that would be permanently and continually consumed by project implementation include water, electricity, natural gas, and fossil fuels; however, the amount and rate of consumption of these resources would not result in the unnecessary, inefficient, or wasteful use of resources. With respect to operational activities, compliance with all applicable building codes, as well as mitigation measures, planning policies, and standard conservation features, would ensure that natural resources are conserved to the maximum extent possible. It is also possible that new technologies or systems will emerge, or will become more cost-effective or user-friendly, to further reduce the reliance upon nonrenewable natural resources. Nonetheless, construction activities related to the proposed project would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobiles and construction equipment.

Growth Inducing Impacts

As required by section 15126.2(d) of the CEQA Guidelines, an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, the EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional growth. Although growth inducement itself is not considered an environmental effect, it could potentially lead to environmental effects.

In general, a project may foster spatial, economic, or population growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public service, the provision of new access to an area; a change in zoning or general plan amendment approval); or economic expansion or growth occurs in an area in response to the project (e.g., changes in revenue base, employment expansion, etc). These circumstances are further described below:

- **Elimination of Obstacles to Growth:** This refers to the extent to which a proposed project removes infrastructure limitations or provides infrastructure capacity, or removes regulatory constraints that could result in growth unforeseen at the time of project approval.
- **Economic Effects:** This refers to the extent to which a proposed project could cause increased activity in the local or regional economy. Economic effects can include effects such as the “multiplier effect.” A “multiplier” is an economic term used to describe inter-relationships among various sectors of the economy. The multiplier effect provides a quantitative description of the direct employment effect of a project, as well as indirect and induced employment growth. The multiplier effect acknowledges that the on-site employment and population growth of each project is not the complete picture of growth caused by the project.

Elimination of Obstacles to Growth

Growth in an area may result from the removal of physical impediments or restrictions to growth, as well as the removal of planning impediments resulting from land use plans and policies. In this context, physical growth impediments may include nonexistent or inadequate access to an area or the lack of essential public services (e.g., water service), while planning impediments may include restrictive zoning and/or general plan designations. However, the project site as well as land to the east of the site are located within the City of Sacramento and have been slated for future development under the City’s General Plan.

An established transportation network exists in the area surrounding the project site that offers local and regional access to the project site. The major existing roadways near the site include Meadowview Road to the north, 24th Street, Freeport Boulevard, and Interstate 5 (I-5). A separate project is planned that would construct Cosumnes River Boulevard through the project site, as well as a freeway interchange with I-5. The new Cosumnes River Boulevard would connect Freeport Boulevard to Franklin Boulevard, providing a better connection between that portion of the city and I-5. Although this road has not yet been constructed, it would improve traffic circulation in the area and remove an obstacle for growth. However, the construction of Cosumnes River Boulevard and I-5 interchange is not a part of this project, but is an essential part of the proposed project’s circulation system. In addition to Cosumnes River Boulevard, on-site circulation would be facilitated by a system of internal streets. The development of this internal circulation system would remove an obstacle to growth in the project area, although growth to the west would be limited by the Sacramento River and growth to the south would be limited by the SRCSD bufferlands and the City of Elk Grove. North of the project site is developed and lands to the east, within the City’s boundaries, although not yet developed are slated for future development.

The project site does not currently contain water service infrastructure, but water service to the project site would be provided by connecting to existing transmission mains in Meadowview Road and 30th Street, both to the north of the project site. The proposed project would require the construction of water lines into the project area, which would allow development to occur within the project site; these lines could extend water service to the vacant area east of the project site,

removing that obstacle to growth. Similarly, the project site contains very little existing sanitary sewer infrastructure. However, the project site does contain a major 96-inch sewer pipeline known as the City Interceptor, which runs alongside the east side of I-5. There are also two pipelines located at the northern boundary of the site; one segment runs east of a connection with the City Interceptor for a short distance, while the other is located at the project site's boundary with the Sacramento Job Corps facility. New sewer infrastructure would connect these existing pipelines with the City Interceptor. Construction of the local sanitary sewer collection system would enable growth within the project site and possibly the area located just east of the project site, thus removing that barrier to growth. As such, the development of on-site water and sewer infrastructure to serve the project could support other development in the area just east of the project site.

Electricity and natural gas transmission infrastructure presently exists on and in the vicinity of the project site. Development of the project would necessitate the construction of local electricity and natural gas transmission and distribution facilities to serve individual uses within the project site. In addition, the proposed project includes the relocation of a 21-inch existing natural gas line to the opposite side of I-5. However, the proposed project would not result in the need for additional off-site infrastructure with the exception of a detention basin. The only necessary electricity and natural gas infrastructure required for the proposed project would be for the local distribution of electricity and natural gas within the proposed project, along with the relocation of the 21-inch natural gas line. These facilities would be sized specifically to serve the project and would not be intended to serve other future development in the project area. Therefore, the proposed project would not remove this as an obstacle to growth.

The proposed project would develop infrastructure such as roads, water lines, wastewater lines, electricity facilities, and natural gas infrastructure to serve the uses within the project site. Construction of the circulation system within the project site would mainly serve the uses within the project site. The main contributor to potential future growth in the project area with regard to roads would be the construction of Cosumnes River Boulevard. However, although Cosumnes River Boulevard is a major roadway that transects the site, it is a separate project that has gone through its own environmental review process. The project itself would not provide a substantial opportunity to expand future growth in the project area, especially since most of the surrounding area is already built out. The extension of water and wastewater lines into the project site would primarily serve the uses within the project site as well; however, the extension of this infrastructure into the project site could allow further extension of new infrastructure into the vacant area directly east of the project site, possibly contributing to growth there. Beyond that, most of the surrounding area is built out or constrained by the SRCSD bufferlands, which are protected from future development. Electricity and natural gas infrastructure within the project site would serve the proposed project alone, and no additional infrastructure that could aid future growth would be necessary.

