FEBRUARY 2009

Swanston Station Transit Village Specific Plan

Draft Environmental Impact Report

Prepared for
The City of Sacramento

SCH # 2007062130

Swanston Station Transit Village Specific Plan
Draft Environmental Impact Report

SCH # 2007062130

Prepared for:

City of Sacramento
Environmental Planning Services
Development Services Department
300 Richards Boulevard
Sacramento, CA 95811

Prepared by:

PBS&J
1200 2nd Street
Sacramento, CA 95814

February 18, 2009

THIS PAGE INTENTIONALLY LEFT BLANK

Table of Contents

Page

Page

Page

APPENDICES

LIST OF TABLES

Page

Page

LIST OF FIGURES

Page

Chapter 1
Introduction

1.1 PROJECT OVERVIEW

The proposed Swanston Station Transit Village Specific Plan (Swanston TVSP project or Swanston Station Specific Plan) is a long-range urban design and implementation plan that would guide public and private improvements in the Swanston Station Transit Village Specific Plan area (Swanston TVSP project area or Specific Plan area). The Swanston TVSP project area is irregularly shaped and is roughly bounded by El Camino Avenue on the north, Arden Way on the south and the Capital City Freeway (Business 80) on the east. Beaumont and Erickson Streets define the western edge of the Swanston TVSP project area. The proposed Swanston TVSP project addresses land use, traffic and circulation, infrastructure, financing strategies, and implementation measures that are needed to support the vision for future development and investment in the Swanston TVSP project area.

1.2 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 implementation of the proposed Swanston TVSP 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 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 CEQA regulations, a Notice of Preparation (NOP) was released June 29, 2007 for agency and public review. The purpose of the NOP was to announce the City's intention to prepare an EIR and to solicit comments on the scope and issues that should be considered in preparing the EIR. The NOP comment period closed on July 30, 2007. The NOP was distributed to responsible agencies, interested parties, and landowners within 1,000 feet of the Swanston TVSP project area. A copy of the NOP along with comments received in response to the NOP is provided in Appendix A.

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 proposed Swanston TVSP project Draft EIR will be from February 18, 2009 through April 6, 2009.

Copies of this Draft EIR are available at the following locations:

City of Sacramento Development Services Department
300 Richards Boulevard
Sacramento, CA 95811

City Hall
915 I Street
Development Services Department, 3rd Floor
Sacramento, CA 95814

Sacramento Public Library
828 I Street
Sacramento, CA 95814

Comments may be submitted both in written form and orally 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:

Jennifer Hageman, Senior Planner
City of Sacramento, Development Services Department
300 Richards Boulevard
Sacramento, CA 95811
(916) 808-5538

Upon completion of the public review period, a Final EIR will be prepared that will include written comments on the Draft EIR received during the public review period and the City's responses to those comments. The Final EIR will also include the Mitigation Monitoring Program. 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 EIR for the proposed Swanston TVSP project.

Before the City of Sacramento can approve the proposed Swanston TVSP 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. If necessary, 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 proposed Swanston TVSP project environmental analysis. In conformance with Sections 15050 and 15367 of the State CEQA Guidelines, the City of Sacramento is the designated "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 Swanston TVSP project:

- California Air Resources Board,
- Sacramento Air Quality Management District,
- State Water Resources Control Board,
- Central Valley Regional Water Quality Control Board, and
- Sacramento Housing and Redevelopment Agency.

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 has been identified as a trustee agency with potential jurisdiction over the proposed Swanston TVSP project. The U.S. Army Corps of Engineers (Corps) and U.S. Fish and Wildlife Service may also be responsible or trustee agencies under CEQA for the proposed Swanston TVSP project. These federal agencies have permitting authority over resources that potentially occur in the Swanston TVSP project area.

Required Permits and Approvals

Project approval requires the City of Sacramento to approve the proposed Swanston TVSP project and to issue required City permits or affirm compliance with other agency requirements. Below are the discretionary actions 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.

- certification of an EIR pursuant to the California Environmental Quality Act and associated Guidelines;
- adoption of findings of fact and statement of overriding considerations;
- adoption of a Mitigation Monitoring Plan;
- adoption of the Swanston Station Specific Plan;
- approval of a General Plan Amendment designating property within the Specific Plan area as Residential Mixed Use (46.5± gross acre.) and Mixed Use (187± gross acre);
- approval of a General Plan amendment to the land use diagram;
- approval of a zoning amendment to rezone certain property within the Specific Plan area to Residential Mixed Use Transit Overlay (RMX [TO]) or General Commercial Transit Overlay (C-2 [TO]); and
- approval of amendments to Chapter 17.178 Transit Overlay Zone relating to Specific Plan area setbacks.

1.3 SCOPE OF THIS EIR

This EIR is a "Program EIR," pursuant to Section 15168 of the CEQA Guidelines. A Program EIR examines the environmental impacts for a series of actions that is characterized by one large project or multiple or phased projects. This type of EIR analyzes changes in the environment that would result from implementation of the project, including construction and operation, while considering broader policy alternatives and program-wide mitigation measures early in the planning process. A Program EIR provides the City with greater consideration of effects of the entire proposed Swanston TVSP project and cumulative impacts, and reduces future duplication of paperwork for individual projects within the Swanston TVSP project area.

As discussed in Chapter 2, Project Description, the proposed Swanston TVSP project area is divided into two areas. The smaller area, the Strategic Plan area, is expected to develop first, with planned buildout occurring around 2025. The remainder of the Swanston TVSP area, the Long-Term Plan area, is expected to develop some time after 2025. Because this project is a specific plan, rather than a project, the analyses include assumptions about the level of development that could occur within the respective areas. Development within the Strategic Plan area is based on the development assumptions

derived in a market analysis prepared for the Swanston Station Specific Plan. For the Long-Term Plan area, the assumptions are based on the proposed land uses and the amount of development that would be allowed, based on the proposed zoning. In addition to the development of parcels, the public improvements needed to serve development within the Swanston TVSP project area are analyzed in this EIR.

Population and employment estimates required to analyze the impact of the proposed Swanston TVSP project can be derived based on the number dwelling units and non-residential space at buildout. Impacts to transportation and circulation, air quality impacts, and noise impacts can be evaluated in the context of regional and citywide traffic models and population/employment forecasts.

The City of Sacramento, as lead agency, is responsible for identifying potentially significant impacts that could result from implementation of the proposed Swanston TVSP project. Based on the NOP (see Appendix A), the City determined that this EIR address the following technical issue areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Hazardous Materials
- Hydrology and Water Quality
- Noise
- Public Services
- Utilities
- Transportation and Circulation

1.4 HOW TO USE THIS REPORT

This report includes nine principal chapters: this Introduction, Project Description, Summary, Land Use Consistency and Compatibility, Population and Housing, Environmental Analysis (Setting, Impacts, and Mitigation Measures), Alternatives, CEQA Considerations, and Report Preparation.

Project Description (Chapter 2) describes the location of the project, existing conditions in the Swanston TVSP project area, and the nature and location of specific elements of the proposed Swanston TVSP project, as well as requested project entitlements and/or approvals.

Summary (Chapter 3) presents an overview of the results and conclusions of the environmental evaluation. This section identifies impacts of the proposed Swanston TVSP 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.

Population and Housing (Chapter 5) identifies, estimates, and evaluates population and housing changes that would be caused by development of the proposed Swanston TVSP project that have the potential to cause physical environmental effects.

Environmental Analysis (Chapter 6) includes a topic-by-topic analysis of impacts that would or could result from implementation of the proposed Swanston TVSP project. Topics discussed are those identified in the NOP as requiring further analysis (see Appendix A). The analysis is organized in 11 topical sections. Each section is organized into two major subsections: Setting and Applicable Plans and Policies (existing conditions), and Impacts and Mitigation Measures, including cumulative impacts and mitigation measures.

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

Alternatives (Chapter 8) includes a description of the alternatives to the proposed Swanston TVSP project. 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 Swanston TVSP project. This chapter also identifies the environmentally superior alternative.

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

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

Chapter 2
Project Description

2.1 BACKGROUND

The Swanston Station Transit Village Specific Plan area (Swanston TVSP project area or Specific Plan area), encompassing roughly a ½ mile radius around the Swanston Light Rail Station, is dissected by rail lines and road overpasses that result in poor connectivity and constrained development opportunities. There is currently a patchwork of land use and zoning designations in the Swanston TVSP project area that create a confusing and fragmented regulatory environment. Fewer land use and zoning designations would provide a clearer direction of land use policy. In addition, the existing land uses are inconsistent with the City's vision for the area.

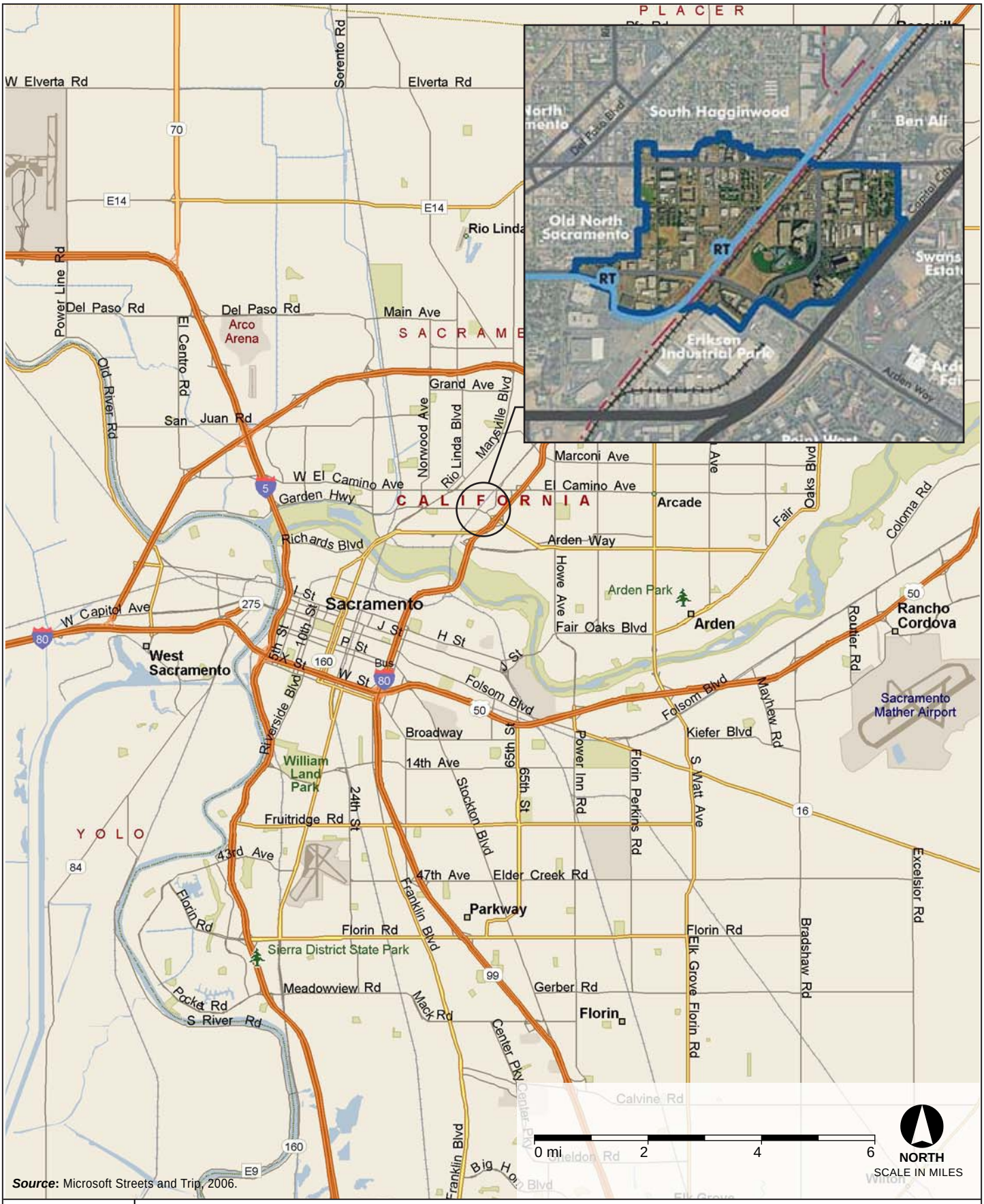
However, the mix of land uses, access to multi-modal transportation, neighborhood amenities, and development momentum from recent projects result in many assets that support the transformation of the Swanston area. There are opportunities to strengthen connectivity, improve the image, upgrade infrastructure, and maximize development potential around the Swanston Light Rail Station. The proposed Swanston Station Transit Village Specific Plan (Swanston TVSP project or Swanston Station Specific Plan) is a vision and roadmap for the future development of this highly challenged area.

2.2 PROJECT LOCATION

The Swanston TVSP project area is located approximately three miles northeast of Downtown Sacramento. Surrounding land uses consist of industrial, office/commercial, and residential to the north and south, residential to the west, and industrial and office/commercial uses to the east. Regional access to the Swanston TVSP project area is provided by Business 80/Capital City Freeway and State Route 160 (SR 160). Local access is provided by Del Paso Boulevard on the west, Arden Way to the south, and El Camino Avenue to the north (see Figure 2-1). The Swanston TVSP project area, encompassing about 230 acres, is roughly bound by El Camino Avenue on the north, Arden Way on the south and the Capital City Freeway on the east. Erickson Street defines the western edge of the Swanston TVSP project area (see Figure 2-2).

Existing Land Uses

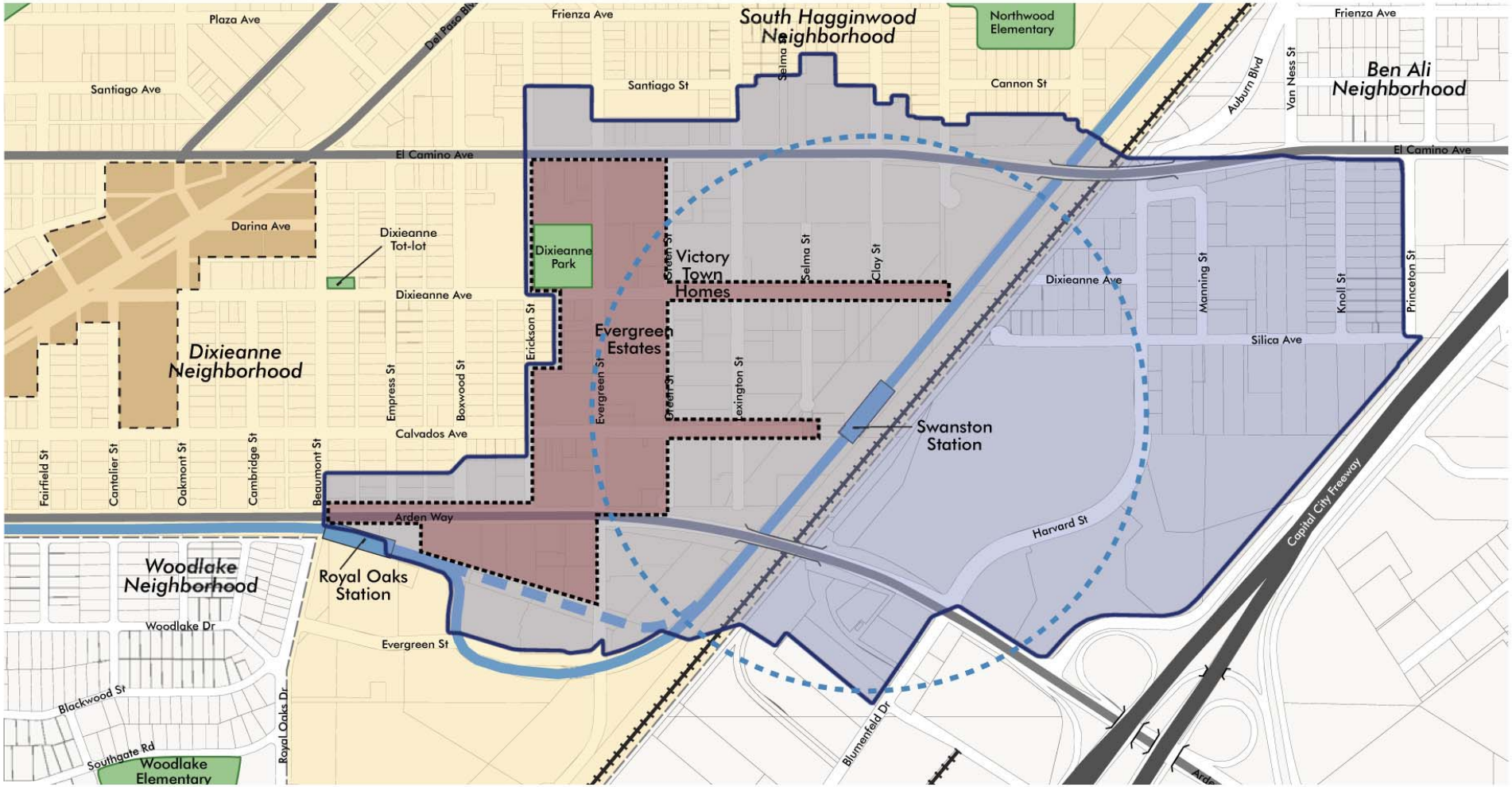
Existing land uses in the Swanston TVSP project area include heavy industrial, commercial, single-family residential, multi-family residential, and vacant parcels. The Sacramento Regional Transit and Union Pacific (UP) rail lines divide the Swanston TVSP project area into two distinct subareas. The area to the east contains several large office and commercial buildings (USAA Insurance, Hilton Hotel, Extended Stay America, and California Plaza office building), as well as single family residences. The west side of the Swanston TVSP project area contains relatively low density single-story residential,



Source: Microsoft Streets and Trip, 2006.

FIGURE **2-1**

Project Area and Regional Context



***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **2-2**
Plan Area

multi-family residential, commercial/industrial buildings, and vacant parcels. Portions of the Swanston TVSP project area are within the Dixieanne neighborhood, the South Hagginwood neighborhood, the Ben Ali neighborhood, the Erickson Industrial Park, and the North Sacramento Redevelopment Project Area that was adopted by Sacramento Housing Redevelopment Agency in 1992. Additional information on existing land uses is presented in Chapter 4, Land Use Consistency and Compatibility.

Existing General Plan Land Use Designations and Zoning

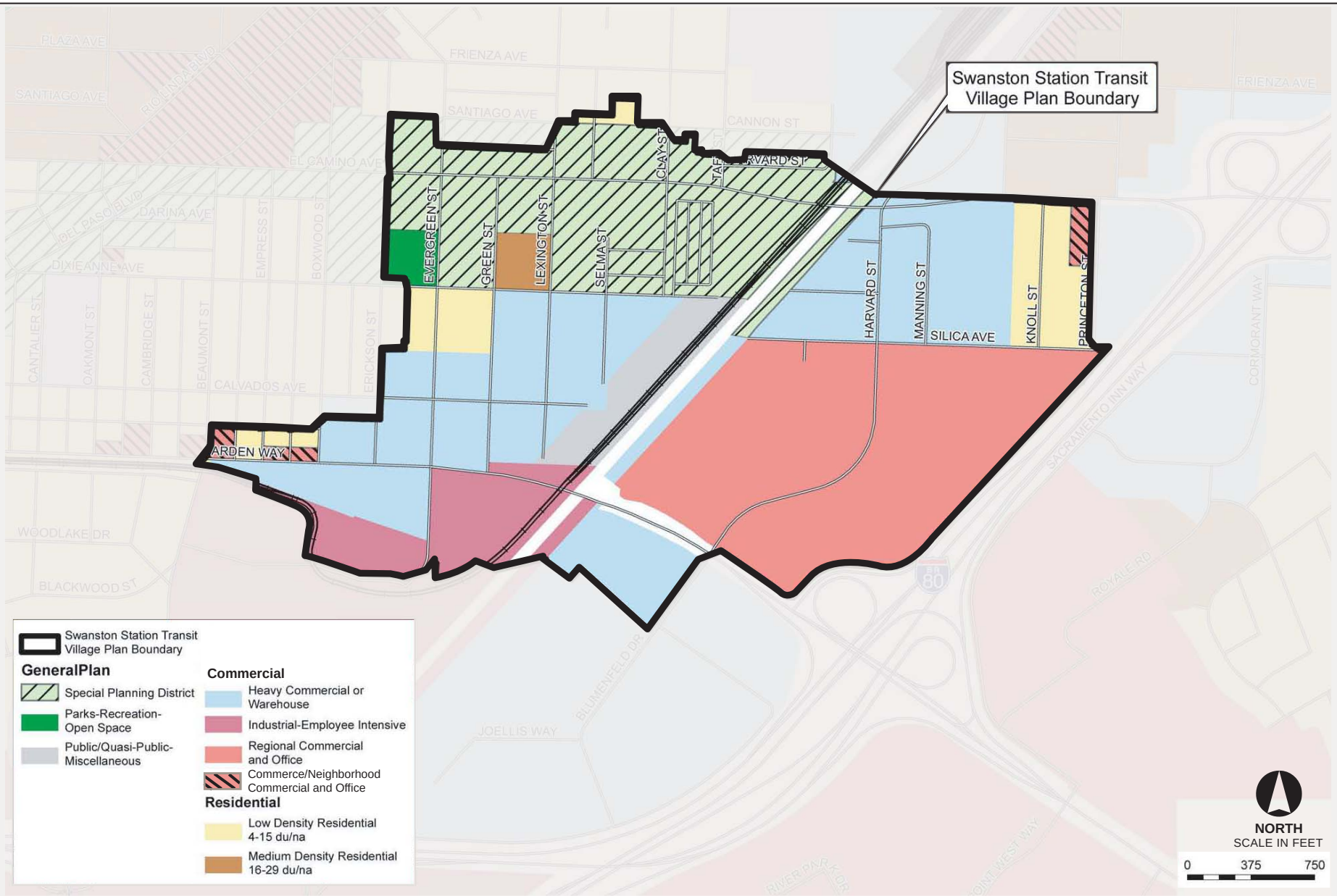
As illustrated in Figure 2-3, the City of Sacramento's General Plan land use designations for the Swanston TVSP project area are Commerce/Neighborhood Commercial and Office, Regional Commercial and Office, Heavy Commercial/Warehouse, Industrial-Employee Intensive, Low Density Residential, Medium Density Residential, Parks-Recreation-Open Space, Special Planning District, and Public/ Quasi-Public-Miscellaneous. As shown in Figure 2-4, the project area is currently zoned for commercial, office, industrial, residential, and open space uses.

While the above lists of land use designations and zoning districts suggest a diverse land use mix within the Swanston TVSP project area, Figures 2-3 and 2-4 show the area to be planned and zoned predominantly for heavy commercial and manufacturing type uses, with general commercial uses primarily along El Camino Avenue; and residential areas concentrated in the western portion of the project area along Dixieanne Avenue and in the eastern portion between El Camino Avenue and Silica Avenue.

2.3 PROJECT OBJECTIVES

The goal of the Swanston Station Specific Plan is to guide future transit oriented development within the project area and identify the needed infrastructure improvements and implementation measures to realize the vision of the plan. The goals and desired outcomes of this project are:

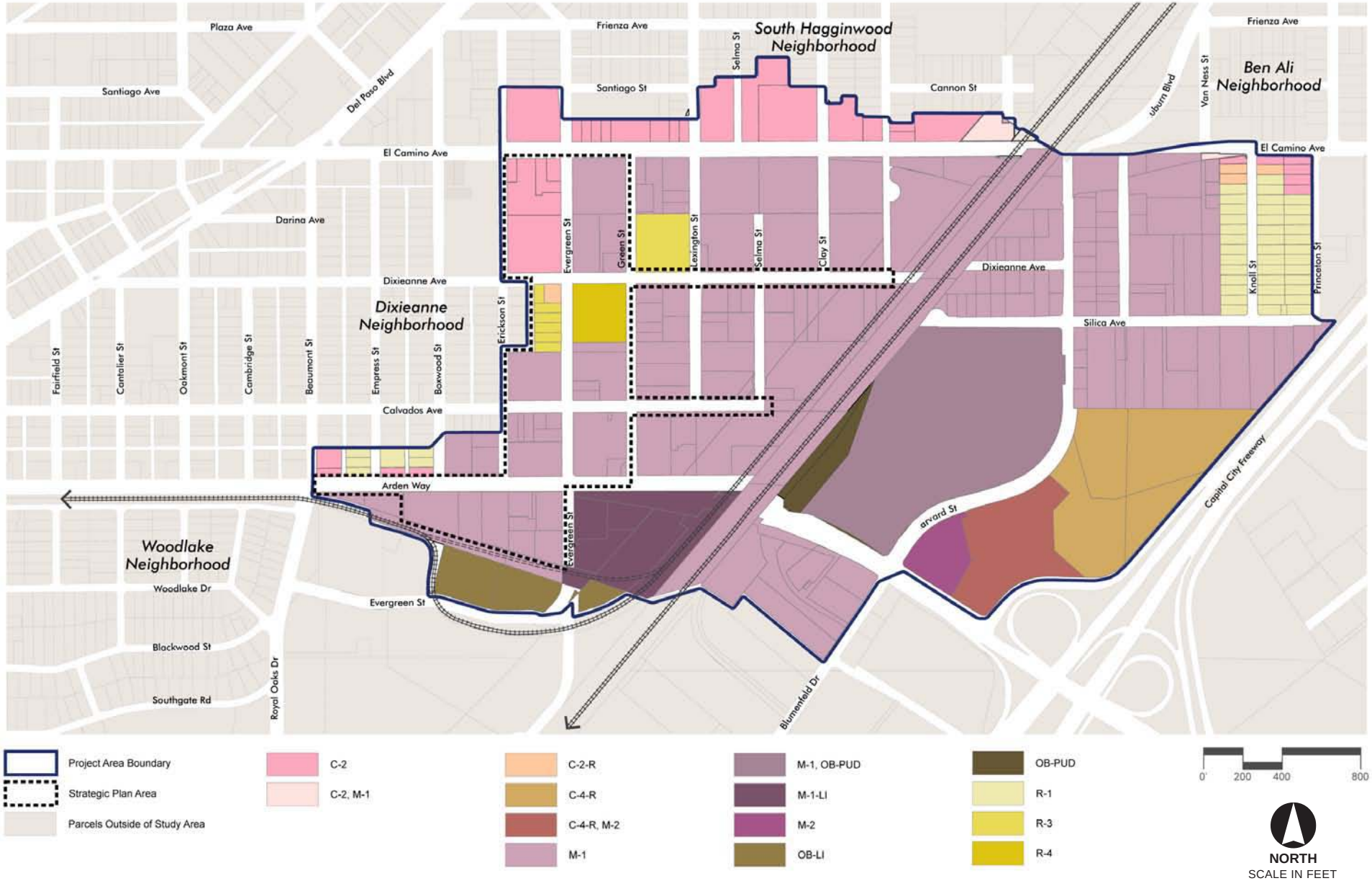
- Create transit-oriented, pedestrian-friendly, mixed-use and residential development adjacent to the Sacramento Regional Transit light rail line and Swanston and Royal Oaks light rail stations;
- Guide future development and revitalization within the area towards land uses that support transit ridership, and provide needed housing, employment opportunities, and neighborhood supporting retail uses;
- Develop recommendations and guidelines for design and development of land use and infrastructure development within the Swanston Station Transit Village Specific Plan area;
- Incorporate meaningful community input into every stage of the process by exchanging, sharing ideas and collaborating with interested groups, property owners, individuals, and other agencies active in the Swanston area;
- Identify the infrastructure needs, cost estimates, phasing, and implementation programs to realize the vision of the Swanston Station Transit Village Specific Plan;



***Source*:** City of Sacramento, 2007.

FIGURE **2-3**

Existing General Plan Land Use Designations



***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **2-4**
Existing Zoning

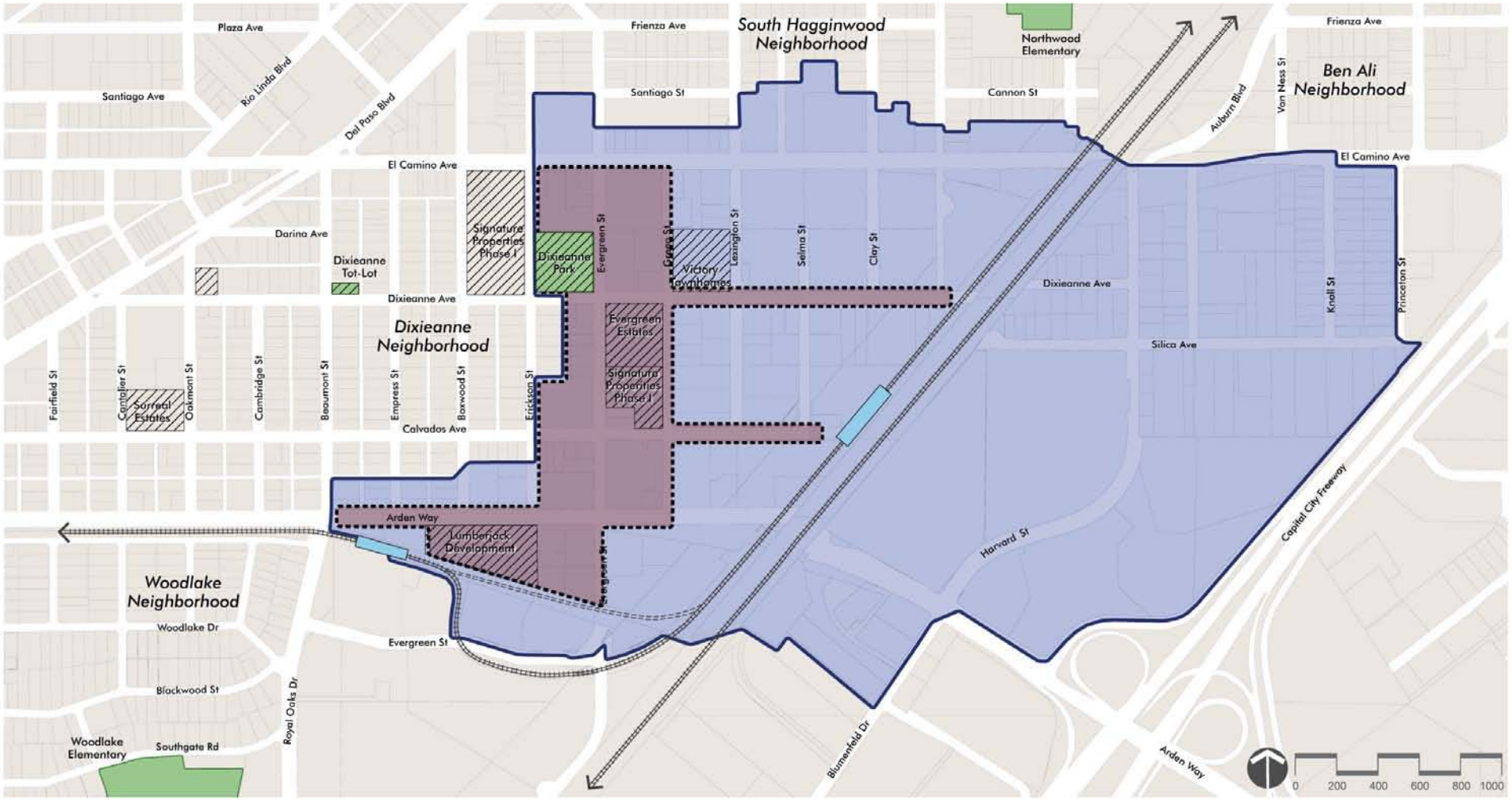
- Provide transit and neighborhood and community retail near residential development to shorten or reduce the number of vehicle trips;
- Improve the pedestrian, bicycle, and automobile circulation and access of the Swanston Light Rail Station Area and vicinity;
- Incorporate urban parks, plazas and open space into the project design in a manner that provides community connectivity;
- Develop and approve the Swanston Station Transit Village Specific Plan consistent with the City of Sacramento's Smart Growth Principles, the Regional Transit Master Plan, the Transit for Livable Communities Recommendations, the SACOG Blueprint Study, the North Sacramento Redevelopment Plan, and the goals of the North Sacramento 2005-2009 Redevelopment Implementation Plan;
- Increase office and retail job opportunities in the City and the residential component that accompanies such jobs;
- Create a safe and comfortable transit village, defined by a mix of uses, responsive to current market conditions, and a bicycle and pedestrian friendly environment;
- In keeping with the City and the Sacramento region's goals to promote public transit ridership, provide higher-density infill residential development, small neighborhood-serving retail, small- to medium-scale professional office uses, and public open space – all within convenient walking distances of the light rail station;
- Enhance the City's supply of housing that provides a range of housing opportunities available to residents from a wide range of economic levels; and
- Bolster/support private investment through investment in public realm.

2.4 PROJECT CHARACTERISTICS

Development in the Swanston TVSP Project Area

Given the large area under consideration, the constraints on public and private resources, and the outdated/deficient utilities infrastructure, buildout of the proposed Swanston TVSP project is anticipated to occur past year 2030. Public and private investment in the Swanston TVSP project area is targeted to build off the momentum of recent new and planned development projects, create visible change in the area, and realistically respond to market conditions.

Accordingly, the Swanston TVSP project area is divided into two development areas: the Strategic Plan area and the Long-Term Plan area (see Figure 2-5). As indicated in Table 2-1, development within the Strategic Plan area could include approximately 366 dwelling units and 70,000 gross square



***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **2-5**

Strategic and Long-Term Plan Areas

Table 2-1
Swanston Station Transit Village Specific Plan Development Areas

	Residential (dwelling units)	Commercial (sf)
Strategic Plan Area	366	70,000
Long-Term Plan Area	2,230	435,515
Total	**2,596**	**505,515**

Source: MIG, 2007.

feet (sf) of commercial floor space within an approximately 23-acre portion of the Swanston TVSP project area.

The amount of new development projected for the Strategic Plan area is based on a market analysis prepared as part of the Specific Plan,[1] and is expected to occur by approximately 2025.

The Long-Term Plan area includes approximately 213 acres of the Swanston TVSP project area (see Figure 2-5). As shown in Table 2-1, new development within the Long-Term Plan area could include approximately 2,230 new dwelling units and 435,515 sf of new commercial floor space. Development within the Long-Term Plan area would occur based on future, as-of-now, speculative market conditions. The estimate for development within the Long-Term Plan area is based on the land use development potential as reflected by the proposed zoning and would be in addition to the development assumed in the Strategic Plan area. Overall, as indicated in Table 2-1, development of the proposed Swanston TVSP project would result in approximately 2,596 new dwelling units and 505,515 sf of new commercial space. See discussion of Growth Assumptions/Development Trends below for more detail.

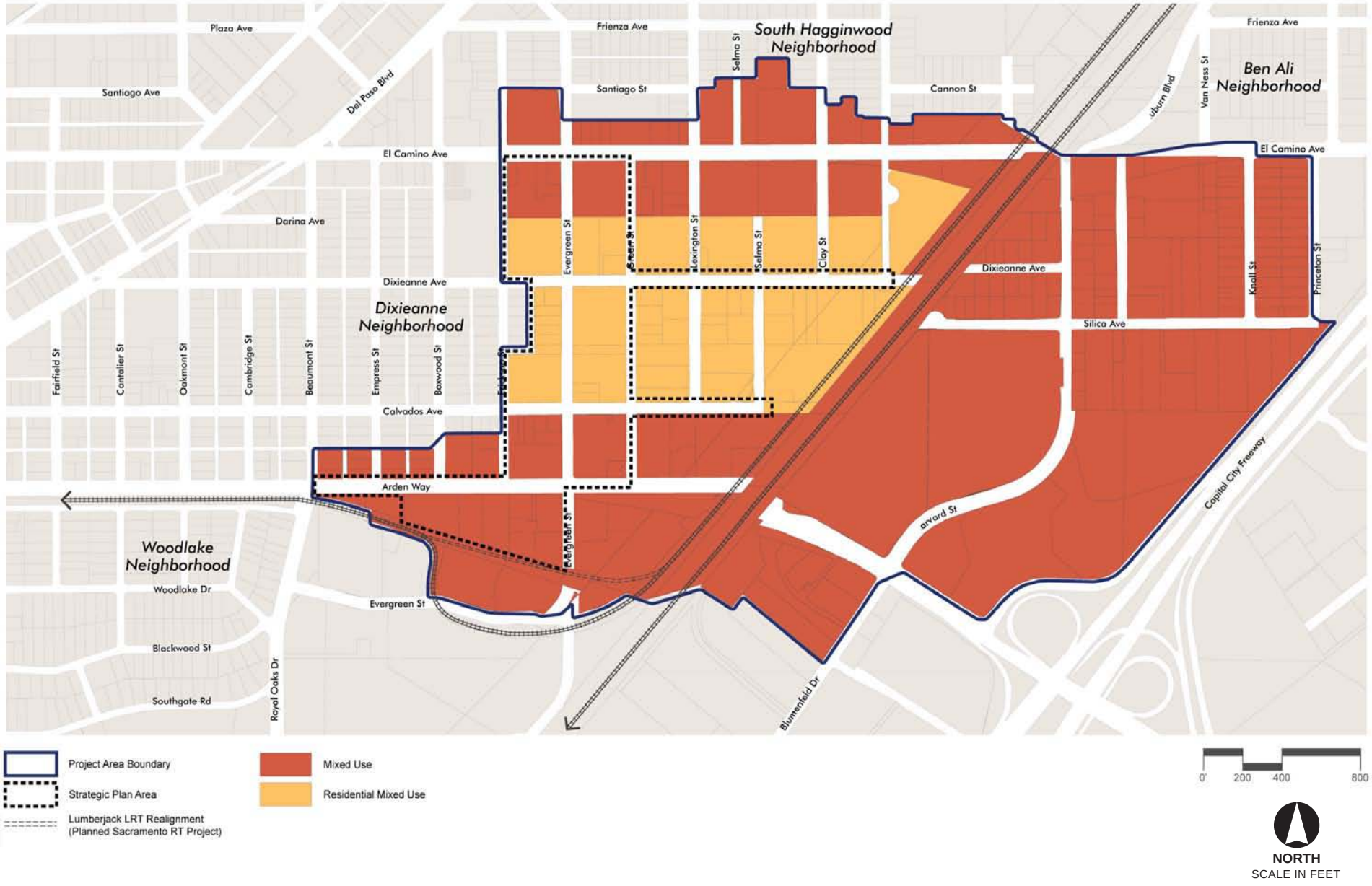
Proposed Land Use Designations and Zoning

The Swanston Station Specific Plan re-designates the land uses for all parcels and rezones about 71 percent of the project area's parcels to provide the regulatory infrastructure to support mixed-use transit-oriented development around the Swanston Light Rail Station. In order to achieve the proposed objectives, the proposed Swanston TVSP project would change existing land use designations in the Swanston TVSP project area (shown in Figure 2-3). The existing eight land use designations would be amended to either of the two following existing General Plan land use designations (see Figure 2-6):

- the Mixed Use land use designation promotes a mixture of office, commercial, open space, and medium and high-density residential uses; and
- the Residential Mixed Use land use designation supports a mixture of residential densities, as well as commercial and/or office use.

Both of these land use designations mandate a minimum average of 22 dwelling units per acre (du/ac) within ¼ mile of the light rail station.

[1] Bay Area Economics, Swanston Transit Village Market Analysis, March 2006.



***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **2-6**

Proposed General Plan Land Use Designations

The Swanston TVSP project area currently includes 14 different zoning designations, as shown in Figure 2-4. The Swanston TVSP project area encompasses an estimated 319 parcels, most of which are zoned either R-1, C-2, or M-1. The Swanston Station Specific Plan would rezone about 71 percent of the parcels in the Swanston TVSP project area to either of two districts: C-2 or RMX, both with Transit Overlay (TO) Zone (see Figure 2-7). Parcels zoned R-1 would generally be rezoned to C-2-TO; parcels zoned C-2 would generally be rezoned to C-2-TO, and parcels zoned M-1 would generally be rezoned to C-2-TO or RMX-TO. The parcels that retain their current zoning are in locations where the use is unlikely to change or are already developed with a use that appears economically viable and would not likely be subject to change.

C-2 is a general commercial zone that provides for the sale of commodities, or performance of services, including repair facilities, offices, small wholesale stores or distributors, and limited processing and packaging. RMX is a mixed-use zone that permits multi-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 36 du/ac.

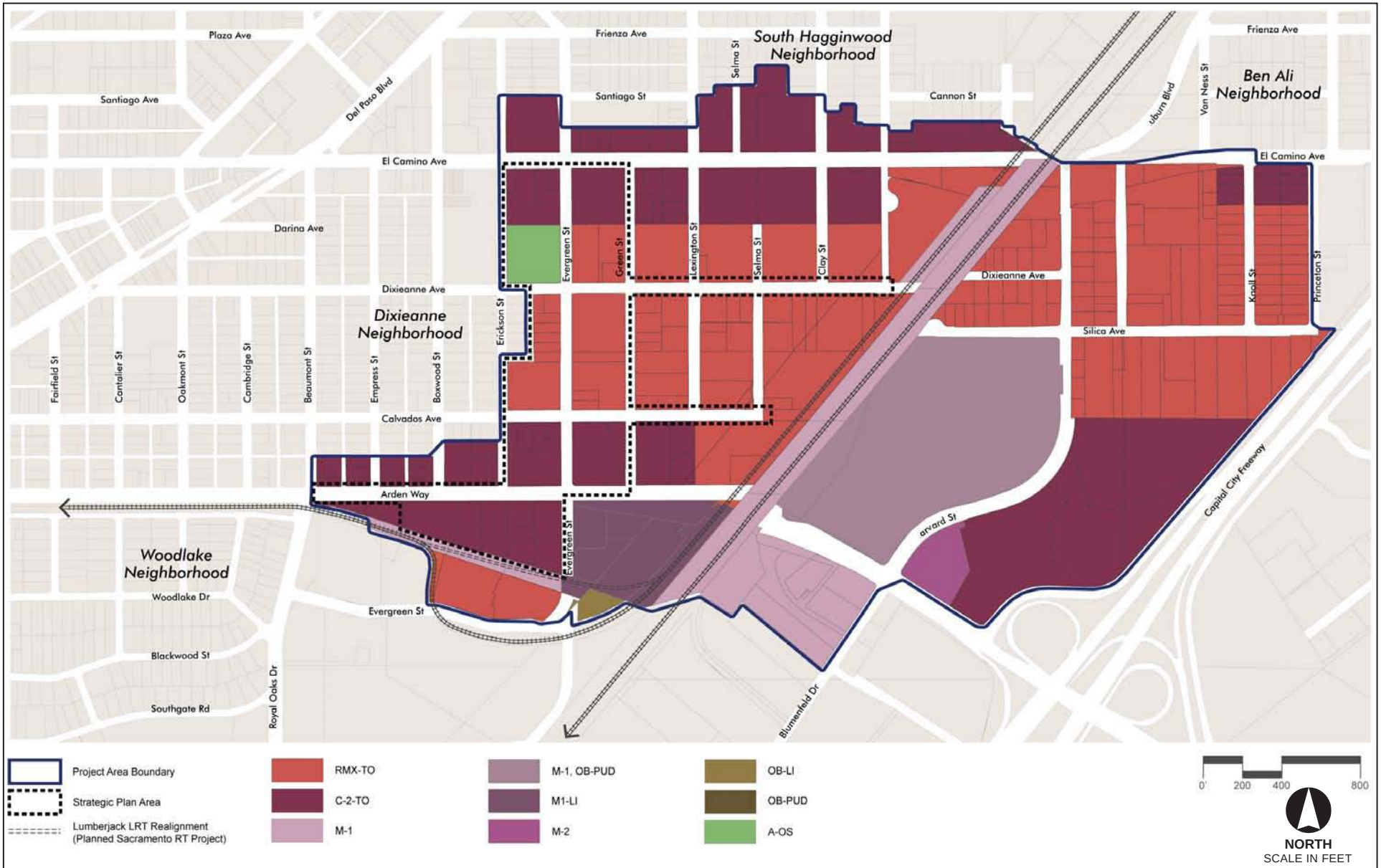
In the Swanston TVSP project area, both the C-2 and RMX zones would be overlaid with the City's transit overlay (TO) zone. The C-2-TO and RMX-TO zones both allow residential development density between 15 to 60 du/ac. The TO overlay allows a mix of moderate to high density residential and nonresidential uses to promote transit ridership within walking distance of an existing or proposed light rail transit station. (The project area encompasses the Swanston Light Rail Station and is adjacent to the Royal Oaks Light Rail Station.) The district is intended to promote coordinated and cohesive site planning and design that maximizes land use transit supportive development, to create continuity of pedestrian-oriented streetscapes and activities throughout the district and to encourage pedestrian, bicycle and transit rather than exclusive automobile access to employment, services and residences. The district also restricts certain uses that do not support transit ridership, such as outdoor amusement and entertainment uses, auto sales and service uses, and light industrial uses.

Notably, the Swanston Station Specific Plan does not require any property owner to modify or alter their properties or existing development. The new land use designations and zoning districts are intended to guide future development. Accordingly, as new investment occurs in the Swanston TVSP project area and/or as property owners seek to revitalize and develop, these properties would be subject to the proposed zoning districts.

Circulation

The existing circulation network within the Swanston TVSP project area was generally constructed to accommodate buildout of the existing General Plan. The change to existing land use designations proposed by the Swanston Station Specific Plan would result in fewer daily automobile trips generated in the area than the current land use designations.[2] Accordingly, current roadway capacity is expected

[2] Kimley-Horn Associates, Swanston Station Transit Village Infrastructure Evaluation, Final, October 26, 2007, page 18.



***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **2-7**

Proposed Zoning

to be adequate to accommodate expected future vehicle trips. Thus, the emphasis of the circulation element of the Swanston Station Specific Plan is on improving the existing network, rather than expanding capacity.

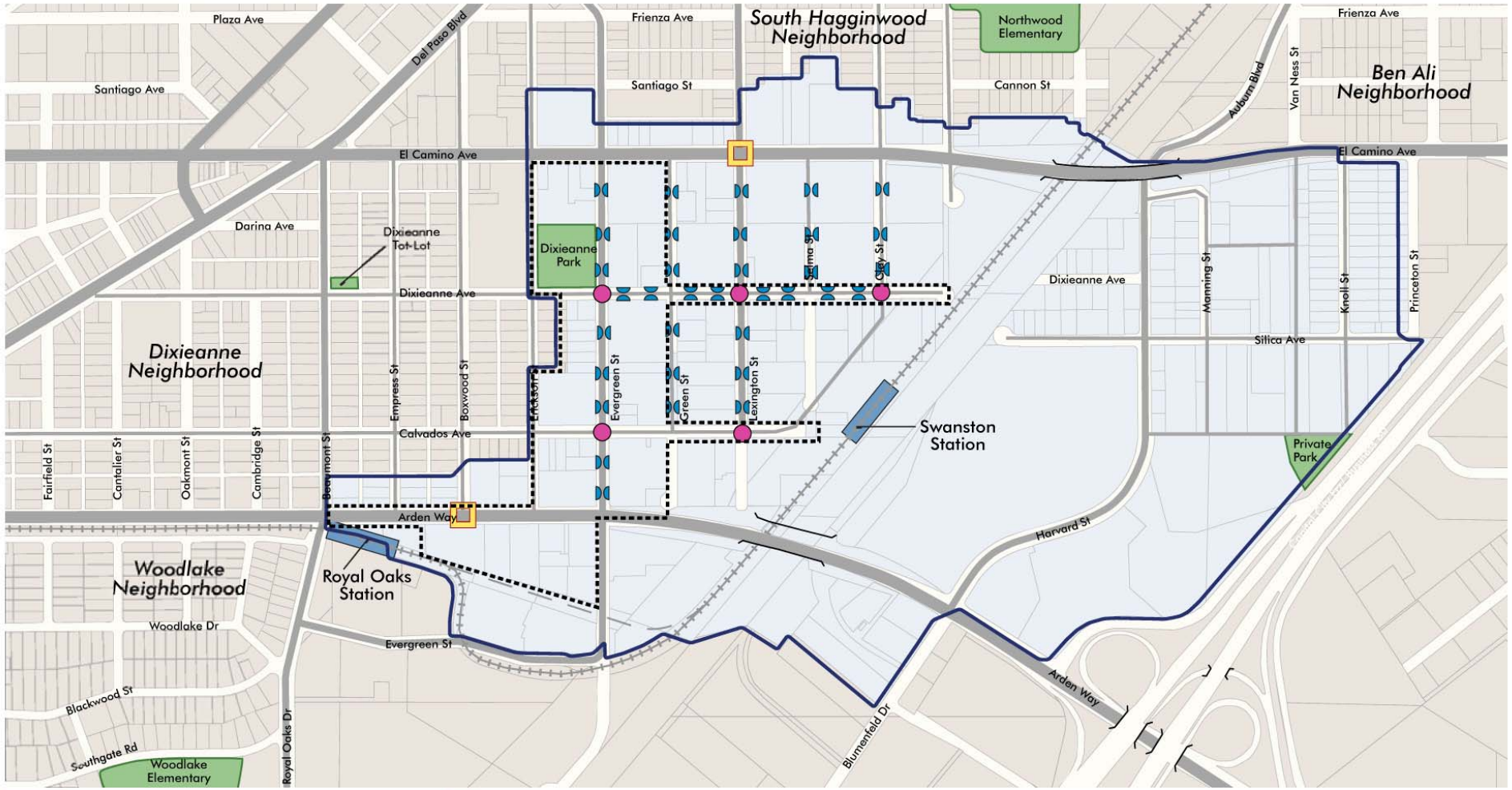
A number of roadways in the Swanston TVSP project area do not include complete frontage improvements (curbs, gutters, sidewalks, and/or street lights). In addition, a number of area streets were built to an outdated City standard. The plan calls for several key streets to be reconstructed to conform to the City's Pedestrian Friendly Street Standards. Also, as buildout of the area occurs, traffic signals and traffic calming devices to discourage speeding on local residential streets would be installed, as needed. Additional details regarding the circulation proposals of the Swanston Station Specific Plan are provided below.