Economic Effects

In addition to the employment generated by the proposed project, additional local employment can be generated through the multiplier effect. The multiplier effect tends to be greater in regions with

larger diverse economies due to a decrease in the requirement to import goods and services from outside the region.

Two different types of additional employment are tracked through the multiplier effect. Indirect employment includes those additional jobs that are generated through the expenditure patterns of direct employment associated with the project. For example, workers in the commercial and retail portions of the proposed project would spend money in the local economy, and the expenditure of that money would result in additional jobs. Indirect jobs tend to be in relatively close proximity to the places of employment and residence.

The multiplier effect also calculates induced employment. Induced employment follows the economic effect of employment beyond the expenditures of the employees within the proposed project area to include jobs created by the stream of goods and services necessary to support businesses within the proposed project. For example, when a manufacturer buys or sells products, the employment associated with those inputs or outputs are considered induced employment.

When an employee from the project goes out to lunch, the person who serves the project employee lunch holds a job that was indirectly caused by the proposed project. When the server then goes out and spends money in the economy, the jobs generated by this third-tier effect are considered induced employment.

The multiplier effect also considers the secondary effect of employee expenditures. Thus, it includes the economic effect of the dollars spent by those employees who support the employees of the project.

Increased future employment generated by employee spending ultimately results in physical development of space to accommodate those employees. It is the characteristics of this physical space and its specific location that will determine the type and magnitude of environmental impacts of this additional economic activity. Although the economic effect can be predicted, the actual environmental implications of this type of economic growth are too speculative to predict or evaluate, since they can be spread throughout the Sacramento metropolitan region and beyond.

Impacts of Induced Growth

Planning documents, such as the City of Sacramento 1988 General Plan and the Airport/Meadowview Community Plan as well as the draft City of Sacramento 2030 General Plan and draft South Area Community Plan, try to plan for future growth and plan for potential impacts due to this growth. While these documents attempt to incorporate the most current population projections, new development projects are often not included in the plans. For example, since the adoption of the current General Plan (1988), the City has begun working toward higher intensity uses throughout the city, which would cause an increase in population which could exceed existing General Plan projections. Currently the City is preparing a new General Plan that plans for growth through 2030. The City anticipates adopting the 2030 General Plan in late 2008/early 2009.

In addition to city-wide growth, the proposed project would increase the population within the south area by approximately 13,100 new residents. While growth in this area of the city is an intended consequence of the proposed project, growth induced directly and indirectly by the proposed project could adversely affect the greater Sacramento area. Potential impacts associated with induced growth in the area could include: traffic congestion; air quality deterioration; loss of habitat and wildlife; impacts on utilities and services, such as fire and police protection, water, recycled water, wastewater, solid waste, energy, and natural gas; and increased demand for housing.

Specifically, an increase in population-growth-induced housing demand in the greater Sacramento region could cause significant environmental effects as new residential development which would require governmental services, such as schools, libraries, and parks. Indirect and induced employment and population growth would further contribute to the loss of open space because it would encourage conversion to urban uses for housing and infrastructure.

While the proposed project would contribute to direct, indirect, and induced growth in the area, it would also develop this area of the city which is a goal of the City's existing and new General Plan.

Cumulative Impacts

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with project implementation. This assessment involves examining project-related effects on the environment in the context of similar effects that have been caused by past or existing projects, and the anticipated effects of future projects. Although project-related impacts may be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed (CEQA Guidelines, section 15130(a)). Each subsection of Chapter 5, Environmental Analysis, concludes with a cumulative impact analysis for the issue area addressed in the subsection.

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 an individual project would be considerable when viewed in combination with the effects of past projects, the effects of other current projects, and the effects of probable future projects (CEQA Guidelines, 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 states further that "individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is 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.

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.

For the purpose of this EIR analysis, the cumulative impacts analysis assumes buildout of the City of Sacramento General Plan. There are no recently approved projects in the south area of the city or within the project vicinity with the exception of the extension of Cosumnes River Boulevard.

While the cumulative analysis takes into consideration the impacts of the project in combination with project's anticipated in the General Plan and/or recently approved or probable future projects, the context of the cumulative analysis varies by technical area. For example, the cumulative context for air quality is dependent on the specific pollutant being considered. For ozone precursors, the cumulative context would be all development occurring in the Sacramento Valley. The cumulative effects of PM₁₀ and CO would be limited to the general vicinity of the project and would be affected only by other local projects being developed concurrently. Cumulative impacts on biological resources are analyzed assuming buildout of the City of Sacramento General Plan. In addition to buildout of the city, biological resources also include SACOG's regional buildout for cumulative impacts on biological resources. Another technical area that considers a larger cumulative context is hydrology and water quality. The hydrology and water quality analysis in this EIR considers development within the Sacramento River watershed.

The cumulative context for aesthetics evaluates the surrounding area from three separate viewsheds in the project vicinity, while the cumulative context for light and glare considers additional development projects that could affect the same sensitive receptors as the proposed project. The cumulative context for noise considers existing and future noise sources that could affect the project or surrounding uses.

The cumulative analysis for public services and utilities typically considers the service area of the issue being analyzed. For example, the cumulative context for the schools analysis is the school district boundaries. Some of the services, such as parks, also analyze impacts until specific horizon dates as specified by the service's master plan.

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9.0 REPORT PREPARATION

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