Street Classification System

The Swanston Station Specific Plan identifies roadway improvements throughout the project area (see Figure 2-8). The proposed circulation system consists of three roadway types, arterial streets, collector streets, and local streets, which are defined below.

Arterial Streets. Four-lane arterial streets typically serve daily traffic volumes between 14,000 and 27,000 vehicles per day, provide regional connectivity, and generally provide limited access to adjacent land uses. Two streets in the Swanston TVSP project area, El Camino Avenue and Arden Way, are classified as arterial streets. El Camino Avenue (four-lane with two-way left-turn lane) and Arden Way both currently have rights-of-way of 80 feet. They serve as major vehicular corridors in North Sacramento, as well as significant streets within the Swanston TVSP project area. Arden Way serves as the primary auto-oriented street linking the Swanston TVSP project area with North Sacramento destinations, such as Arden Fair Mall, SR 160, and other light rail stations. El Camino Avenue is also more auto-oriented in nature but provides dedicated Class II bicycle lanes and new streetscape improvements.

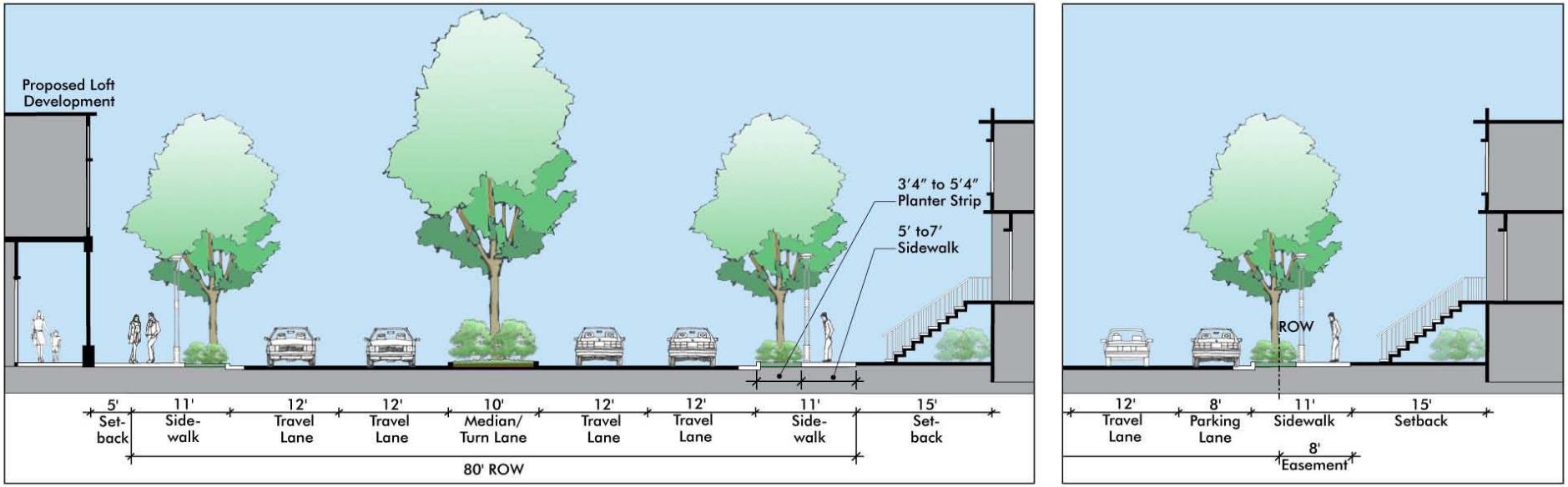
The proposed Swanston TVSP project would improve pedestrian and bicycle-friendly access to and from the Swanston and Royal Oaks light rail stations. However, due to the constrained rights-of-way along the 80-foot-wide arterial Arden Way, it is not possible to provide on-street bike lanes or pedestrian-friendly separated sidewalks within the existing right-of-way without requiring an easement from the adjacent properties. Therefore, the proposed Swanston TVSP project would omit parking in favor of separated sidewalks along Arden Way. Where possible, parking would be accommodated with an eight-foot easement on either side of the street (see Figure 2-9). Similarly, the proposed Swanston TVSP project would enhance El Camino Avenue by including a 15-foot wide easement on either side of the street to accommodate dedicated bike lanes, parking, and separated sidewalks. Further, the proposed Swanston TVSP project would construct a median and center turn lane on El Camino Avenue to improve traffic operations for vehicles entering and exiting the roadway (see Figure 2-10).



***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **2-8**

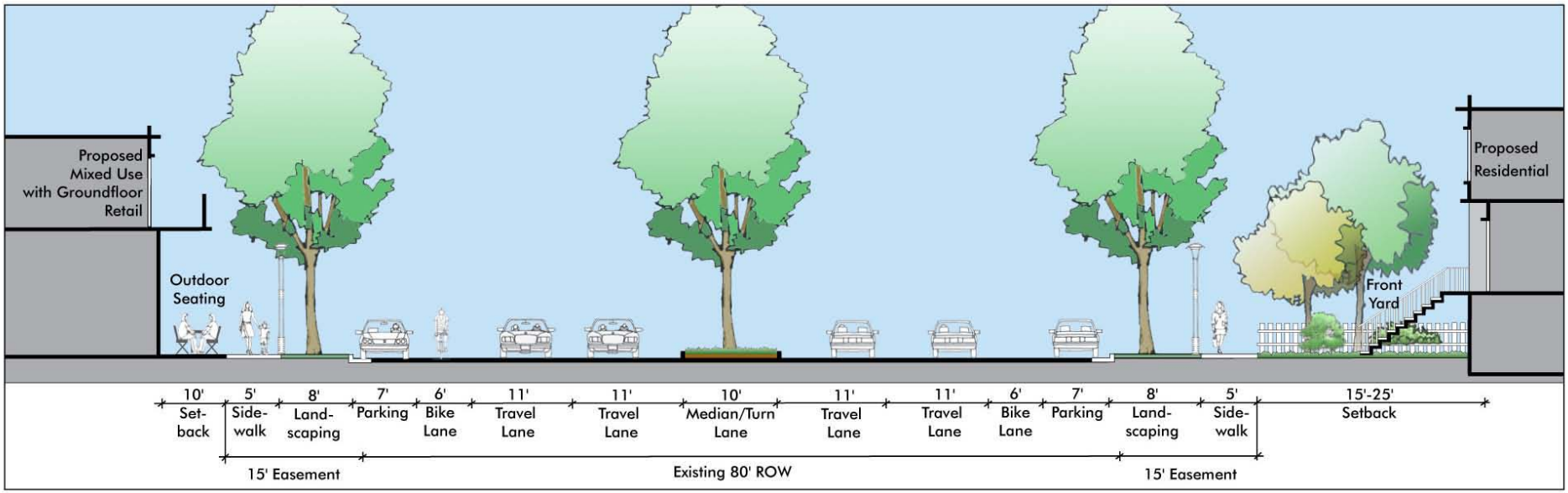
Proposed Roadway Improvements



***Source*:** Swanston Station Transit Village Specific Plan, December 2007.

FIGURE **2-9**

Arden Way Cross-Section



***Source*:** Swanston Station Transit Village Specific Plan, December 2007.

FIGURE **2-10**

El Camino Avenue Cross-Section

Collector Streets. Collector streets range in volume from 4,000 vehicles per day to 14,000 vehicles per day and provide greater connectivity than local and residential streets. There are two roads that currently function as collectors within the Swanston TVSP project area: Evergreen Street and Harvard Street. Evergreen Street is the only direct north-south connection through the Swanston TVSP project area, linking Arden Way and El Camino Avenue with residential and mixed use developments and Dixieanne Park. Evergreen Street has curbs, gutters, and sidewalks in some locations. South of Silica Street, Harvard Street has full frontage improvements, one travel lane in each direction, bike lanes, and no parking. The proposed Swanston TVSP project would improve Evergreen Street by constructing full frontage improvements in those areas without curbs, gutters, and sidewalks.

Local Streets. A majority of the roadways within the Swanston TVSP project area are classified as local streets. These streets provide direct access to parcels in the Swanston TVSP project area and generally serve less than 4,000 ADT. Local streets provide limited connectivity but direct access to adjacent land uses. Examples of local streets in the Swanston TVSP project area include Dixieanne Avenue, Knoll Street, and Lexington Street.

Traffic Calming

Due to the street pattern in the Swanston TVSP project area, the Swanston Station Specific Plan would incorporate traffic calming devices to ensure vehicle speeds are kept at safe levels. Traffic calming devices are recommended on the north-south streets from Evergreen Street to Clay Street and along Dixieanne Avenue. The traffic calming devices, shown in Figure 2-8, were developed based on projected traffic volumes in the Swanston TVSP project area and vicinity. Traffic calming devices being proposed for the Swanston TVSP project area include traffic circles, bulb-outs/pedestrian islands, and signals.

Traffic Circles. Traffic circles are proposed along Dixieanne and Calvados Avenues at intersections with north-south streets. These devices would promote lower speeds and traffic volumes and deter through traffic.

Bulb-Outs and Pedestrian Islands. Bulb-outs and pedestrian islands are proposed at locations of mid-block pedestrian crossings to promote lower vehicle speeds and to enhance pedestrian circulation and overall safety. These supplemental traffic calming devices are proposed for Evergreen Street and several local residential streets west of the tracks.

Signals. Traffic signals will likely be warranted to discourage speeding on local residential streets once development and traffic volumes reach a certain level. The installation of signalized traffic control is anticipated at the intersection of El Camino Avenue and Lexington Street, also at Arden Way and Boxwood Street.

Transit Services

Transit service in the Swanston TVSP project area is provided at two light rail stations and several bus stops. According to Sacramento Regional Transit District, which operates rail and bus transit services in Sacramento, Swanston Station has an average of 137 boardings per day. The Royal Oaks Light Rail Station is immediately outside the southwest corner of the Swanston TVSP project area and offers riders in the vicinity another option for traveling from North Sacramento to downtown Sacramento. Bus routes 20, 23, and 25 travel along Arden Way through the Swanston TVSP project area.

The Swanston Station Specific Plan acknowledges a proposed intermodal transit center south of the existing Swanston Station. The new transit center would be designed and built by Sacramento Regional Transit District and would replace the existing congested transfer point at the Arden/Del Paso Light Rail Station. Figure 2-11 shows the planned transit center and the proposed bus routes that would serve the facility. Buses would enter the transfer station from the south, via a new access road. The access road would extend east from the south end of Evergreen Street and turn parallel to the existing light rail tracks before entering the transit center. The intermodal transit center and the proposed access route are facilities that would be planned, constructed, and operated by Sacramento Regional Transit District and are independent of the proposed Swanston TVSP project.

Two additional transportation improvements are proposed by other agencies to serve the Swanston Light Rail Station area. These improvements, proposed by the Point West Transit Management Agency and Amtrak, are independent of the proposed Swanston TVSP project but would help further the project objective to improve transit opportunities in the Swanston Station area. The Point West Transit Management Agency proposes the creation of a streetcar system that would serve the Swanston Station area, Cal Expo, and Arden Fair Mall. Amtrak, which provides inter- and intra-regional rail service in the area, has been exploring the potential for adding a stop at Swanston Station to its Capitol Corridor service, which currently operates along the Union Pacific (UP) rail line that bisects the Swanston TVSP project area. The Point West Shuttle and the Capitol Corridor Swanston Station are facilities that would be planned, constructed, and operated by other agencies and, like the new transit center, are independent of the proposed Swanston TVSP project.

Pedestrian and Bicycle Circulation

The Swanston TVSP project area has minimal on-street bicycle lanes and poor pedestrian facilities. On-street bike lanes are currently provided along El Camino Avenue from the intersection of Del Paso Boulevard east towards Arden Fair Mall and on Harvard Street. The City's Pedestrian Friendly Street Standards require that on-street bike lanes be provided on all collector and arterial roadways. Further, the City's Bicycle Master Plan proposes bicycle lanes along Dixieanne Avenue, Lexington Street, and Beaumont Street. The Swanston Station Specific Plan recommends street and sidewalk improvements consistent with the City's Pedestrian Friendly Street Standards and Bike Master Plan.

In addition, neither of the existing pedestrian crossings of the UP/light rail tracks at El Camino Avenue or Arden Way provides safe and convenient access for pedestrians and bicyclists between the employment center to the east and the light rail station to the west of the tracks. As a result, the City

***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **2-11**

Proposed Transit Improvements by Others

and the Sacramento Regional Transit District have discussed construction of a pedestrian and bicycle bridge across the tracks. Two potential locations are acknowledged in the Swanston Station Specific Plan. One alternative would link the Swanston Light Rail Station on the west with the USAA property to the east (see Figure 2-12). A second location for the proposed pedestrian and bicycle bridge across the UP tracks would be north of the Swanston Light Rail Station and connect Dixieanne Avenue on the west side of the UP tracks with Silica Avenue on the east side of the UP tracks (see Figure 2-12). Although acknowledged by the Swanston Station Specific Plan as potential facilities to improve pedestrian and bicycle circulation in the project area, these facilities are not proposed as part of the proposed Swanston TVSP project.

The proposed bicycle and pedestrian circulation improvements in the Swanston TVSP project area, as shown in Figure 2-12, further support connectivity and access to and around the station and encourage alternative means of transportation. Bike routes are proposed along El Camino Avenue, Dixieanne Avenue, a portion of Calvados Avenue, Beaumont Street, Lexington Street, and portions of Silica Avenue and Harvard Street.

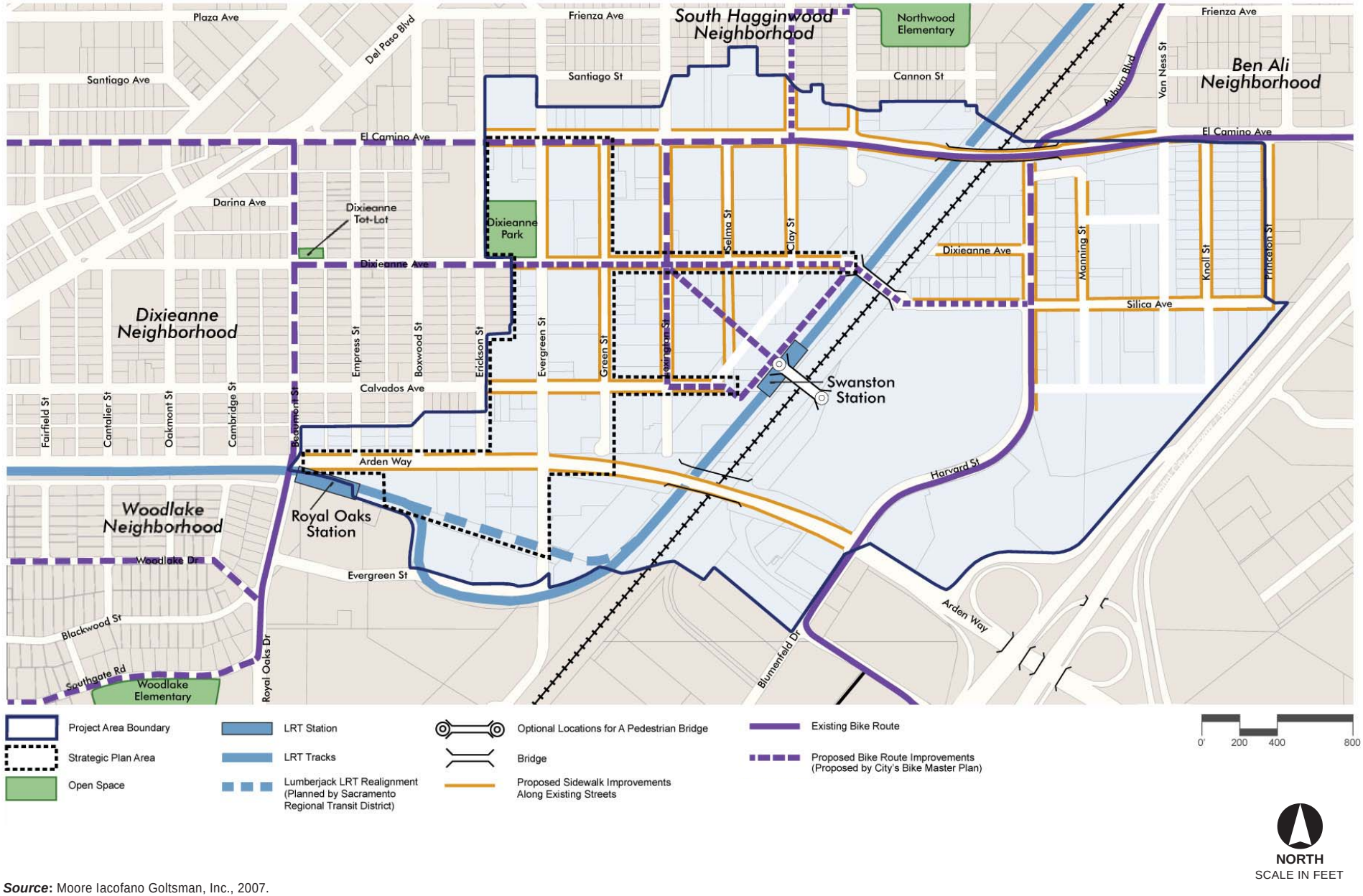
The proposed Swanston Station Specific Plan would also include improvements along roadways and sidewalks to comply with the Americans with Disabilities Act (ADA) and the City's Pedestrian Friendly Street Standards (shown in Figure 2-12).

Open Space and Public Amenities

Open space improvements and public amenities provided by the Swanston Station Specific Plan would center on increasing recreational opportunities, enhancing the pedestrian environment, and improving connectivity within the Swanston TVSP project area (see Figure 2-13). The public open spaces in the Swanston TVSP project area are made up of parks, plazas, and connectors that run along roads and between developments. Elements of the open space network are described below.

Neighborhood Parks. Neighborhood parks would serve as anchors for active and passive recreational opportunities throughout the Swanston TVSP project area. At an average of 2.5 acres each, the proposed neighborhood parks would be the largest classification of open space in the Swanston TVSP project area. Neighborhood parks would offer a variety of programmed space, including open fields, children's play areas, ball fields, basketball and tennis courts, as well as seating, tables, water fountains, and shade structures. The proposed Swanston Station Specific Plan could include a total of 10 acres of new neighborhood parks, consisting of two new parks on each side of the rail lines. The proposed Swanston TVSP project envisions the existing Dixieanne Park as the central neighborhood park west of the tracks.

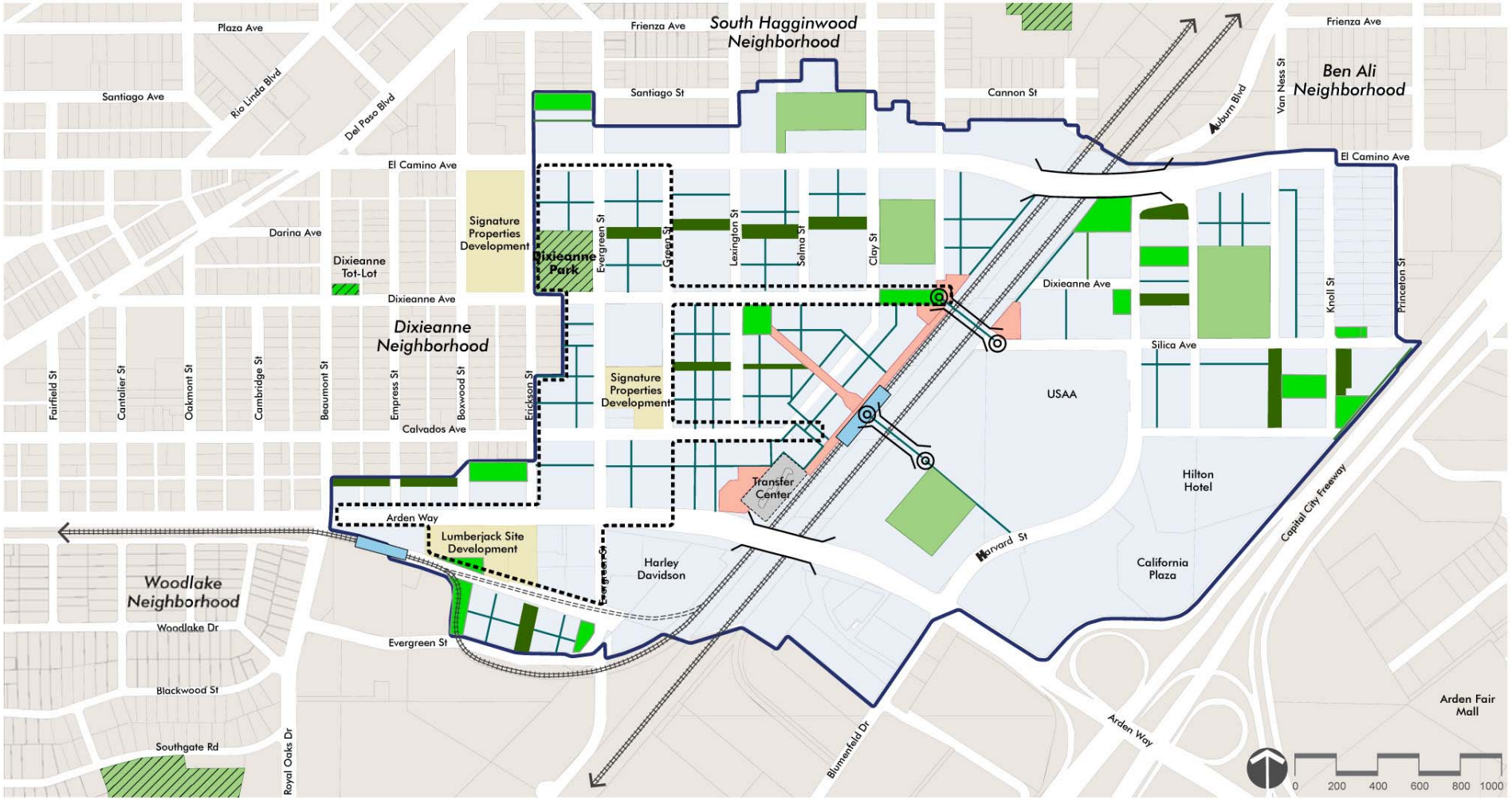
Pocket Parks. Pocket parks would play a supporting role in the proposed Swanston TVSP project's framework of green spaces. Each of the pocket parks would typically occupy a portion of a block and encompass approximately 0.4 acres of open space. Pocket parks would include small open space amenities such as seating areas, gathering areas, multi-use play areas, children's play areas, tot lots, gardens, and picnic areas to offer a respite from the built environment. The proposed Swanston Station



***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **2-12**

Proposed Pedestrian and Bicycle System Improvements



***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **2-13**

Proposed Open Space

Specific Plan could develop a total of eight pocket parks integrated throughout the Swanston TVSP project area for a total of 3.2 acres.

Plazas and Promenades. The proposed Swanston Station Specific Plan could include plazas and promenades to strengthen bicycle and pedestrian connections with the Swanston Station. These open spaces are shown in Figure 2-13 and involve use of textured paving materials, shade shelters, and trees to enhance the transit experience. The Swanston TVSP project area could have approximately 0.25 acres of plazas and promenades.

Mews and Greenways. The proposed Swanston TVSP project would include mews and greenways to break up the large city blocks that are prevalent in the Swanston TVSP project area, and provide buffer space between existing and new development. Greenways are proposed to serve as pedestrian and bicycle connections and can be designed to include swales that serve ecological and stormwater functions. Greenways are envisioned as minor community gathering spaces, characterized by small eating areas, children's play areas, and barbeque areas. Mews are narrow, linear hardscaped pathways between developments that would provide additional pedestrian and bicycle access throughout the transit village. The proposed Swanston TVSP project identifies multiple greenways totaling more than five acres of open space. Mews and greenways could be woven throughout the fabric of the Swanston TVSP project area.

Infrastructure

The utilities within the Swanston TVSP project area are in need of varying degrees of improvement. Infrastructure improvements in this area generally result from the need to upgrade existing facilities to current City standards and to maintain the rest of the systems. The proposed alignment of new underground utilities was developed to avoid conflict with existing underground utilities and surface features, such as railroad tracks. Short-term improvements would include upgrades that would be made before 2025; long-term improvements include enhancements that would be made before the Swanston Station Specific Plan would be built out.

As part of the project, a pro forma analysis was prepared and the current and anticipated infrastructure needs for the proposed Swanston Station project were determined.[3] Improvements are needed in the Swanston TVSP project area to the stormwater drainage, water supply, and sewage systems to solve existing deficiencies and problems. The water supply system is adequately handling current uses, except for fire protection. The stormwater system has significant deficiencies, including damaged culverts, insufficient pipe capacity, and cluttered roadside ditches. Some pipes in the sewage system are less than City standards. Additional problems with the system include infiltration/ inflow, illegal taps, and a lack of facilities in undeveloped areas. In the Strategic Plan area, improvements are needed to the three systems to serve new development. Improvements to the sewer and water systems are needed to serve new development in the Long-Term Plan area.

[3] City of Sacramento, *Swanston Station Transit Village Specific Plan*, Volume 3, December 2007, Bay Area Economics, *Pro-Forma Analysis*.

The Swanston Station Specific Plan includes a funding strategy and prioritizations to address public infrastructure improvements. Under this strategy, the City would build the infrastructure plans around a "pay-as-you-go" approach for improvements necessary to support new development. However, the Swanston Station Specific Plan acknowledges that there are some larger-scale improvements that are better suited for implementation as part of the City's Capital Improvement Program, as described below.

Water System

The existing water distribution system adequately serves the current uses within the Swanston TVSP project area, although improvements are necessary to improve fire protection. The current City standard for the proposed zoning districts under the Swanston Station Specific Plan is a minimum of 8-inch diameter mains in the distribution system, with 12-inch mains spaced in grid intervals of one-half mile. Many mains are currently undersized and do not meet the following City standards for adequate fire protection.

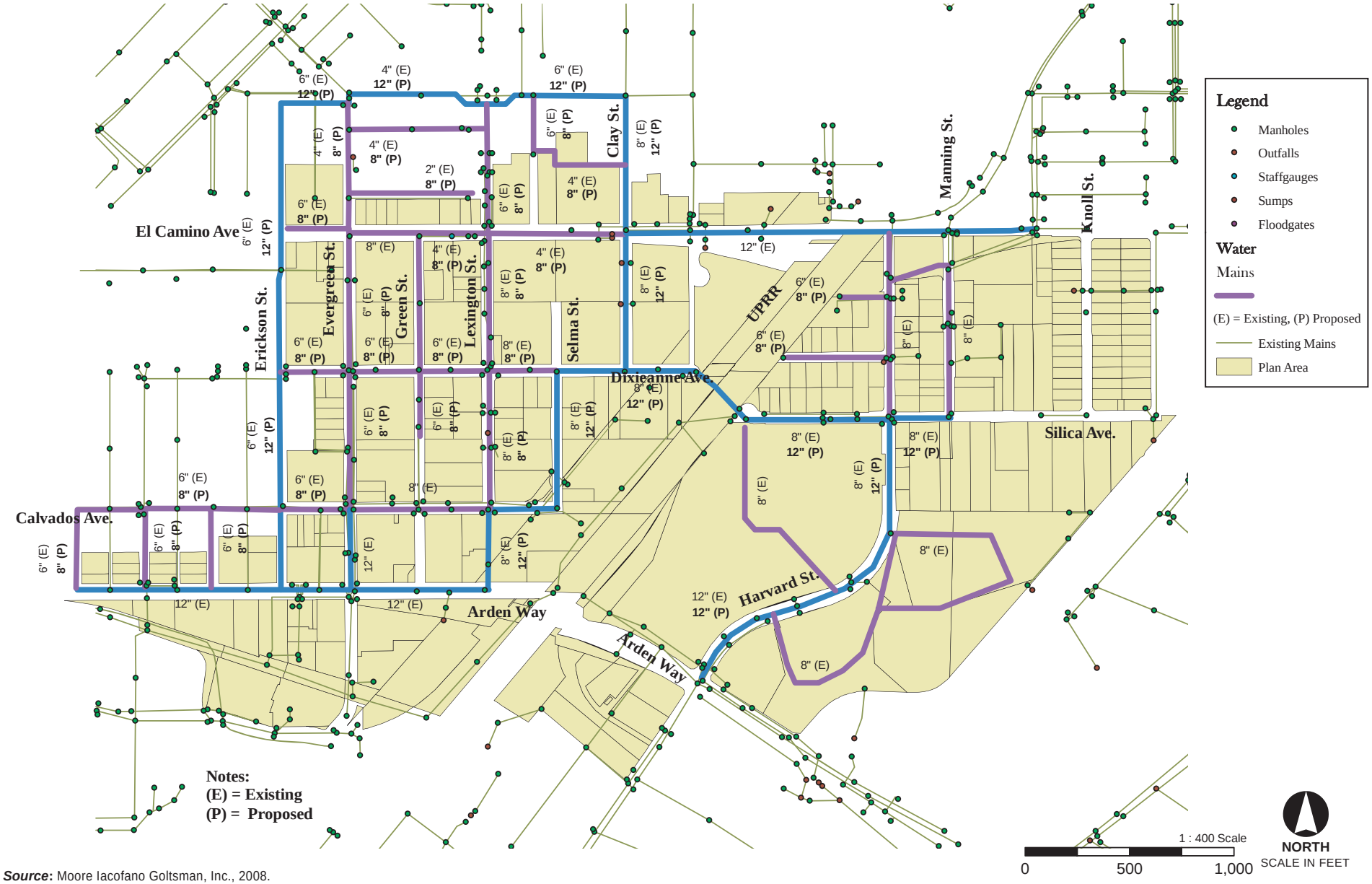
Water supply to the Swanston TVSP project area is provided by the E.A. Fairbairn water treatment plant, one of the major water supplies for the City. Recent upgrades to the plant substantially increased the treatment capacity at the plant.

The proposed water system improvements throughout the Swanston TVSP project area, for the short and long-term buildout, are described below (see Figure 2-14).

Strategic Plan Area. Development in the Strategic Plan area requires upsizing the existing mains that are smaller than the City standard of 8-inch diameter desired for fire flow protection. Water demand calculations were performed as part of the proposed Swanston TVSP project to anticipate the increase in water needs and facility improvements; however, detailed hydraulic modeling of the City system would need to be performed as development occurs to identify specific improvements to water supply, distribution mains, and transmission mains that may be needed to conform with City flow requirements. Because the water supply system is operated as part of a citywide grid, improvements to water supply facilities to serve potential development in the project area may extend beyond the project area boundaries. For this reason, future improvements to this utility are anticipated to occur as part of the City's Capital Improvement Program.

Long-Term Plan Area. For the increased demands when the entire project area is built out, the proposed Swanston TVSP project would replace the existing conveyance grid that does not meet the City standard for multi-family, and light commercial, and industrial zones.

The proposed water mains improvements for the Swanston TVSP project area are almost entirely within street rights-of-way. The improvements could require modifications to water lines and facilities outside the Swanston TVSP project area. As noted above for the water improvements related to development with the Strategic Plan area, improvements needed for development within the Long-Term Plan area would occur as part of the City's Capital Improvement Program.



***Source*:** Moore Iacofano Goltsman, Inc., 2008.

FIGURE **2-14**

Proposed Water System Improvements

Sanitary Sewer

The existing sanitary sewer system within the Swanston TVSP project area adequately conveys current wastewater flows. Occasional problems occur with inflow and infiltration during storm events, which is common in older systems. Many of the older sewer mains are of a smaller diameter than the City's minimum standard of an 8-inch diameter and will likely be replaced by the City through its Capital Improvement Program, or by developers, if required by the City.

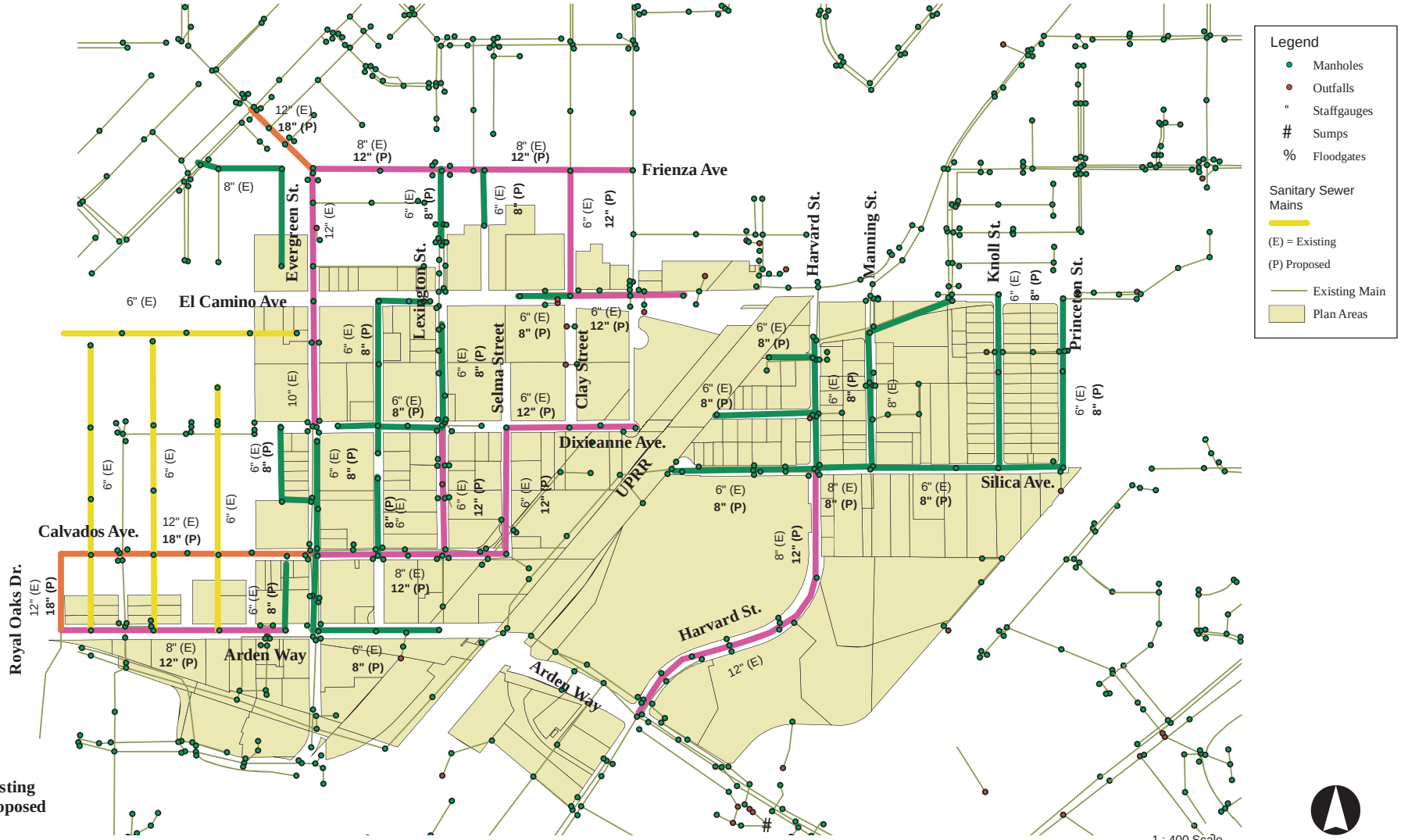
The Swanston TVSP project area is served by the City of Sacramento to the west of the tracks and the Sacramento Area Sewer District (SASD) to the east of the tracks. The City provides wastewater collection to the project area by a separated sewer system. However, all wastewater flows within the separated sewer system are directed into the City's Combined Sewer System (CSS) in the Central City and are ultimately directed to the Sacramento Regional Wastewater Treatment Plant (SRWTP) for treatment. The SRWTP has adequate capacity to serve the full project Swanston TVSP project development. Figure 2-15 shows the proposed sanitary sewer system improvements throughout the Swanston TVSP project area for the two development areas, as described below.

Strategic Plan Area. Existing mains that are smaller than the City's 8-inch diameter standard would be replaced as part of the City's maintenance program. Maintenance is a funded program within the City. The prioritization of maintenance funds would determine when substandard mains within the project area would be replaced. Individual development projects may need to replace substandard pipes if the City has not previously done so. While wastewater flow calculations have been performed as part of the proposed Swanston TVSP project to understand potential facility improvements and approximate costs, detailed modeling would be required as development occurs to confirm specific improvements to the wastewater conveyance system.

Long-Term Plan Area. The proposed Swanston TVSP project anticipates the need to increase the size of existing mains to carry the projected flows in both the City and SASD service areas. Recommended improvements to the existing sanitary sewer system to serve development within the Swanston TVSP project area would occur almost exclusively within existing street rights-of-way (see Figure 2-15). Similar to the water supply system, the wastewater conveyance system is designed in a grid system. Consequently, improvements to the system could include upsizing wastewater facilities downstream of the project area.

Storm Water

The Swanston TVSP project area lies within two City of Sacramento storm drainage basins, Basins 151 and 152. The majority of the Swanston TVSP project area lies in Basin 151. Storm drainage deficiencies in the Swanston TVSP project area include roadside ditches containing debris, damaged driveway culverts, and storm drain inlets covered with debris. A master plan report for Basin 151, completed by West Yost & Associates (WYA report) in 1996, indicated that the existing storm drain system for Basin 151 did not meet current City of Sacramento standards at the time of its publication.



***Source*:** Moore Iacofano Goltsman, Inc., 2008.

FIGURE **2-15**

Proposed Sanitary Sewer Improvements

The portion of Basin 152 within the Swanston TVSP project area is bounded by Harvard Street and the Capital City Freeway. Stormwater facilities within this portion of Basin 152 are fully developed, and there are no known deficiencies related to Basin 152 within the Swanston TVSP project area. Any development proposals within Basin 152 would provide necessary improvements to the storm drain system prior to development.

Strategic Plan Area. Figure 2-16 shows the proposed stormwater system improvements throughout the Strategic Plan area. Development of projects in the Strategic Plan area may require upsizing of pipes in the immediate area of the Strategic Plan area.

Long-Term Plan Area. Figure 2-17 shows the proposed stormwater system improvements throughout the Long-Term Plan area. The WYA report for Basin 151 recommended various improvements, some within the Swanston TVSP project area and some outside of the project area. All of the recommended improvements in the WYA report would be necessary to alleviate the existing potential for localized flooding due to development that could occur under the proposed Swanston TVSP project. The recommended storm drain system improvements in the Swanston TVSP project area are due almost entirely to capacity issues and are already planned to be remedied by the City. Funding has not been identified for improvements to the stormwater system.

Locations for two detention basins are shown in Figures 2-16 and 2-17. In the long-term, the two surface detention basins could transition to underground storage facilities. These below-ground basins would be designed and implemented with the development of future projects on each site.

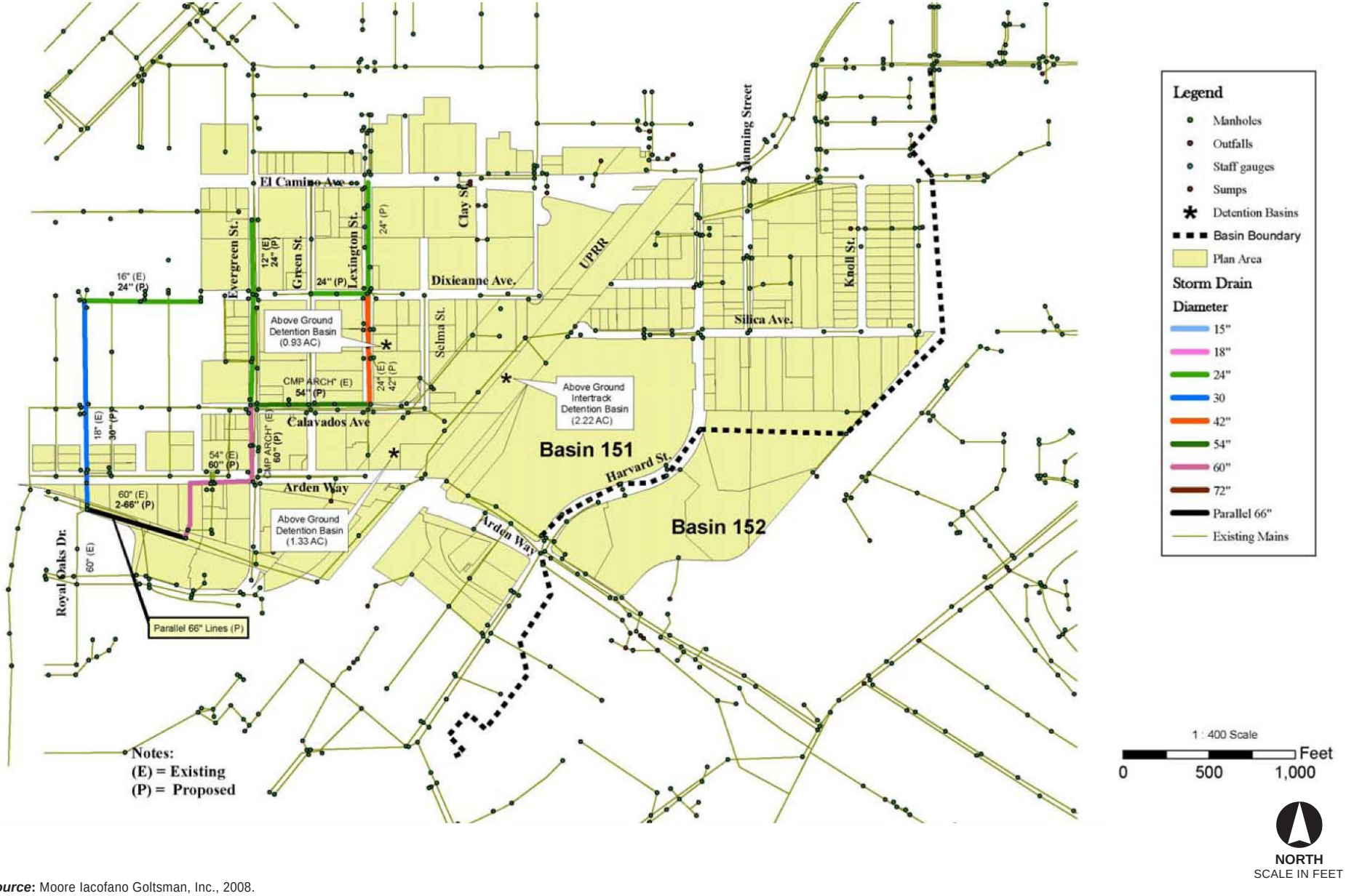
Stormwater improvements in the Swanston TVSP project area would place an emphasis on conservation and sustainability. New development would manage stormwater runoff on site and/or direct runoff to parks, greenways, mews, and open spaces to provide alternate opportunities for treatment and runoff reduction. In addition, neighborhood parks, pocket parks and greenways would incorporate stormwater measures, such as swales, infiltration and detention basins, and rain gardens.

2.5 GROWTH ASSUMPTIONS/DEVELOPMENT TRENDS

The proposed Swanston Station Specific Plan provides a roadmap for accomplishing a transit-oriented mixed use, village environment. There is no established timetable for effecting this transformation, as the City and area stakeholders have stressed the importance of allowing market conditions to dictate the rate of change in the Swanston TVSP project area. Therefore, based on a review of existing development conditions, market conditions, and developer activity, the Swanston TVSP defines two distinct areas in the area's evolution (as shown in Figure 2-5).

A market overview was prepared by Bay Area Economics for the Swanston TVSP project.[4] The overview provides a review of real estate market opportunities surrounding the Swanston Light Rail

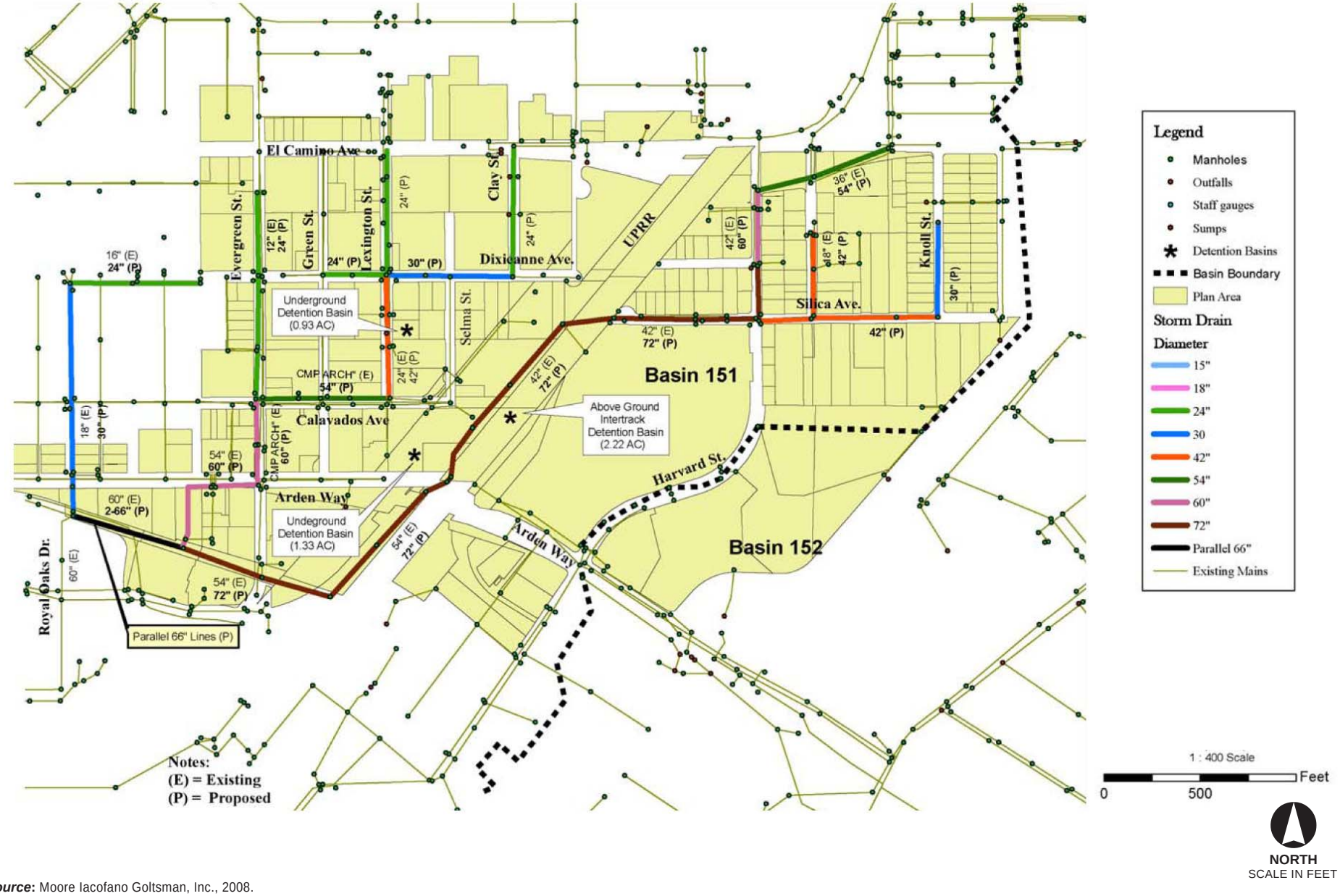
[4] BAE, Final Swanston Study Area Market Analysis, May 2007.



***Source*:** Moore Iacofano Goltsman, Inc., 2008.

FIGURE **2-16**

Storm Water System Improvements – Strategic Plan



***Source*:** Moore Iacofano Goltsman, Inc., 2008.

FIGURE **2-17**

Storm Water System Improvements – Long-Term Plan

Station. The study evaluates residential, retail, and office development opportunities in the area through 2025.

Strategic Plan Area

The information generated by the market overview and a review of the land uses and properties by the planning team resulted in an area that is targeted for development first, referred to as the Strategic Plan area. Expected to be built out around 2025, development in this area maximizes current development potential (identified by the market analysis) and leverages recent private development applications in the project area. Key strategies to kick start the transformation (as shown in Figure 2-5) aim to:

- bolster/support private investment through investment in the public realm and streetscapes along Dixieanne Avenue, Evergreen Street, Calvados Avenue, and Arden Way;
- concentrate new public and private investment on either side of Evergreen Street to capitalize on the energy of recent and planned developments and the revitalization of Dixieanne Park;
- introduce gateways to the transit village at Evergreen Street and Arden Way and El Camino Avenue to announce the station; and
- explore the reduction of parking requirements to encourage higher-density transit-oriented development.

The Strategic Plan area encompasses about 22.6 acres (42 parcels), concentrated south of El Camino Avenue and between Erickson and Green Streets. The southern portion of this area is anchored by the "Lumberjack Curve" area, owned by Sacramento Regional Transit District. Over the next 20 years or so, the Strategic Plan area could absorb 366 new dwelling units and 70,000 sf of commercial floor area. Based on visual inspections of parcels in the Strategic Plan area, it is expected that 12.3 acres of the Strategic Plan area, affecting 28 parcels, could experience investment, resulting in new development totaling 184 dwelling units and 43,000 sf of commercial space. Most of this new commercial space would be expected to locate along El Camino Avenue. The Signature and Lumberjack development projects (shown in Figure 2-5) account for another 4.1 acres (four parcels), 116 dwelling units, and 17,000 sf of commercial space. The balance of 6.2 acres (10 parcels) could accommodate an estimated 66 dwelling units and 10,000 sf of commercial space. The new development that could occur in the Strategic Plan area could translate into an increase in population of 940 persons and an increase in employment of 155 jobs.

In support of this development, roadway improvements shown in Figure 2-8 along Evergreen Street and Dixieanne and Calvados Avenues are proposed. These improvements consist primarily of bulb-outs and traffic circles, depending on whether traffic volumes warrant. Open space improvements within the Strategic Plan area would include the upgrading of Dixieanne Park and the construction of a pocket park and the mews that are indicated on the blocks included within the Strategic Plan area. Finally, the surface detention storm drainage facility shown in Figure 2-16 would be implemented within the Strategic Plan area.

Long-Term Plan Area

Beyond 2025, market conditions cannot be reasonably forecast. Consequently, the development potential identified for the Swanston TVSP project area outside the Strategic Plan area is based on the capacity of the land to accommodate additional growth. Thus, development within this area maximizes the land capacity within the Swanston TVSP project area. Excluding the area covered by the Strategic Plan area, the area west of the UP tracks could accommodate about 1,175 new dwelling units and 87,780 sf of commercial space. The area east of the tracks, which is now characterized by larger newer buildings, could accommodate about 1,055 new dwelling units and 347,735 sf of commercial space. Potential development within the Long-Term Plan area could translate into an increase in population of 5,730 persons and an increase in employment of 1,496 jobs. In total, at buildout, the Swanston TVSP project area could accommodate 2,596 new dwelling units and 505,515 sf of commercial space.

Most of the roadway, open space, and infrastructure improvements in the Swanston TVSP project area would be implemented when development within Long-Term Plan area is built. These improvements include those depicted in Figures 2-8 (roadways), 2-13 (open space), and 2-14 through 2-17 (water, wastewater, and storm drains, respectively).

2.6 APPROVALS

In order for the Swanston Station Specific Plan to be implemented, the City of Sacramento will need to take a number of discretionary actions. The actions necessary for project approval include, but are not limited to, the following:

- certification of an EIR pursuant to the California Environmental Quality Act and associated Guidelines;
- adoption of findings of fact and statement of overriding considerations;
- adoption of a Mitigation Monitoring Plan;
- adoption of the Swanston Station Specific Plan;
- approval of a General Plan Amendment designating property within the Specific Plan area as Residential Mixed Use (46.5± gross acre.) and Mixed Use. (187± gross acre);
- approval of a General Plan amendment to the land use diagrams; and
- approval of a zoning amendment to rezone certain property within the Specific Plan area to Residential Mixed Use Transit Overlay (RMX [TO]) or General Commercial Transit Overlay (C-2 [TO]).
- approval of amendments to Chapter 17.178 Transit Overlay Zone relating to Specific Plan area setbacks.

Chapter 3
Summary of Impacts and Mitigation Measures

3.1 PROJECT UNDER REVIEW

The proposed Swanston Station Transit Village Specific Plan (proposed Swanston TVSP project) is a long-range urban design and implementation plan that guides public and private improvements in the Swanston Station Transit Village Specific Plan area (Swanston TVSP project area) over the next 20-25 years and beyond. The Swanston TVSP project area is roughly bounded by El Camino Avenue on the north, Arden Way on the south and the Capital City Freeway (Business 80) on the east. Beaumont and Erickson Streets define the western edge of the Swanston TVSP project area. The proposed Swanston TVSP project addresses land use, traffic and circulation, infrastructure, financing strategies, and implementation measures that are needed to support the vision for future development and investment in the Swanston TVSP project area. The Swanston TVSP proposes new land use designations and zoning for the project area.

The proposed Swanston TVSP project includes two development areas that are analyzed in this Draft EIR. The initial development area, called the Strategic Plan area, is projected to build out by Year 2025 and could accommodate approximately 366 dwelling units and 70,000 gross square feet (sf) of commercial floor space within an approximately 23-acre area. The second development area, comprising the rest of the proposed Swanston TVSP project area, is called the Long-Term Plan area. The development potential in the approximately 213-acre Long-Term Plan area, based on the proposed zoning districts, would include approximately 2,230 new dwelling units and 435,515 sf of new commercial floor space.

3.2 SUMMARY OF IMPACTS

Effects Found to be Less Than Significant

As shown in Table 3-1 (provided at the end of this chapter), 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: 6.1 (Aesthetics), 6.2 (Air Quality), 6.3 (Biological Resources), 6.5 (Geology, Soils, and Seismicity), 6.6 (Hazardous Materials), 6.6 (Hydrology and Water Quality), 6.8 (Noise and Vibration), 6.9 (Public Services), 6.10 (Utilities), and 6.11 (Transportation). In the course of preparing the EIR for this project, 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 Swanston TVSP project would result in significant impacts to some of these resources, which are fully analyzed in Sections 6.1 through 6.11 of this document and summarized in Table 3-1.

This EIR identifies mitigation measures that could be implemented by the City and/or the project applicants 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: 6.2 (Air Quality), 6.3 (Biological Resources), 6.4 (Cultural Resources), 6.6 (Hazardous Materials), 6.8 (Noise and Vibration), 6.9 (Public Services), and 6.11 (Transportation). 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.

Significant and Unavoidable Impacts – Strategic Plan Area

A substantial temporary increase in ground-borne vibration could affect nearby structures, particularly if pile-driving activities were necessary during construction in the Strategic Plan area. There are measures available to reduce ground-borne vibration effects but they may not be sufficient to achieve the City's standards.

Significant and Unavoidable Impacts – Long-Term Plan Area

Similar to the Strategic Plan, a substantial temporary increase in ground-borne vibration could affect nearby structures, particularly if pile-driving activities were necessary during construction in the Long-Term Plan area. There are measures available to reduce ground-borne vibration effects but they may not be sufficient to achieve the City's standards.

Ozone precursors (reactive organic gases and oxides of nitrogen) would be emitted by stationary and mobile sources associated with development that could occur within the Long-Term Plan area. Even though the proposed Swanston TVSP project is a transit-oriented development plan that would reduce vehicle miles traveled, the ozone precursor emissions would exceed the thresholds established by the Sacramento Metropolitan Air Quality Management District.

Cumulative Significant and Unavoidable Impacts

The development that could occur in the proposed Swanston TVSP project, in combination with other development in the Sacramento Valley Air Basin, would result in emissions of ozone precursors in excess of the thresholds by the Sacramento Metropolitan Air Quality Management District.

3.3 ALTERNATIVES TO THE PROPOSED PROJECT

During the planning process to arrive at the draft Swanston Station Transit Village Specific Plan, a number of alternatives were reviewed to provide the community with policy options regarding development in project area. Those alternatives were evaluated for environmental issues, as well as potential policy conflicts, implementation concerns, and ability to respond to anticipated market conditions. However, the other alternatives considered most viable and discussed most with the community accommodated even greater development potential than the proposed Swanston TVSP project and, thus, would not reduce environmental impacts. Other alternatives were considered to specifically reduce the two significant project-related impacts identified for the proposed Swanston Station Specific Plan, but they did not satisfy the project objectives. As a result, this EIR analyzes one alternative to the proposed project – the No Project Alternative, which assumes that the Swanston TVSP project area would be developed consistent with currently allowable land uses, zoning, and development intensities.

3.4 POTENTIAL AREAS OF CONCERN

Responses to the NOP were received from the California Department of Water Resources, the Native American Heritage Commission, the California Public Utilities Commission, and a property owner within the project area. A copy of the NOP and responses to the NOP are included in Appendix A of this Draft EIR in accordance with CEQA. The NOP responses are summarized below.

- The NOP response from the Department of Water Resources requested evaluation of whether the project area would be exposed to flood hazards.

- The NOP response from the Native American Heritage Commission requested investigation to determine whether the project area might contain cultural resources.

- The NOP response from the California Public Utilities Commission requested consideration of rail safety and compliance with the Commission's regulations regarding grade crossings with rail lines and protective fencing.

- The NOP response from United Services Automobile Association, a business in the project area, requested that the existing Planned Unit Development approval for the site not be modified and that an alternative to the Swanston pedestrian bridge (spanning the Union Pacific tracks and Sacramento Regional Transit District light rail lines) be evaluated.

3.5 SUMMARY TABLE

Table 3-1 identifies the impacts and mitigation measures identified for the Strategic Plan area, the Long-Term Plan area, and cumulative impacts. The table has been organized to correspond with the environmental issues discussed in Chapter 6. The summary table is arranged as follows:

1. Environmental impacts ("Impact").
2. Applicability of the impact to the Strategic Plan area and/or the Long-Term Plan area.
3. Level of significance without mitigation ("Significance").
4. Mitigation measures ("Mitigation Measure").
5. 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 for 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 6, Introduction to the Analysis.

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
Aesthetics					
AES-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not have a demonstrable negative aesthetic effect.	X	X	LTS	None required.	NA
AES-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not be expected to result in glare in such a way as to cause public hazard or annoyance for a sustained period of time.	X	X	LTS	None required.	NA
Cumulative Aesthetics Impacts					
AES-3. Cumulative development in the same viewshed as the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not result in a demonstrable negative aesthetic effect.	X	X	LTS	None required.	NA
AES-4. The proposed Swanston TVSP project, in combination with cumulative development surrounding the Swanston TVSP project area (Strategic Plan area and Long-Term Plan area), would not result in glare in such a way as to cause public hazard or annoyance for a sustained period of time.	X	X	LTS	None required.	NA
Air Quality					
AQ-1. Development that could occur within the Strategic Plan area would generate construction-related emissions of NOx; however, the predicted amounts would be below the threshold of significance of 85 pounds per day.	X	NA	LTS	None required.	NA
AQ-2. Development that could occur in the Strategic Plan area would generate construction-related emissions of particulate matter (PM_{10}) that could exceed SMAQMD standards.	X	NA	PS	*AQ-2.1 Particulate Matter Emission Reduction*. The project applicant/developer shall implement the following reduction measures, depending on the size of the proposed development. The project applicant/developer shall ensure that these measures	LTS

Legend: (S) Significant Adverse Impact; (SU) Significant and Unavoidable Impact; (PS) Potentially Significant Impact; (LTS) Less-than-significant Impact; (NI) No Impact; (B) Beneficial; (NA) Not Applicable

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				are conducted by requiring that they be included in all construction contracts for all phases of construction and demolition activities. a) If a project requires that the maximum disturbance for grading at any given time is 5 acres or less, no mitigation measures would be required unless the SMAQMD stipulates otherwise. b) If a project requires that the maximum disturbance for grading at any given time is between 5.1 and 8 acres, Level One mitigation is required, as specified by the prevailing SMAQMD Guide at the time a particular development project is approved. • During clearing, grading, earth-moving, or excavation operations, fugitive dust emissions shall be controlled by watering exposed soil two times per day; and • Maintain two feet of freeboard space on haul trucks. c) If a project requires that the maximum disturbance for grading at any given time is between 8.1 and 12 acres, Level Two mitigation is required, as specified by the prevailing SMAQMD Guide at the time a particular development project is approved. • During clearing, grading, earth-moving, or excavation operations, fugitive dust emissions shall be controlled by watering exposed soil three times per day; • Soil piles shall be watered three times daily; and • Maintain two feet of freeboard space on haul trucks.	

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				d) If a project requires that the maximum disturbance for grading at any given time is between 12.1 and 15 acres, Level Three mitigation is required, as specified by the prevailing SMAQMD Guide at the time a particular development project is approved. • Water all exposed soil with sufficient frequency as to maintain soil moistness; • Maintain two feet of freeboard space on haul trucks; and • Use emulsified diesel or diesel catalysts on applicable heavy duty diesel construction equipment.	
AQ-3. Development that could occur within the Strategic Plan area would contribute to operational emissions of ozone precursors; however, the net increase in emissions would not exceed SMAQMD thresholds.	X	NA	LTS	None required.	NA
AQ-4. Development that could occur under the Strategic Plan would increase traffic volumes in some locations that, in turn, would contribute to increased CO concentrations near roadways and intersections; however, the resulting CO concentrations would not exceed the 1-hour state standard of 20.0 ppm or the 8-hour state standard of 9.0 ppm.	X	NA	LTS	None required.	NA
AQ-5. Development that could occur under the Long-Term Plan would generate construction-related emissions of ozone precursors and particulate matter that could exceed SMAQMD standards.	NA	X	PS	Implementation of Mitigation Measure AQ-2.1 (Particulate Matter Emission Reduction) during construction of individual developments under the Long-Term Plan would ensure that impacts due to emissions of PM_{10} during grading phases would be reduced to a less-than-significant level.	LTS
AQ-6. Development that could occur under the Long-Term Plan would generate operational emissions of ozone precursors that may exceed SMAQMD standards	NA	X	PS	The measures identified in SMAQMD's Guide in Table E-2 represent strategies for reducing operational emissions. It is noteworthy that the Swanston TVSP project contains specific policies and guidelines that would implement a number of these measures and would therefore reduce many of the	SU

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				potential operational air quality impacts that might otherwise occur. As future individual development projects occur, they could include other measures from the list in Table E-2, or new ones that may be identified in future updates to the SMAQMD's Guide.	
AQ-7. Development that could occur in the Long-Term Plan area could contribute to increased CO levels in the vicinity of the project area but would not exceed ambient air quality standards.	NA	X	LTS	None required.	NA
Cumulative Air Quality Impacts					
AQ-8. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would make a cumulatively considerable contribution to regional ozone precursor emissions and so in combination with emissions from other developments would have a significant cumulative impact on regional ozone levels.	X	X	S	Even with the inclusion of site planning, alternative travel modes, and design features recommended by the SMAQMD, the Swanston TVSP project would have considerable emissions of ROG and NOx. Other foreseeable development in the SVAB would be expected to also comply with the SMAQMD recommendations; however, even if the 15 percent operational emissions reduction is achieved, the threshold of 65 pounds per day may still be exceeded.	SU
AQ-9. The proposed Swanston TVSP project's incremental contribution to greenhouse gas emissions would not be cumulatively considerable and thus potential cumulative impacts related to greenhouse gas emissions is considered less than significant.	X	X	LTS	None required.	NA
Biological Resources					
BIO-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not create a potential health hazard, or involve the use, production or disposal of materials that pose a hazard to plant or animal populations in the Swanston TVSP project area.	X	X	LTS	None required.	NA

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
BIO-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not result in substantial degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of threatened or endangered species of plant or animal. Development could, however, impact nesting birds protected under state and federal regulations.	X	X	PS	*BIO-2.1 Preconstruction Surveys and Protection Measures for Nesting Birds*. If trees are removed outside the nesting season (typically March 15 to August 30), there would be no effect on nesting birds and no mitigation is required. Construction activities shall be timed to avoid tree removal during the nesting season. If this cannot be accomplished, then a qualified biologist shall conduct a preconstruction nesting survey no more than one week prior to tree removal to determine if nesting birds are present. If nesting birds are present, an appropriate buffer zone (no construction area) shall be developed by the biologist and in consultation with CDFG, and construction activities shall be suspended in the buffer zone until future surveys indicate that the chicks have fully fledged (left the nest). Completion of preconstruction surveys and avoidance of bird nests would result in no impacts to nesting birds. Survey results shall be valid for a period of 21 days from the date of the survey. Should vegetation or building removal fail to be conducted within this time frame, a second survey shall be undertaken. A report shall be submitted to the City of Sacramento, following the completion of the bird nesting survey that includes, at a minimum, the following information: • A description of methodology including dates of field visits, the names of survey personnel with resumes, and a list of references cited and persons contacted. • A map showing the location(s) of any bird nests observed on the Swanston TVSP project area.	LTS

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
BIO-3. Development that could occur in the Strategic Plan area would have no effect on species of special concern. However, development that could occur in the Long-Term Plan area could affect the purple martin.	NA	X	PS	*BIO-3.1 Construction Limits Around the Purple Martin Nests*. Although purple martins are tolerant of human activities, if active nests are present, no construction shall be conducted within 120 feet of the edge of the purple martin colony (determined by the closest active nest hole to the construction activity) during the beginning of the purple martin breeding season from March 15 to May 15. The buffer area shall be avoided to prevent destruction or disturbance of the nest(s) until it is no longer active. The size of the buffer area may be adjusted if a qualified biologist experienced with purple martin biology and/or CDFG determines it would not be likely to have adverse effects on the martins. The site characteristics used to determine the size of the modified buffer should include a) topographic screening; b) distance from disturbance to nest; c) the size and quality of foraging habitat surrounding the nest; and d) sensitivity of the species to nest disturbances to specific construction activities. No project activity shall commence within the buffer area until a qualified biologist experienced with purple martin biology confirms that nests are no longer active. In addition, no equipment taller than 9 feet in height shall be parked or stored beneath the El Camino Avenue overcrossing within 100 horizontal feet of nest holes from April 15 to July 31.	LTS
BIO-4. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) could affect wetlands, waters of the US, or waters of the State.	X	X	PS	Before construction occurs within portions of the Swanston TVSP project area that could support potentially jurisdictional wetlands and other waters of the U.S. (i.e., the drainage ditch on the undeveloped parcel at the northwest corner of Green Street and Calvados Avenue and topographic depressions identified along the UP tracks within the UP right-of-way), a wetland delineation shall be conducted and verified by the Corps. Implementation of Mitigation	LTS

Legend: (S) Significant Adverse Impact (SU) Significant and Unavoidable Impact (PS) Potentially Significant Impact (LTS) Less-than-significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				Measure BIO-4.1 would ensure that no net loss of the function or value of wetlands would occur. If avoidance is not possible, then the conditions and mitigation requirements established by the Corps 404 permit shall apply and be implemented by the project applicant seeking to fill the wetland or other waters of the U.S. *BIO-4.1 Avoidance of Wetlands*. The City of Sacramento shall ensure no-net loss of the function or value of all jurisdictional wetlands. This can be achieved through avoidance measures to avoid direct impacts on preserved wetland habitat or other jurisdictional "waters of the U.S." These measures shall include, but are not limited to, the following: • A four-foot-tall, brightly colored (usually orange or yellow) synthetic mesh material fence (or an approved equivalent) shall be installed a minimum of 50 feet outside the edge of any wetland habitats in the immediate vicinity of proposed construction areas. In addition to the orange construction fencing, silt fencing shall be placed next to the orange fence to further protect the wetland from runoff or other potential pollutants. Prior to initiation of construction activities, a qualified biologist shall inspect the protective fencing to ensure that all wetland features have been appropriately fenced. During construction, no encroachment into fenced areas shall be permitted and the fence shall remain in place until all construction activities have been completed. • Staging areas shall be located a minimum of 100 feet away from wetland habitats. Temporary stockpiling of excavated or imported material shall occur only in project approved construction staging areas. Excess excavated soil shall be disposed of at a regional landfill or at another	

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				approved and/or properly permitted location. Stockpiles that are to remain on the site throughout the wet season shall be protected to prevent erosion. • The wetlands not directly affected by construction activities shall be protected using Best Management Practices erosion control techniques.	
BIO-5. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) could result in the loss of heritage trees; however, compliance with the City's Heritage Tree Ordinance (City Code 12.64.040) would afford protection to, or replacement of, heritage trees.	X	X	LTS	None required.	NA
Cumulative Biological Resources Impacts					
BIO-6. Development that could under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development, could result in a cumulative loss of biological resources.	X	X	PS	Implementation of Mitigation Measures BIO-2.1 and BIO-3.1 would reduce potential direct effects on migratory bird species by identifying occupied nests, delaying construction if necessary, and providing a buffer zone (no construction area) around occupied nests to ensure that no take or destruction of nests or eggs occurs. Because these mitigation measures reduce impacts to nesting birds, their young and eggs, the proposed Swanston TVSP project would not contribute to other losses locally or regionally; therefore, the impact of the proposed Swanston TVSP project would not be cumulatively considerable. In addition, protection of migratory bird species is required by state and federal laws, so that other projects in the City and region would also have to implement measures to reduce their individual impacts. Implementation of Mitigation Measure BIO-4.1 would reduce the impacts of the Swanston TVSP project on potential wetlands and other waters of the U.S. and also reduce the contribution of the proposed	LTS

Legend: (S) Significant Adverse Impact (SU) Significant and Unavoidable Impact (PS) Potentially Significant Impact (LTS) Less-than-significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				Swanston TVSP project to the cumulative impact on biological resources to a level that is less than considerable. Section 404 of the Clean Water Act would similarly apply to other projects that could disturb wetlands, so that cumulative impacts on wetlands and other waters of the U.S. would be less than significant. Under the Nationwide and Individual Permits issued pursuant to Section 404, project applicants are required to mitigate for wetland loss; mitigation can be required to replace wetland acreage at greater than a 1 to 1 ratio, meaning that more wetland acreage can be created than is lost. The net result is a no net loss of wetland habitat.	
Cultural Resources					
CR-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not cause a substantial change in the significance of an historical resource.	X	X	LTS	None required.	NA
CR-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not be expected to cause a substantial change in the significance of an archeological or paleontological resource because such development would be subject to the City's Historic Preservation Ordinance. Nevertheless there may be unknown resources encountered that could be adversely affected by future development.	X	X	PS	*CR-2.1 Treatment of Unexpected Archaeological Resources*. In the event that any prehistoric or historic-period subsurface archeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, animal bone, obsidian, and/or mortar are discovered during demolition/ construction-related earth-moving activities, all ground-disturbing activity within 100 feet of the resources shall be halted immediately, and the City of Sacramento Development Services Department and the City's Preservation Director shall be notified within 24 hours. The project applicant shall retain an archeologist who meets the Secretary of the Interior's professional qualifications for Archeology. The City Preservation Director shall consult with the archeologist to assess the significance of the find. Impacts to any significant	LTS

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				resources shall be mitigated to a less-than-significant level through data recovery or other methods determined adequate by the City Preservation Director and that are consistent with the Secretary of the Interior's Standards for Archeological Documentation. If Native American archeological, ethnographic, or spiritual resources are discovered, all identification and treatment of the resources shall be conducted by a qualified archaeologist and Native American representatives who are approved by the local Native American community as scholars of the cultural traditions. In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted. When historic archeological sites or historic architectural features are involved, all identification and treatment is to be carried out by historical archaeologists or architectural historians who meet the Secretary of the Interior's professional qualifications for Archaeology and/or Architectural History. *CR-2.2 Cessation of Construction if Human Remains* Encountered. If human remains are discovered during any demolition/construction activities, all ground-disturbing activity within 50 feet of the remains shall be halted immediately, and the Sacramento County coroner shall be notified immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be	

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				adhered to in the treatment and disposition of the remains. The project applicant shall also retain a professional archeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City of Sacramento Development Services Department shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in CEQA Guidelines Section 15064.5(e) and Public Resources Code Section 5097.98. The project applicant shall implement approved mitigation, to be verified by the City of Sacramento Development Services Department, before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered. *CR-2.3 Treatment of Unexpected Paleontological Resources*. Should paleontological resources be identified at any project construction sites during any phase of construction, the project manager shall cease operation at the site of the discovery and immediately notify the City of Sacramento Development Services Department. The project applicant shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the City of Sacramento Development Services Department shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, specific plan policies and land use	

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.	
Cumulative Cultural Resources Impacts					
CR-3. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development in the Central Valley, could cause a substantial change in the significance of a historical or archeological resource as defined in CEQA Guidelines Section 15064.5.	X	X	PS	Implementation of Mitigation Measures CR-2.1 and CR-2.2 provides for the treatment and protection of previously unknown archaeolgical resources discovered during the course of construction and would therefore reduce the project's contribution to the cumulative loss of archeological resources to a less-than-significant level.	LTS
CR-4. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development in the Central Valley, could cause a substantial change in the significance of a paleontological resource or site or unique geologic feature.	X	X	PS	Implementation of Mitigation Measures CR-2.3 provides for the treatment and protection of previously unknown paleontological resources discovered during the course of construction and would therefore reduce the project's contribution to the cumulative loss of paleontological resources to a less-than-significant level.	LTS
Geology, Soils, and Seismicity					
GE-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not expose people or structures to fault rupture hazards.	X	X	NI	None required.	NA
GE-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would expose people and structures to moderate or strong seismic groundshaking. This effect would be less than significant, because seismic-resistant design is required by the City of Sacramento and would reduce risks to life and property to a level that is considered acceptable given site condition, building standards, and costs.	X	X	LTS	None required.	NA

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
GE-3. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not expose people or structures to landslide or other slope failure hazards, because there are no landslides or steep slopes in the Swanston TVSP project area.	X	X	NI	None required.	NA
GE-4. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) could expose people and structures to seismic-related ground failure, including liquefaction. This impact would be less than significant because seismic-resistant design is required by the City of Sacramento.	X	X	LTS	None required.	NA
GE-5. Construction of future development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) on expansive, compressive or corrosive soils could result in damage to foundations, structures, roadways, and other near surface improvements. However, this impact would be less than significant because of development regulations of the City of Sacramento.	X	X	LTS	None required.	NA
Cumulative Geologic Impacts					
GE-6 The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development in the area, could expose an increased number of people and structures to geoseismic and soil hazards. However, this risk would be a less-than-significant cumulative impact because existing state and local regulations would reduce the potential hazards to an acceptable level.	X	X	LTS	None required.	NA
Hazardous Materials					
HM-1. Construction and development that could occur within the Swanston TVSP project area (Strategic Plan area and Long-Term Plan area) could expose people to previously unidentified sources of potential health hazards, such as soil or groundwater contamination, from historic on or off-site uses.	X	X	PS	*HM-1.1 Remediation Plan for Contaminated Soils or Groundwater and Site Health and Safety Plan.* In the event that previously unidentified underground storage tanks or other features or materials that could present a threat to human health or the environment are discovered during excavation and grading, construction in	LTS

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				that immediate area shall cease immediately, a State Registered Environmental Assessor shall evaluate the type and extent of the hazardous materials contamination and make appropriate recommendations, including if necessary, the preparation of a site remediation plan. In the event that site inspections find evidence of contamination, waste discharges, underground storage tanks, abandoned drums, or other environmental impairments, the Sacramento County Environmental Management Department (SCEMD) shall be notified. A site remediation plan shall be prepared that (1) specifies measures to be taken to protect workers and the public from exposure to potential site hazards, and (2) certifies that the proposed remediation measures would clean up the contaminants, dispose of the wastes, and protect public health in accordance with federal, state, and local requirements. In the event contaminated groundwater is identified, any discharges to the sewer shall be in accordance with the City Department of Utilities Engineering Services Policy No. 0001, adopted as Resolution No. 92-439 by the Sacramento City Council. In addition, a site health and safety plan, which meets the intent of OSHA hazardous materials worker requirements (CCR Title 8), shall be prepared by a qualified professional and in place prior to commencement of site-disturbing activities associated with the investigation and/or remediation. The project applicant, through the project contractor, shall ensure proper implementation of the health and safety plan. Commencement of work in the areas of potential hazards shall not proceed until all identified hazards are managed to the satisfaction of the City and SCEMD and the SCEMD allows work to commence.	

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
HM-2. Construction and/or operation of development that could occur within the Swanston TVSP project area (Strategic Plan area and Long-Term Plan area) could expose workers, the public, and the environment to potential health hazards from lead-based paint, asbestos, and/or PCBs.	X	X	PS	*HM-2.1 Investigation of Buildings for Lead, ACM, or PCBs*. Prior to demolition of any structure in the Swanston TVSP project area, the project applicant shall ensure that each structure to be demolished has been investigated for the presence of lead-based paint, ACM, or PCBs. If the investigation finds lead-based paint, ACM, or PCBs at unacceptable levels as set by local and state standards, the project applicant shall ensure that all recommendations for the removal of these hazardous building materials are carried out prior to demolition in accordance with applicable regulations and standards, and by suitable contractors certified by the California Department of Health Services. Once all abatement measures have been implemented, the project applicant shall provide written documentation to the City that lead-based paint, ACM, and PCB testing, abatement, and/or removal has been completed in accordance with state and local laws and regulations.	LTS
Cumulative Hazardous Materials Impacts					
HM-3. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development in the region, could increase the risk of release of hazardous materials (including, but not limited to, asbestos, lead, and chemicals), resulting from demolition or site preparation activities, which could create a health hazard or potential health hazard to the public; however, site-specific safety measures required by existing hazardous materials regulations would reduce this impact to less than significant.	X	X	LTS	None required.	NA

Legend: (S) Significant Adverse Impact; (SU) Significant and Unavoidable Impact; (PS) Potentially Significant Impact; (LTS) Less-than-significant Impact; (NI) No Impact; (B) Beneficial; (NA) Not Applicable

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
Hydrology and Water Quality					
HY-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would result in construction activities that could degrade water quality and violate state water quality objectives by increasing sedimentation and other contaminants entering streams and rivers; however, existing state and local regulations would ensure that control measures and plans are in place to protect water quality.	X	X	LTS	None required.	NA
HY-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would generate new sources of urban runoff that could violate water quality standards or waste discharge requirements for receiving waters; however, design guidelines included as part of the proposed Swanston TVSP project along with compliance with existing state and local regulations would require implementation of control measures and best management practices that would protect water quality.	X	X	LTS	None required.	NA
HY-3. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not substantially impact groundwater recharge or quality.	X	X	LTS	None required.	NA
HY-4. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not expose people and/or property to the risk of injury and damage in the event of a 100-year flood.	X	X	LTS	None required.	NA
HY-5. Development that could occur under the proposed Swanston TVSP project (Strategic Plan and Long-Term Plan areas) would generate stormwater that would exceed the capacity of the stormwater system. Provisions of the proposed Swanston TVSP project would encourage storm-water control and treatment, but would not ensure that adequate stormwater capacity exists to serve future development.	X	X	PS	Either of the following mitigation measures would reduce impacts to less than significant. *HY-5.1 Construction of Recommended Stormwater Detention Basins*. The City shall identify a mechanism to fund the construction of the required detention basins by requiring individual project applicants to pay their fair share towards the improvement. Funds from this mechanism shall be	LTS

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				used to pay for the drainage improvements identified in the Swanston Station Specific Plan. Funding mechanisms identified for consideration in the Swanston Station Specific Plan include impact fees, utility user fees, and regional and federal grants. *HY-5.2 On-site Stormwater Detention*. Project applicants shall provide on-site stormwater detention to ensure that peak runoff from the project site will not exceed existing runoff volumes, until the required detention basins are constructed.	
Cumulative Hydrology Impacts					
HY-6. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the region, would result in the discharge of stormwater runoff containing urban pollutants and sediment to local waterways, which could affect surface water quality in the Sacramento River watershed. However, the proposed Swanston TVSP project's contribution is considered less than cumulatively considerable.	X	X	LTS	None required.	NA
HY-7. Dewatering activities and construction of the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the Sacramento River watershed, could affect groundwater resources, change the rate and/or direction of flow, and degrade groundwater quality. However, compliance with existing regulations, particularly the permitting requirements of the CVRWQCB, would reduce the project's contribution to this effect to less than cumulatively considerable.	X	X	LTS	None required.	NA
HY-8. Future development within the Sacramento River watershed would expose people and/or property to the risk of injury and damage in the event of a 100-year flood. However, because the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) is not	X	X	NI	None required.	NA

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
located in a flood zone, it would not contribute to cumulative effects.					
HY-9. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City, would generate stormwater runoff that could exceed the capacity of the stormwater system. However, the project's contribution to this effect would be less than cumulatively considerable.	X	X	LTS	None required.	NA
Noise					
NO-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would temporarily expose existing sensitive receptors to increased noise levels during the short-term construction periods associated with that development.	X	X	LTS	None required.	NA
NO-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would temporarily increase levels of ground-borne vibration as a result of construction activities associated with the development.	X	X	PS	*NO-2.1 Vibration Reduction Practices for Pile Driving*. For pile driving within 100 feet of an existing building, project applicants shall implement vibration reduction practices, such as drilling pilot holes for piles, to the extent feasible, prior to commencement of impact pile driving. Prior to issuance of a building permit, project applicants shall submit to the City for approval a report specifying the vibration reduction practices that will be implemented and the estimated vibration reduction potential of such practices	SU
NO-3. Development that could occur within the Strategic Plan area would permanently expose sensitive receptors to increased noise levels; however, the predicted increase in noise levels would not be expected to exceed the City's noise standards.	X	NA	LTS	None required.	NA

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
NO-4. Development that could occur within the Strategic Plan area could permanently expose sensitive receptors to increased noise produced by on-site stationary sources.	X	NA	PS	*NO-4.1 HVAC Noise Control*. Prior to the issuance of building permits, development applicants shall submit engineering and acoustical specification for a project's mechanical HVAC equipment to the Planning Director demonstrating that the equipment will control its noise emissions to the degree specified under the appropriate provision of the Sacramento General Plan or Municipal Code. *NO-4.2 Garbage Disposal and Loading Dock Noise Reduction*. Garbage storage areas and building loading docks shall be sited to allow adequate separation or shielding to protect adjacent noise-sensitive uses from noise emissions associated with truck pickup and delivery activity. Prior to the issuance of building permits, the project applicants shall submit acoustical studies to the Planning Director demonstrating that noise emissions from truck activities will be controlled to the degree specified by the appropriate provisions of the Sacramento General Plan or Municipal Code. *NO-4.3 Other Stationary Source Noise Reduction*. Noise generating stationary equipment associated with proposed commercial uses, including portable generators, compressors, trash compactors, etc. shall be enclosed or acoustically shielded to reduce noise-related impacts to nearby noise-sensitive uses. Prior to the issuance of building permits, the project applicants shall submit acoustical studies to the Planning Director demonstrating that noise emissions from all significant on-site stationary sources of noise will be controlled to the degree specified by the appropriate provisions of the Sacramento General Plan or Municipal Code.	LTS
NO-5. Development that could occur within the Strategic Plan area would not be expected to expose sensitive receptors to excessive vibration levels.	X	NA	LTS	None required.	NA

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
NO-6. Development that could occur within the Long-Term Plan area could expose sensitive receptors to increased noise levels.	NA	X	PS	*NO-6.1 Residential Construction and Uses near I-80 Business Loop*. Proposed new residential construction and uses within 500 feet the I-80 Business Loop (based on Traffic Noise Model estimates for receptors with an unobstructed line-of-sight to the freeway) shall incorporate special construction measures as determined by acoustic study to ensure that interior noise levels from project and other anticipated noise sources are within the City's General Plan standards. *NO-6.2 Residential Construction and Uses near Rail Operations*. Proposed new residential uses within 350 feet of the LRT tracks or within 750 feet of the Union Pacific tracks (based on FTA screening distances without intervening structures) shall incorporate special construction measures as determined by acoustic study to ensure that interior noise levels from project and other anticipated noise sources are within the City's General Plan standards.	LTS
NO-7. Development that could occur within the Long-Term Plan area could permanently expose sensitive receptors to increased noise produced by on-site stationary sources.	NA	X	PS	Implementation of Mitigation Measures NO-4.1, NO-4.2, and NO-4.3, which address noise control for HVAC systems, garbage disposal and loading dock, and other stationary sources, would substantially reduce predicted noise levels at noise sensitive receptors to the limits in the Sacramento General Plan or Municipal Code. As a result, residual noise impacts from stationary sources would be reduced to a less-than-significant level.	LTS
NO-8. Development that could occur within the Long-Term Plan area could expose sensitive receptors to excessive vibration levels.	NA	X	PS	*NO-8.1 Buffer Zones or Structural Measures to Reduce Vibration Levels*. The City shall exclude proposed residential uses within 150 feet and 200 feet of the LRT and UPRR tracks, respectively; or prior to issuance of building permits for residential structures within 150 feet and 200 feet of the LRT and UPRR tracks, respectively, the project applicants shall submit to the City for approval a report	LTS

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				specifying the vibration reduction measures that will be incorporated into their structural design to reduce vibration impacts to acceptable levels.	
Cumulative Noise Impacts					
NO-9. Traffic generated from the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in conjunction with traffic generated from planned future development in the surrounding parts of Sacramento, would not be expected to permanently expose sensitive receptors to increased cumulative noise levels	X	X	LTS	None required.	NA
Public Services					
PS-1. Development that could occur within the Strategic Plan area would result in an increase in demand for law enforcement services. However, the increase in demand would not result in the need to construct new, or expand existing, police facilities.	X	NA	LTS	None required.	NA
PS-2. Development that could occur within the Strategic Plan area would increase the demand for fire and emergency protection services. However, the increase in demand would not result in the need to construct new, or expand existing, fire facilities.	X	NA	LTS	None required.	NA
PS-3. Development that could occur within the Strategic Plan area would generate additional students in the TRUSD. However, the increase in enrollment would not result in the need to construct new, or expand existing, school facilities.	X	NA	LTS	None required.	NA
PS-4. Development that could occur within the Strategic Plan area would result in an increase in demand for library services. This demand for library services is acknowledged by the FMP, which includes funding mechanisms to expand library facilities.	X	NA	LTS	None required.	NA
PS-5. Development that could occur within the Strategic Plan area would result in the need to construct new, or expand existing, neighborhood serving parks. However,	X	NA	LTS	None required.	NA

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
parks and open space features in the Swanston Station Specific Plan, coupled with the City's impact fees, would meet the increased demand.					
PS-6. Development that could occur within the Long-Term Plan area could require consideration of new or expanded police facilities beyond year 2025. However, the SPD would add personnel on an as-needed basis as the proposed Swanston TVSP project builds out, and new facilities would be part of a citywide Police Department Master Plan and would be funded through the City's General Fund.	NA	X	LTS	None required.	NA
PS-7. Development that could occur within the Long-Term Plan area would increase the demand for fire and emergency protection services. However, the increase in demand would not result in the need to construct new, or expand existing, fire facilities.	NA	X	LTS	None required.	NA
PS-8. Development that could occur within the Long-Term Plan area would generate additional students in the TRUSD. However, the increase in enrollment would not result in the need to construct new, or expand existing, school facilities.	NA	X	LTS	None required.	NA
PS-9. Development that could occur within the Long-Term Plan area would result in an increase in demand for library service. This demand for library services is acknowledged by the FMP, which includes funding mechanisms to expand library facilities.	NA	X	LTS	None required.	NA
PS-10. Development that could occur within the Long-Term Plan area would result in the need to construct new, or expand existing, neighborhood-serving parks. However, parks and open space features in the proposed Swanston TVSP project, coupled with the City's impact fees, would meet the increased demand.	NA	X	LTS	None required.	NA

Legend: (S) Significant Adverse Impact (SU) Significant and Unavoidable Impact (PS) Potentially Significant Impact (LTS) Less-than-significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
Cumulative Public Services Impacts					
PS-11. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City, would contribute to cumulative increases in demand for fire protection, police protection, and school facilities.	X	X	LTS	None required.	NA
PS-12. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City, would contribute to cumulative increases in demand for libraries and parks and recreation facilities.	X	X	LTS	None required.	NA
Utilities					
UT-1. Development that could occur within the Strategic Plan area would increase demand for solid waste facilities; however, the increase would not warrant construction or expansion of solid waste facilities.	X	NA	LTS	None required.	NA
UT-2. Development that could occur within the Strategic Plan area would result in the generation and discharge of additional wastewater. While the projected increase in wastewater flows would not require modifications at the SRWTP, the projected increase in wastewater flows would require improvements to the wastewater conveyance system.	X	NA	PS	*UT-2.1 Sewer Study and Necessary Improvements.* Prior to occupancy of new development, project applicants shall perform individual sewer studies to confirm that wastewater lines that serve the project as well as downstream would operate acceptably in accordance with Section 9 of the City Design Standards. If the sewer study determines that a project would result in capacity deficiencies that would not comply with the City's standards, then a corrective program shall be required. The program shall include participation by the project applicant and result in improvements that enable the wastewater collection system to satisfy the City's design standards.	LTS
UT-3. Development that could occur in the Strategic Plan area would increase water demand but would not exceed available sources of water supply. While the projected increase in water demand would not require modifications	X	NA	LTS	None required; however, the following measure would ensure that adequate water supply is provided to new development and adequate water pressure for fire flow conditions.	NA

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
to water supply deliveries or the City's water treatment plants, improvements to the wastewater conveyance system would be necessary.				*UT-3.1 Hydraulic Modeling and Necessary Improvements*. Prior to occupancy of new development, project applicants shall perform hydraulic modeling to confirm that water main sizes are adequate to meet the following City standards: • A maximum velocity of 10 feet per second • Fire flow demands of: 1. 1,500 gallons per minute for single-family 2. 2,000 gallons per minute for multi-family 3. 3,000 gallons per minute for commercial/industrial The hydraulic modeling shall be submitted to the City's Department of Utilities for confirmation and approval. If the hydraulic modeling indicates that improvements to the water distribution system are needed, these improvements will become conditions of project approval. As appropriate, major improvements that benefit a number of property owners may be funded through the City's Capital Improvement Program; otherwise, the Department of Utilities might require project applicants to improve the system on their own.	
UT-4. Development that could occur within the Strategic Plan area would have a less-than-significant impact on electricity generation, transmission, or distribution, because the increase in electrical demand would not warrant construction or expansion of facilities.	X	NA	LTS	None required.	NA
UT-5. Development that could occur within the Strategic Plan area would result in a less-than-significant impact on natural gas production, transmission, or storage, because the increase in natural gas demand would not warrant construction or expansion of facilities.	X	NA	LTS	None required.	NA

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
UT-6. Development that could occur within the Long-Term Plan area would increase demand for solid waste facilities; however, the increase would not warrant construction or expansion of solid waste facilities.	NA	X	LTS	None required.	NA
UT-7. Development that could occur within the Long-Term Plan area would generate additional wastewater flow in the City of Sacramento and SASD service areas. While the projected increase in wastewater flows would not require modifications at the SRWTP, the projected increase in wastewater flows would require improvements to the wastewater conveyance system.	NA	X	PS	Implementation of Mitigation Measure UT-2.1, which calls for preparation of sewer studies and making the necessary improvements to avoid capacity deficiencies, would ensure that adequate wastewater conveyance capacity is provided to new development prior to occupancy. This measure shall be included as a condition of project approval and would reduce wastewater conveyance system impacts to a less-than-significant level	LTS
UT-8. Development that could occur within the Long-Term Plan area would not exceed available sources of water supply. While the projected increase in water demand would not require modifications to water supply deliveries or the City's water treatment plants, improvements to the wastewater conveyance system would be necessary	NA	X	PS	Implementation of Mitigation Measure UT-3.1, which calls for individual project applicants to perform hydraulic modeling and to make necessary improvements to the water distribution system, would ensure that adequate water supply is provided to new development prior to occupancy. The mitigation measure would also ensure that adequate water pressure would be provided under fire flow conditions. As a result, this measure would ensure that impacts remain less than significant.	LTS
UT-9. Development that could occur within the Long-Term Plan area would increase the demand for electricity and natural gas services. The increase would require consideration of new or expanded service facilities at some point in the long-range future.	NA	X	LTS	None required.	NA
Cumulative Utilities Impacts					
UT-10. Solid waste generated by the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the Sacramento Regional County Solid Waste Authority service area, would have a less-than-significant cumulative impact because it would not exceed landfill capacity.	X	X	LTS	None required.	NA

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
UT-11. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the SRWTP service area, would not increase wastewater flows that could exceed treatment capacity at the SRWTP and/or wastewater collection infrastructure.	X	X	LTS	None required.	NA
UT-12. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City's service area, would contribute to cumulative increases in water demand throughout the City; however, the impact would be less than significant since there are adequate water supplies.	X	X	LTS	None required.	NA
UT-13. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City's service area, would contribute to cumulative demand on water supply treatment and distribution facilities throughout the City that exceeds the estimated capacity of the water treatment plants and sustainable withdrawal from the groundwater.	X	X	PS	The following measures are options to reduce cumulative water demand. Generally, these options would allow the City a degree of flexibility to implement appropriate mitigations in sequence or in combination. *UT-13.1 Maximum Day Demand Conservation in the Proposed Swanston TVSP Project*. The City's 2006 UWMP presents three future demand projection scenarios spread over a 25-year planning horizon, they include a "no conservation" scenario, a 7.5 percent conservation scenario, and a 25.6 percent conservation scenario. Assuming that as a mitigation measure the Strategic Plan area could achieve 7.5 percent conservation in average day demands, this would roughly save approximately an annual average of 7,189 gpd and reduce average annual demands to 99.44 AFA down from the calculated demand of 107.9 AFA for a savings of 8.06 AFA. The conservation savings achieved in the Swanston TVSP project area would not reduce the maximum day demands enough to overcome the 2020 citywide capacity deficit;	LTS

Legend: (S) Significant Adverse Impact (SU) Significant and Unavoidable Impact (PS) Potentially Significant Impact (LTS) Less-than-significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				therefore, this ultimately is a citywide issue and the City would be need to the address future potential maximum day demand deficit on a larger scale to reduce the potentially significant cumulative impact to a less-than-significant level. *UT-13.2 Diversion and WTP as Cost-sharing Partner in Sacramento River Water Reliability Study*. The City is a partner on the Sacramento River Water Reliability Study, which is investigating alternatives for an additional 365 cfs (235 MGD) diversion on the Sacramento River and 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. Upon implementation of this new diversion and WTP plant project, the potentially significant cumulative impact would be reduced to a less-than-significant cumulative impact. *UT-13.3 City of Sacramento Only Sacramento River Diversion and WTP*. Another mitigation option would be for the City to be the sole operator of the second Sacramento River diversion and Elverta Road WTP project. Under this option, the diversion and WTP would be scaled down to provide the additional capacity needed to meet only the City's maximum day demands when diversion limitations apply at FWTP under the City WFA PSA. As presented in the SRWRS, the City would most likely construct capacity to divert roughly 235 cfs and could treat up to 145 MGD at the new WTP. This new diversion and WTP would avoid any future maximum day capacity deficits through 2030 and beyond. This was presented as one of the alternatives in the SRWRS; therefore, it is reasonable to assume this as a feasible mitigation measure. Upon implementation of this	

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				diversion and WTP project, the potentially significant cumulative impact would be reduced to a less-than-significant cumulative impact. *UT-13.4 Increased Groundwater Pumping*. The City maintains 32 wells for potable use; 23 wells are actively used to supply drinking water. The total capacity of the wells is approximately 22 MGD and producing up to 24,000 AFA. In 2000 - 2005 the City's annual average groundwater pumping was 22,992 acre-ft. The average annual demand of development that could occur within the Strategic Plan area is estimated at 0.05 MGD. In comparison to citywide demands of 325 MGD in 2020 and up to 402 MGD in 2030 above-Hodge conditions, the proposed Swanston TVSP project's demand contribution is less than considerable. Nonetheless, under a dry year scenario, the project would increase demand on the City's water system infrastructure. In an effort to minimize the project's demand, the project could add new wells to the City's groundwater system paid for through developer or other water connection fees. Assuming a new groundwater well could pump roughly 1,000 gpm or 1.44 MGD, one new well would be needed to meet the project's peak day demands and offset the demand placed on the City's water system. Furthermore, each new project would have to pay their fair share to fund new groundwater wells to offset project-specific demands. The City's water supply infrastructure is designed to serve the entire citywide service area and new infrastructure ties into the existing system to meet both average and maximum day demands. The City supplements the surface water capacity by pumping groundwater to meet the maximum day demands. If no surface water diversion and treatment capacity is	

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
				added by 2025, the City would need to more than double the peak day pumping rate to meet customer demands. This could not be achieved with the current well capacities and new wells would have to be installed. Upon implementation of this mitigation measure, the potentially significant cumulative impact would be reduced to a less-than-significant cumulative impact. This analysis assumes that additional wells would be installed in the SGA groundwater area.	
UT-14 Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City of Sacramento, could exceed the electrical or natural gas supply and transmission capabilities. However, the continued development of resources and facilities by SMUD and PG&E in response to energy demands makes this a less than significant cumulative impact.	X	X	LTS	None required.	NA
Transportation					
TR-1. Development that could occur within the Strategic Plan area would have a less-than-significant impact on study intersections in the Swanston TVSP project area.	X	NA	LTS	None required.	NA
TR-2. Development that could occur within the Strategic Plan area would have a less-than-significant effect on study roadway segments in the Swanston TVSP project area.	X	NA	LTS	None required.	NA
TR-3. Development that could occur within the Strategic Plan area would not adversely affect the Business-80 ramps.	X	NA	LTS	None required.	NA

Legend: (S) Significant Adverse Impact (PS) Potentially Significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable
(SU) Significant and Unavoidable Impact (LTS) Less-than-significant Impact

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
TR-4. Development that could occur within the Strategic Plan area would expand bicycle access within the Swanston TVSP project area. As a result, proposed improvements within the Strategic Plan area would be expected to have beneficial effects on bicycle circulation.	X	NA	B	None required.	NA
TR-5. Development that could occur within the Strategic Plan area would improve pedestrian facilities throughout the Swanston TVSP project area. As a result, the proposed improvements within the Strategic Plan area would be expected to have a beneficial effect on pedestrian circulation and accessibility.	X	NA	B	None required.	NA
TR-6. Development that could occur within the Strategic Plan area would increase the potential ridership for bus and LRT service. The increased demand on Sacramento Regional Transit services would be less than significant.	X	NA	LTS	None required.	NA
TR-7. Development that could occur within the Strategic Plan area would not be expected to result in a parking impact, since existing parking standards for the proposed uses would remain in effect.	X	NA	LTS	None required.	NA
TR-8. Development that could occur within the proposed Strategic Plan area would not have any effect on heavy rail operation.	X	NA	NI	None required.	NA
Cumulative Traffic Impacts					
TR-9 Development that could occur within the Strategic Plan area, in combination with other growth in the plan area vicinity, would have a less-than-significant cumulative intersection LOS impact.	X	NA	LTS	None required.	NA
TR-10. Development that could occur within the Strategic Plan area, in combination with other growth in the plan area vicinity, would have a less-than-significant cumulative roadway segment LOS impact	X	NA	LTS	None required.	NA

Legend: (S) Significant Adverse Impact (SU) Significant and Unavoidable Impact (PS) Potentially Significant Impact (LTS) Less-than-significant Impact (NI) No Impact (B) Beneficial (NA) Not Applicable

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
TR-11. Development that could within the Strategic Plan area, in combination with other growth in the plan area vicinity, would have a less-than-significant cumulative impact on freeway ramps.	X	NA	LTS	None required.	NA
TR-12. Development that could occur within the Strategic Plan area, in combination with other growth in the plan area vicinity, would not adversely affect pedestrian, bicycle, or transit circulation.	X	NA	LTS	None required.	NA
TR-13. Development that could occur within the Long-Term Plan area would have a potentially significant impact on study intersections in the Swanston TVSP project area.	X	NA	PS	The City through its development and environmental review processes will continue to evaluate the conformance of future development applications with the proposed Swanston TVSP project, identify the potential impacts stemming from the proposed development, and impose fees, mitigation measures, or other conditions of project approval, as necessary, to reduce the traffic impacts of future development.	LTS
TR-14. Although traffic on the study roadway segments within the Swanston TVSP project area is projected to increase as a result of the development that could occur within the Long-Term Plan area, this development would have a less-than-significant effect on these study roadway segments.	NA	X	LTS	None required.	NA
TR-15. Development that could occur within the Long-Term Plan area would not adversely affect the Business-80 ramps.	NA	X	LTS	None required.	NA
TR-16. Development that could occur within the Long-Term Plan area would expand bicycle access throughout the Swanston TVSP project area. As a result, proposed improvements under the proposed Swanston TVSP project would be expected to have beneficial effects on bicycle circulation	NA	X	B	None required.	NA
TR-17. Development that could occur within the Long-Term Plan area would improve pedestrian facilities throughout the Swanston TVSP project area. As a result, the plan would be expected to have a beneficial effect on pedestrian circulation and accessibility.	NA	X	B	None required.	NA

Legend: (S) Significant Adverse Impact; (SU) Significant and Unavoidable Impact; (PS) Potentially Significant Impact; (LTS) Less-than-significant Impact; (NI) No Impact; (B) Beneficial; (NA) Not Applicable

Table 3-1
Summary of Impacts and Mitigation Measures

Impacts	Applicability to Strategic Plan Area?	Applicability to Long-Term Plan Area?	Impact Significance Without Mitigation	Mitigation/Improvement Measures	Impact Significance With Mitigation
TR-18. Development that could occur within the Long-Term Plan area would increase the potential ridership for bus and LRT service. The increased demand on Sacramento Regional Transit services would be less than significant.	NA	X	LTS	None required.	NA
TR-19. Development that could occur within the Long-Term Plan area would not be expected to result in a parking impact, since existing parking standards for the proposed uses would remain in effect.	NA	X	LTS	None required.	NA
TR-20. Development that could occur within the Long-Term Plan area would not have an effect on heavy rail operation.	NA	X	NI	None required.	NA

Legend: (S) Significant Adverse Impact; (SU) Significant and Unavoidable Impact; (PS) Potentially Significant Impact; (LTS) Less-than-significant Impact; (NI) No Impact; (B) Beneficial; (NA) Not Applicable

Chapter 4
Land Use Consistency and Compatibility

4.1 INTRODUCTION

This chapter of the EIR provides an overview of the land use and planning effects that may result from development of the proposed Swanston Station Transit Village Specific Plan (Swanston Station Specific Plan). Existing and planned land uses in and adjacent to the Swanston Station Transit Village Specific Plan area (Swanston TVSP project area or Specific Plan area), including General Plan and Community Plan land use designations and zoning are described. Section 15125 of the CEQA Guidelines states that the EIR shall discuss "any inconsistencies between the proposed project and applicable general plans and regional plans." Potential inconsistencies between the Swanston Station Specific Plan and the City of Sacramento General Plan, the Arden Arcade and North Sacramento Community Plans, the City's Comprehensive Zoning Ordinance, and the Sacramento Area Council of Governments (SACOG) Blueprint are evaluated in this chapter.

An EIR may provide information regarding land use, socio-economic, population, employment, or housing issues, but CEQA does not recognize these issues as direct physical impacts on the environment. A direct physical change in the environment is a physical change in the environment that is caused by and immediately related to the project (CEQA Guidelines Section 15064(d)(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 not addressed in this chapter, but in the appropriate technical sections in Chapter 6 of this EIR.

The City received one comment related to land use consistency and compatibility in response to the Notice of Preparation (see Appendix A). The United Services Automobile Association (USAA) requested that the EIR acknowledge existing plans and agreements that affect its property within the Swanston TVSP project area, including an adopted Planned Unit Development (PUD) and Regional Transit agreement. The USAA requested that the EIR state that the environmental analysis assumes development of the USAA site in accordance with the PUD, that the terms and conditions of the Swanston Pedestrian Bridge and Sidewalk Access Easement Agreement remain in full force and effect, and that the EIR analysis include an alternative of locating the pedestrian bridge at Silica Avenue to improve public access, safety, and avoid bisection of a parcel. These comments are addressed in this chapter.

4.2 SETTING

Project Area and Regional Context

The Swanston TVSP project area is located approximately three miles northeast of Downtown Sacramento. The Swanston TVSP project area encompasses approximately 230 acres and is roughly

bounded by El Camino Avenue on the north, Arden Way on the south, and the Capital City Freeway (Business 80) on the east. Erickson Street defines the western edge of the Swanston TVSP project area.

Existing land uses within the Swanston TVSP project area include light industrial, warehouses, retail and office commercial, single-family residential, multifamily residential in mobile home parks and apartments, and vacant parcels (see Figure 4-1). The Sacramento Regional Transit and Union Pacific (UP) rail lines divide the Swanston TVSP project area into two distinct subareas. The eastern portion of the Swanston TVSP project area includes several large office buildings and commercial buildings (USAA Insurance, Hilton Hotel, Extended Stay America, and California Plaza office building). The west side of the Swanston TVSP project area includes relatively low-density single-story residential uses, multifamily residential, commercial/industrial buildings, and vacant parcels.

Portions of the Swanston TVSP project area are within the Dixieanne neighborhood, the South Hagginwood neighborhood, the Ben Ali neighborhood, the Erickson Industrial Park, and the North Sacramento Redevelopment Project Area that was adopted by the Sacramento Housing & Redevelopment Agency (SHRA) in 1992. Other primary land uses surrounding the Swanston TVSP project area include destination retail and large employment centers at Arden Fair and Point West, large-scale industrial businesses in the Canon Industrial Park, and well-established residential homes in the Woodlake neighborhood.

4.3 APPLICABLE PLANS AND POLICIES

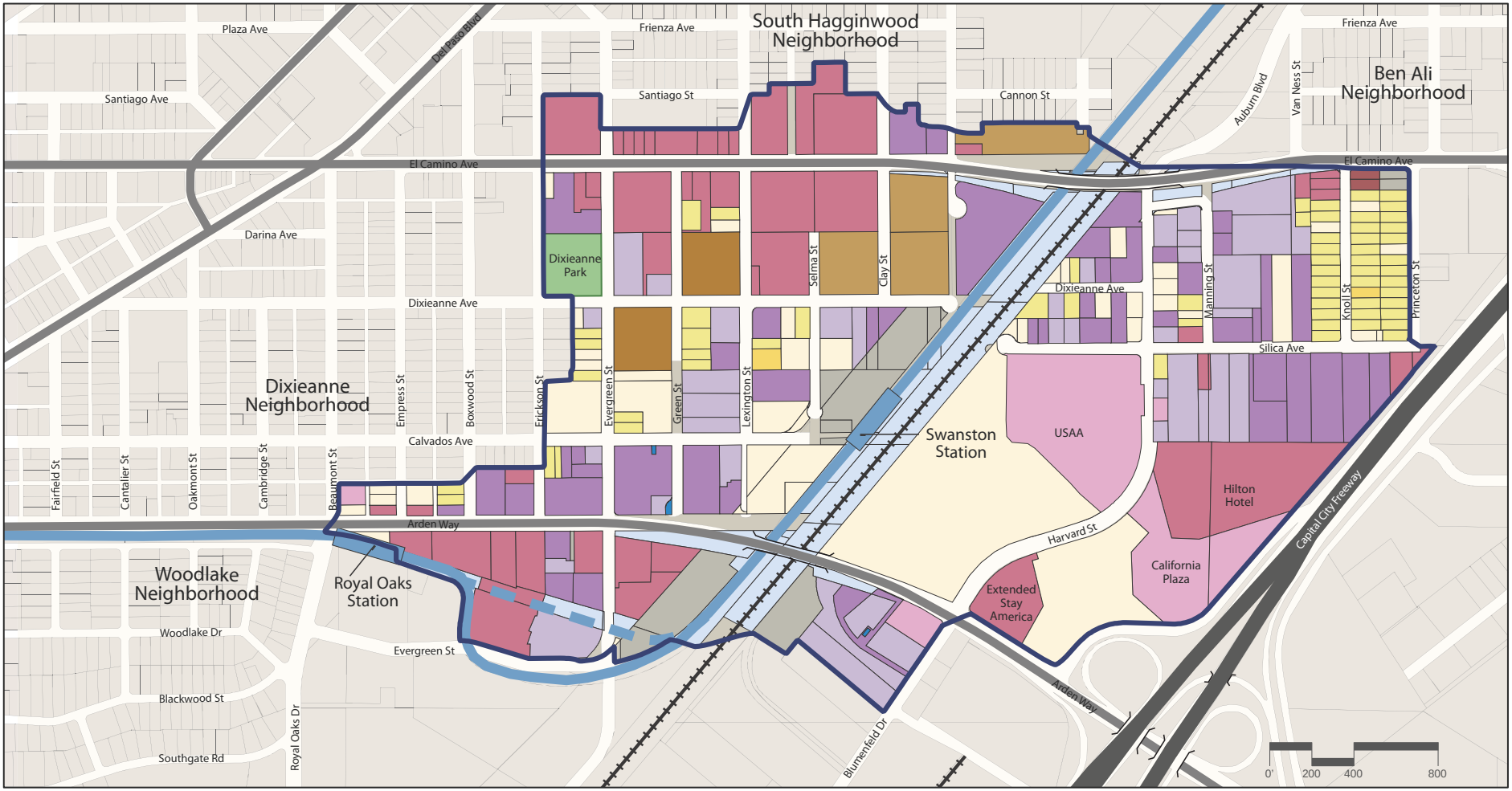
City of Sacramento General Plan

The 1988 City of Sacramento General Plan is a 20-year policy guide for physical, economic, and environmental growth and renewal of the City. Nine elements comprise the General Plan, each of which includes goals and policies intended to guide development of the City. Land use goals and policies from the General Plan that are applicable to the Swanston Station Specific Plan are listed below.

Residential Land Use Element

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

Policy 5. Continue redevelopment and rehabilitation efforts in existing target areas and identify other areas experiencing blighting conditions. Explore methods to expand public or private rehabilitation efforts in potential improvement areas and in areas of opportunity or reuse identified in the General Plan (Maps 4 and 6 of the General Plan include the area around the transit stations in the Swanston TVSP project area as an infill target area and Map 7 of the General Plan includes the portion of the Swanston TVSP project area west of the railroad tracks as an area of opportunity for development or reuse.



Project Area Boundary
Commercial - Office
Commercial - Retail
Commercial - Private Club
Residential- Single Family
Residential- Duplex
Residential - Mobile Home Park
Residential - Low Rise Apartment
Industrial - Light
Industrial - Warehouse
Park - Public
Parking
Utility ROW
Regional Transit ROW
Vacant /Under Developed
Major Highway/Freeway
Major Road/Arterial
RT Light Rail Route
Planned Lumberjack LRT Realignment
LRT Platform
Union Pacific Railroad
Bridge

NORTH
SCALE IN FEET

***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **4-1**
Existing Land Uses

Policy 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.

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

Policy 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.

Policy 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.

Policy 6. Continue to support redevelopment and rehabilitation efforts that add new and reconditioned units to the housing stock while eliminating neighborhood blight and deterioration.

Commerce and Industry Land Use Element

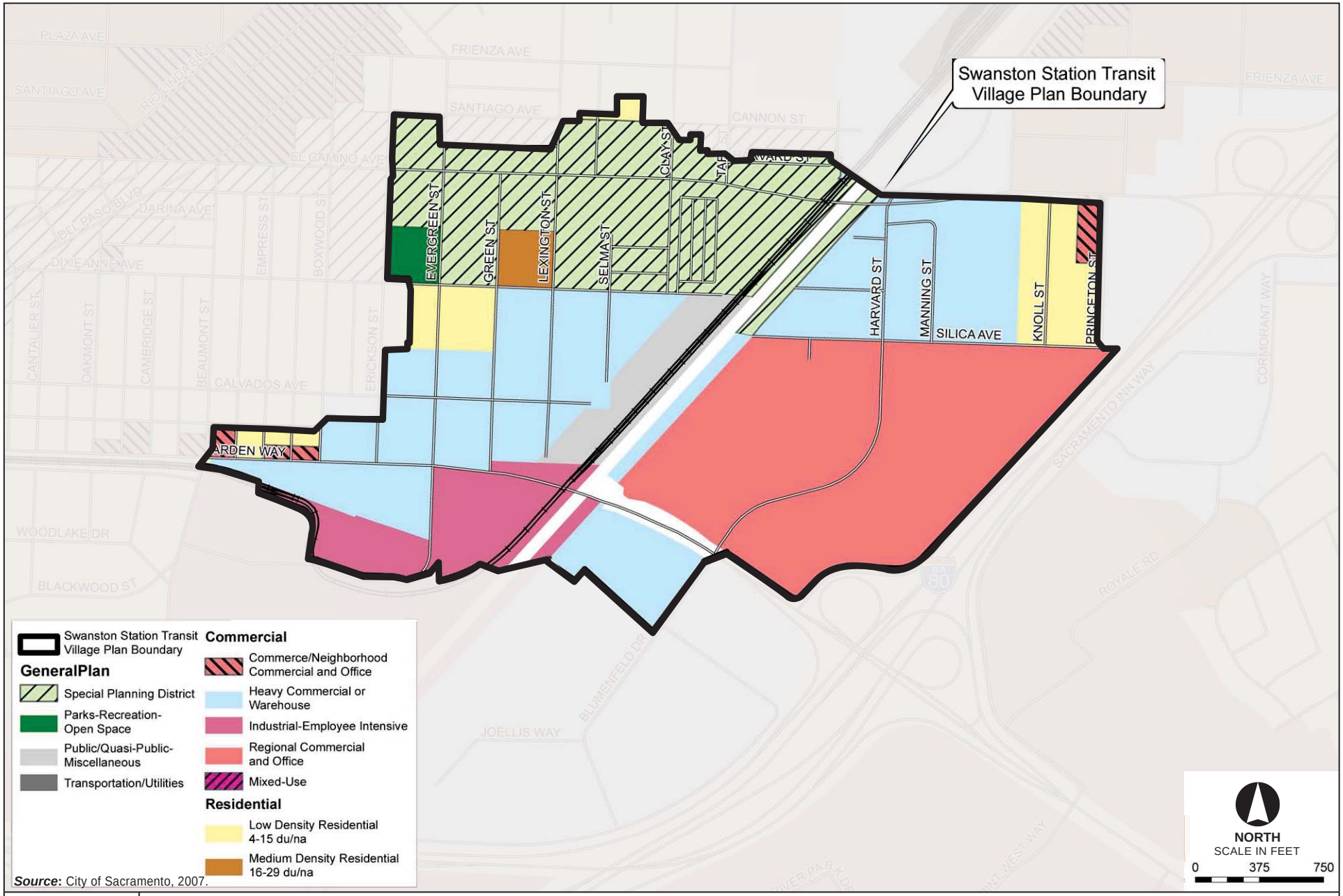
Goal A. Promote Transit Oriented Development (TOD) within ¼ mile of existing and future light rail transit (LRT) stations.

Policy 1. Actively support and encourage mixed use commercial, office, and residential development in identified areas of opportunity around light right stations by establishing minimum development standards, potential financial incentives, and priority processing or streamlined review. (Map 6 of the General Plan includes the area around the transit stations in the Swanston TVSP project area as infill target areas.)

The City of Sacramento General Plan land use designations for the Swanston TVSP project area are Commerce/Neighborhood Commercial and Office, Regional Commercial and Office, Heavy Commercial/Warehouse, Industrial-Employee Intensive, Low Density Residential, Medium Density Residential, Parks-Recreation-Open Space, Special Planning District, and Public/Quasi-Public-Miscellaneous. Existing land use designations are shown in Figure 4-2.

The proposed City of Sacramento General Plan land use designations for the Swanston TVSP project area are Mixed Use and Residential Mixed Use (see Figure 4-3). These are existing General Plan land use designations and are defined below.

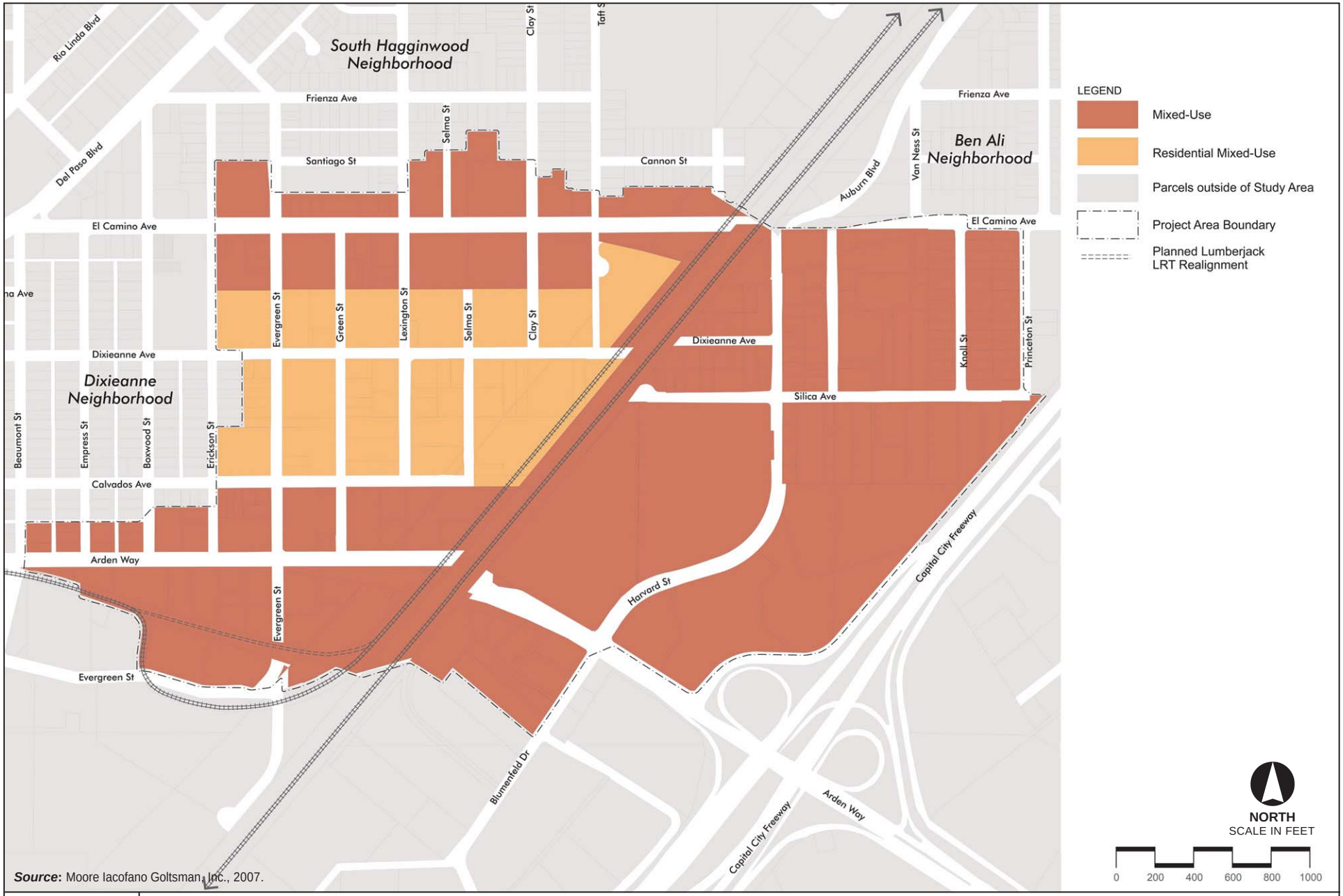
Mixed Use: Includes a mixture of office, commercial, open space, and medium and high density residential uses. In some larger, more intense development, light manufacturing and research oriented activities may be appropriate. These uses are more ideally suited for land within the Central City, or adjacent to a high activity node along a light rail transit line or



***Source*:** City of Sacramento, 2007.

FIGURE **4-2**

Existing General Plan Land Use Designations



***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **4-3**

Proposed General Plan Land Use Designations

freeway corridor. Minimum average target density for mixed use projects with housing 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.

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 that 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:

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

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

Arden Arcade and North Sacramento Community Plans

Arden Arcade Community Plan. This Community Plan was originally developed in 1980 by the County, and addresses development in a 21-square mile study area in the north-central portion of Sacramento County, between the American River and Interstate 80. This County-prepared plan does not affect the Swanston TVSP project area. However, the City of Sacramento recognizes an Arden Arcade community that encompasses the County community plan area as well as lands within the City of Sacramento. This larger 33-square-mile plan area encompasses 5.7 square miles of incorporated lands, including portions of the Swanston TVSP project area east of the railroad tracks. There are no currently adopted policies for development in the City's Arden Arcade Community Plan area other than the General Plan land use designations (see Figure 4-2). Accordingly, the consistency of the Swanston Station Specific Plan with the Arden Arcade Community Plan later in this chapter is addressed in the project's consistency with the City of Sacramento General Plan.

North Sacramento Community Plan. The North Sacramento Community Plan area is located in the northeastern most part of the City of Sacramento. The plan area boundary encompasses about 13 square miles. The plan area is bounded by the city limits on the north, the American River on the south, Natomas East Main Drainage Canal on the west, and Auburn Boulevard, Union Pacific Rail Line, and McClellan Business Park on the east. The western portion of the Swanston TVSP project area is within the North Sacramento Community Plan area. The purpose of the 1984 North Sacramento Community Plan is to serve as a development guide to be used by the public and private sector when planning physical improvements in North Sacramento. The land use designations are the same as those presented in the City General Plan and shown in Figure 4-2. Applicable North Sacramento Community Plan goals related to residential, commercial, and office land uses are listed below.

Land Use Element

Residential Land Use Goals

- Accommodate the growth projected for North Sacramento by the City General Plan in an orderly and efficient manner, one which enhances the existing attractive features of the community.
- Revitalize and stabilize residential areas showing signs of decline.

Commercial Land Use Goals

- Provide for a range of commercial uses which meet daily needs and are within convenient access to North Sacramento residents.
- Upgrade commercial areas by eliminating land use conditions that contribute to blight.
- Encourage land uses which will enhance economic vitality of the community.

Office Land Use Goals

- Increase office development on a scale that contributes to the City's employment base.

North Sacramento Redevelopment Plan

Although North Sacramento was incorporated into the City of Sacramento in 1964, it remained separate from the rest of the City. The City adopted a redevelopment plan in 1992. The redevelopment plan area extends beyond the Swanston TVSP project area to the north, west, and south; however, the portion of the Swanston TVSP project area east of the railroad tracks is not within the redevelopment plan area.

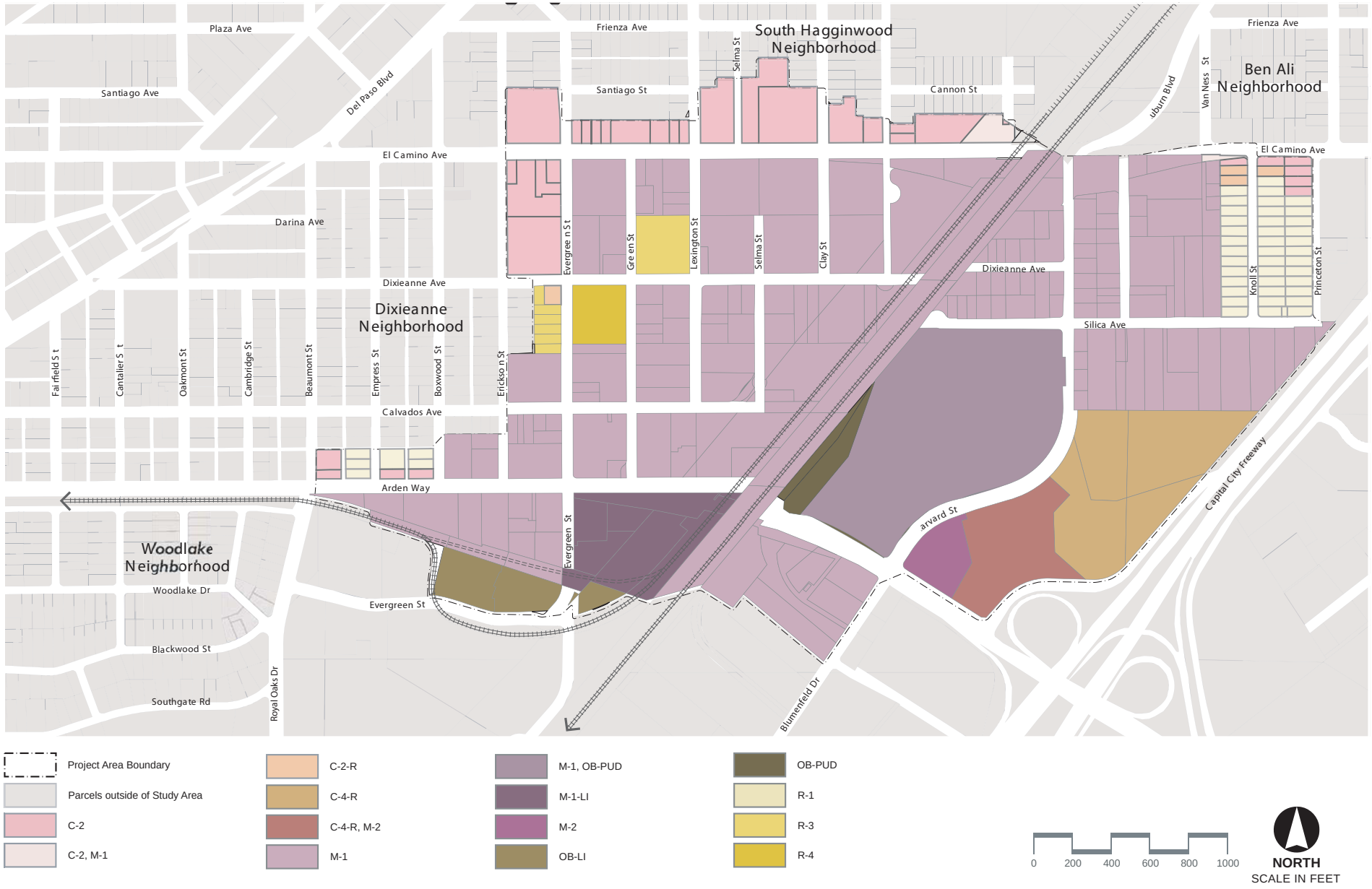
The Redevelopment Plan seeks to implement the General Plan. As such, it does not propose land uses or guidelines for development different than the policies described above from the General Plan or the Community Plan. Rather, the Redevelopment Plan identifies implementation programs to help achieve the above goals. Such programs include funds for physical improvements in the project area such as housing assistance, commercial property rehabilitation, parking improvements, key community facilities and infrastructure, and property acquisition of key sites. In addition, the Redevelopment Agency works with other public agencies such as Sacramento Regional Transit District to obtain development proposals for mixed use transit oriented development around the five light rail stations in the redevelopment plan area.

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 (Section 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.

The Swanston TVSP project area is currently zoned General Commercial Zone (C-2), Heavy Commercial Zone (C-4), Shopping Center Zone (SC), Office Building Zone (OB), Light Industrial Zone (M-1), Heavy Industrial Zone (M-2), Industrial Zone (M-1S) Standard Single Family Zone (R-1), Single Family Alternative Zone (R-1A), Multi-Family Zone (R-2A), Multi-Family Zone (R-2B) Multi-Family Zone (R-3), Multi-Family Zone (R-4), and Agricultural Zone (A). Existing zoning is shown in Figure 4-4.

The Swanston Station Specific Plan proposes modification to zoning in the Swanston TVSP project area. The Swanston Station Specific Plan would rezone about 71 percent of the parcels in the Swanston TVSP project area to either of two existing districts: Residential Mixed Use Zone - Transit



***Source*:** City of Sacramento, 2007.

FIGURE **4-4**

Existing Zoning

Overlay Zone (RMX-TO) and General Commercial Zone - Transit Overlay Zone (C-2-TO). The remaining parcels would retain their current zoning and are located in areas where the use is unlikely to change or are already developed with a use that appears economically viable and would not likely be subject to change. A majority of these remaining parcels are zoned Light Industrial Zone (M-1) but also include parcels zoned Light Industrial Zone - Office Building Zone - PUD (M-1-OB-PUD), Light Industrial Zone - Labor Intensive Overlay Zone (M-1-LI), Heavy Industrial Zone (M-2), Office Building Zone-Labor Intensive Overlay Zone (OB-LI), and Office Building Zone- Planned Unit Development (OB-PUD). The zoning districts proposed to be applied to the Swanston TVSP project area (see Figure 4-5) are defined below.

RMX Residential Mixed Use Zone: This is a mixed-use zone. The zone permits multifamily residential, office and limited commercial uses in a mixture established for the area through a special planning district or adopted location standards. Minimum land area per unit is 1,200 square feet, 36 units per acre. Maximum height is 35 feet.

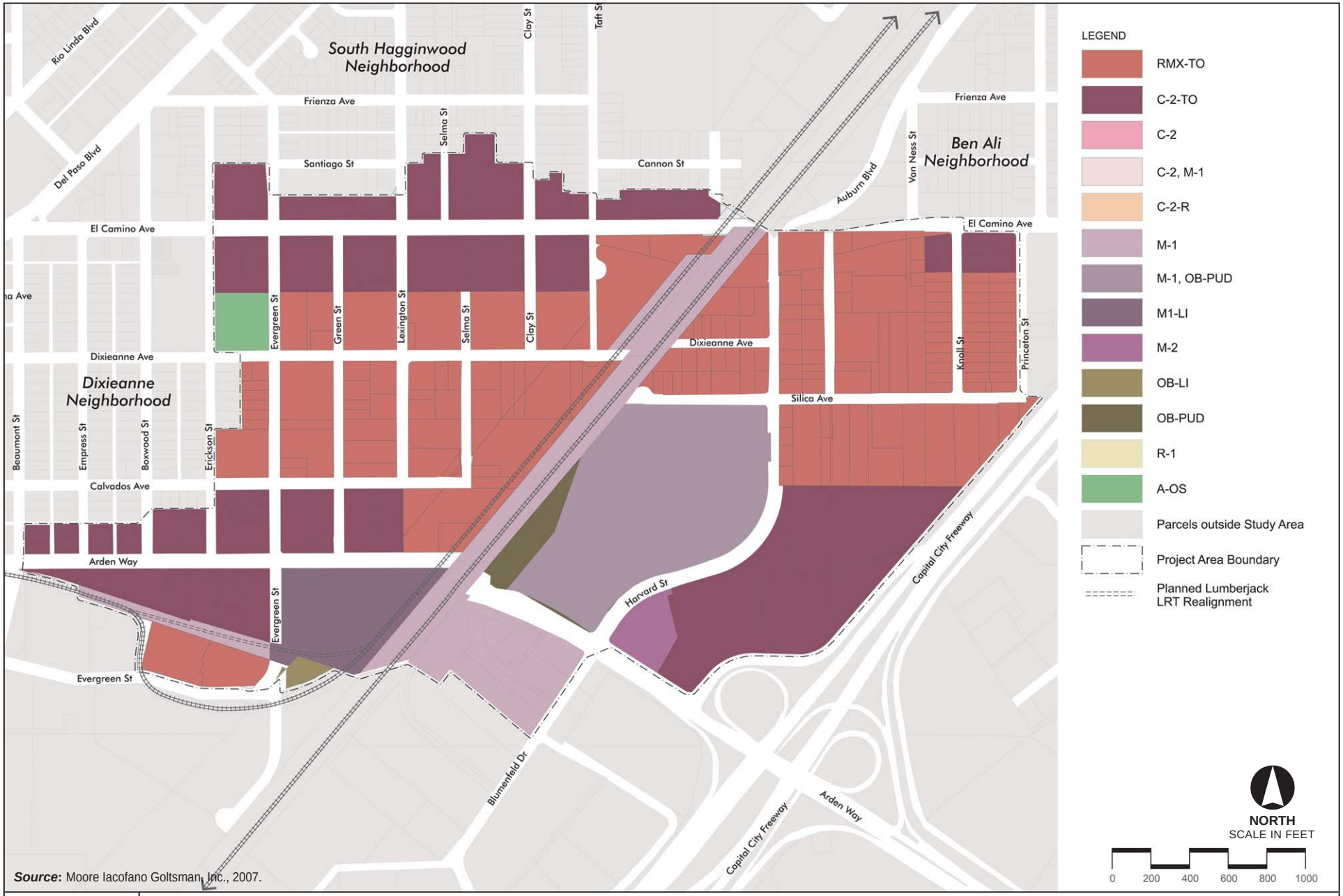
C-2 General Commercial Zone: This is a general commercial zone which provides for the sale of commodities, or performance of services, including repair facilities, small wholesale stores or distributors, and limited processing and packaging. The maximum height within 100 feet of residential is 35 feet; greater than 100 feet to residential the maximum height is 45 feet. Parking ratio for retail 1 space per 250 gross square feet, restaurant 1 space per 3 seats, general commercial 1 space per 500 gross square feet. There is no maximum lot coverage. Buildings over 40,000 square feet require special permit approval. Buildings over 20,000 square feet in the C-2 (NC) zone require a special permit.

M-1 Light Industrial Zone: This zone permits most fabricating activities, with the exception of heavy manufacturing and the processing of raw materials. The maximum height is 75 feet; there is no maximum lot coverage. Parking ratio for warehousing uses is 1 space per 1000 square feet gross floor area, and no more than 1 space per 500 square feet of gross floor area.

M-2 Heavy Industrial Zone: This zone permits the manufacture or treatment of goods from raw materials. Maximum height is 75 feet. There is no maximum lot coverage. The parking ratio for warehousing uses is no less than 1 space per 1000 square feet gross floor area and no more than 1 space per 500 square feet of gross floor area.

OB Office Building Zone: This is primarily for development of business office centers, and institutional or professional buildings. All new office buildings require plan review approval by the city. Maximum height 35 feet, there is no maximum lot coverage. The parking ratio for offices located outside the Central City is a minimum of no less than 1 space to 400 gross square feet, and a maximum of no more than 1 space to 275 gross square feet.

TO Transit Overlay Zone: This overlay zone allows a mix of moderate to high density residential and nonresidential uses, by right, to promote transit ridership within walking distance of an existing or proposed light rail transit station. The district is intended to promote



***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **4-5**

Proposed Zoning

coordinated and cohesive site planning and design that maximizes land use transit supportive development, to create continuity of pedestrian-oriented streetscapes and activities throughout the district and to encourage pedestrian, bicycle and transit rather than exclusive automobile access to employment, services and residences. This overlay zone provides a streamlined approval process, permits increased heights, densities and intensities over the base zone for projects with a residential component and encourages housing and mixed use projects. The district also restricts certain uses that do not support transit ridership.

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.

Labor Intensive Overlay Zone: Applies to areas where a high density of employees per acre is desired to maximize use of public facilities and services such as freeways and light rail transit stations, or where a higher concentration of people is desired for economic revitalization.

The intent of the proposed zoning configuration is to provide maximum flexibility for new development while respecting the existing residential context west of the Sacramento Regional Transit and Union Pacific (UP) tracks and the employment-oriented context east of the tracks proposed in the General Plan.

Sacramento Area Council of Governments Blueprint

The Sacramento Area Council of Governments (SACOG) conducted several local community workshops to help determine how the Sacramento region should grow through the year 2050. The result of these efforts was the SACOG Blueprint, a transportation and land use analysis suggesting how cities and counties should grow based on these smart growth principles: provide a variety of transportation choices; offer housing choices and opportunities; take advantage of compact development; use existing assets; provide mixed land uses; preserve open space, farmland, natural beauty, through natural resources conservation; and encourage distinctive, attractive communities with quality design. In 2004, the SACOG Board of Directors adopted the "Preferred Blueprint Scenario." The Blueprint does not approve or prohibit growth in the region, but suggests general land uses and locations for growth; it is not a policy document. It should be interpreted and used as a concept-level illustration of the growth principles. It was developed with parcel-level data and analysis to help ensure that the growth concepts were being applied in a realistic manner; however, it is not intended to be applied or implemented in a literal, parcel-level manner.

The growth principles that serve as the underpinnings of the Blueprint scenario are similar to the Smart Growth Principles adopted by the City in 2001. The Blueprint growth principles are identified below, following by the corresponding Sacramento Smart Growth Principle(s) in parentheses.

1. **Transportation Choices.** Developments should be designed to encourage people to sometimes walk, ride bicycles, ride the bus, ride light rail, take the train or carpool. Use of Blueprint growth concepts for land use and right-of-way design will encourage use of these modes of travel and the remaining auto trips will be, on average, shorter. (Smart Growth Principle 8)

2. **Mixed-Use Developments.** Buildings homes and shops, entertainment, office and even light industrial uses near each other can create active, vital neighborhoods. This mixture of uses can be either in a vertical arrangement (mixed in one building) or horizontal (with a combination of uses in close proximity). These types of projects function as local activity centers, contributing to a sense of community, where people tend to walk or bike to destinations and interact more with each other. Separated land uses, on the other hand, lead to the need to travel more by auto because of the distance between uses. Mixed land uses can occur at many scales. Examples include: a housing project located near an employment center, a small shopping center located within a residential neighborhood, and a building with ground floor retail and apartments or condominiums on the upper floor(s). (Smart Growth Principles 1 and 5)

3. **Compact Development.** Creating environments that are more compactly built and use space in an efficient but aesthetic manner can encourage more walking, biking, and public transit use, and shorten auto trips. (Smart Growth Principles 1, 4, and 7)

4. **Housing Choice and Diversity.** Providing a variety of places where people can live – apartments, condominiums, townhouses, and single-family detached homes on varying lot sizes – creates opportunities for the variety of people who need them: families, singles, seniors, and people with special needs. This issue is of special concern for the people with very low-, low-, and moderate-income, often our teachers, other public employees and professionals, as well as retail employees, service workers and other people for whom finding housing close to work is challenging. By providing a diversity of housing options, more people have a choice. (Smart Growth Principle 3)

5. **Use of Existing Assets.** In urbanized areas, development on infill or vacant lands, intensification of the use of underutilized parcels (for example, more development on the site of a low-density retail strip shopping center), or redevelopment can make better use of existing public infrastructure. This can also include rehabilitation and reuse of historic buildings, denser clustering of buildings in suburban office parks, and joint use of existing public facilities such as schools and parking garages. (Smart Growth Principles 2 and 5)

6. **Quality Design.** The design details of any land use development - such as the relationship to the street, setbacks, placement of garages, sidewalks, landscaping, the aesthetics of building design, and the design of the public right-of-way (the sidewalks, connected streets and paths, bike lanes, the width of streets) - are all factors that can influence the attractiveness of living in a compact development and facilitate the ease of walking and biking to work or neighborhood services. Good site and architectural design is an important factor in creating a sense of community and a sense of place. (Smart Growth Principles 1 and 5)

7. **Natural Resources Conservation.** This principle encourages the incorporation of public use open space (such as parks, town squares, trails, and greenbelts) within development projects, over and above state requirements; along with wildlife and plant habitat preservation, agricultural preservation and promotion of environment-friendly practices such as energy efficient design, water conservation and stormwater management, and shade trees to reduce the ground temperatures in the summer. In addition to conserving resources and protecting species, this principle improves overall quality of life by providing places for everyone to enjoy the outdoors with family outings and by creating a sense of open space. (Smart Growth Principle 11)

4.4 LAND USE EVALUATION

Compatibility with Existing and Adjacent Land Uses

Land use compatibility is defined by how well neighboring land uses co-exist. Conflicts occur when the operational activities and appearance of one use (i.e., daily trips, number and type of vehicles, lighting, noise, indoor versus outdoor activities and storage, landscaping, etc.) detract from the activities and use of the adjoining property or properties. As noted at the beginning of this chapter, these physical effects are described elsewhere in this EIR (see Chapter 6). In general, properties that are similarly zoned are expected to have similar levels of activities and would not be expected to have external effects on one another that result in land use incompatibilities. On the other hand, an industrially zoned area next to a single-family zoned area may result in impacts that disturb the residential area and thus result in land use impacts.

The Strategic Plan area would be rezoned with the Transit Overlay Zone, which imposes development regulations in addition to development regulations included in the underlying RMX and C-2 zones. These additional regulations are intended to promote coordinated and cohesive site planning and design and maximize transit supportive development. They recognize the importance of complementary residential and commercial uses, creating alternative modes of travel, and conforming to a transit village plan. City Planning Director review is required for all development within the TO. Given these additional regulations and reviews, the City would have future opportunities to avoid or minimize potential land use conflicts within the TO zones and with adjoining land uses.

The following evaluation describes the potential conflicts between proposed development within the Strategic Plan area and the surrounding existing uses and between proposed development in the Long-Term Plan area and the surrounding existing uses. This discussion is not intended to supersede the more detailed assessment of physical effects addressed in the Chapter 6 of this EIR, but is intended to provide complementary information to assist the City decision makers and the public understand the proposed changes anticipated under the Swanston Station Specific Plan.

Strategic Plan Area

Existing land uses within the Swanston TVSP project area include industrial, commercial, single-family residential, multi-family residential, and vacant parcels. The west side of the Swanston TVSP project

area includes relatively low-density single-story residential uses, commercial/industrial buildings, and vacant parcels. More specifically, the seven-block Strategic Plan area at the far western periphery of the project area is generally bound by El Camino Avenue to the north, Green Street to the east, the light tracks proposed to be realigned by Sacramento Regional Transit to the south, and Erickson Street to the west. Figure 4-1 shows that existing land uses within the Strategic Plan area are readily grouped into four distinct east-west "bands," as described below. This assessment is based largely on a review of Figure 4-1 and Figure 4-5 and considers the consistency between existing land uses in the Strategic Plan area and the proposed zoning, as well as the land use compatibility between the proposed zoning and surrounding land uses.

El Camino Avenue to Dixieanne Avenue. The northernmost band between El Camino Avenue and Dixieanne Avenue is predominantly light industrial and warehousing and retail uses, with Dixieanne Park occupying the southwestern quadrant. The existing zoning for this two-block band is C-2 and M-1. The industrial and commercial uses are characterized by large floorplates and heavy truck activity, uses that are not particularly compatible with the adjacent Dixieanne Park or the nearby residential areas. These existing uses are bound to the west by a new residential project under construction by Signature properties; retail uses and low-rise apartments, Victory Townhomes and Evergreen Estates (to the east and to the south, respectively); and El Camino Avenue and retail establishments to the north. The proposed C-2-TO along the northern half of this band would be consistent with the existing uses and compatible with the retail uses directly to the north across El Camino Avenue and with the retail uses to the east. The proposed RMX-TO zoning in the southern half of this band would be compatible with the Signature property to the west and Victory Townhomes and Evergreen Estates, to the east and south, respectively. Because the proposed zoning between El Camino Avenue and Dixieanne Avenue would permit uses that are more compatible with Dixieanne Park and the three new or under construction medium density residential projects than existing zoning, the Strategic Plan would be consistent with and support land use compatibility with neighboring land uses. The proposed RMX-TO zoning would cause existing industrial uses to be nonconforming uses. The industrial uses would be allowed to continue in operation; however, there would be restrictions to enlarging or improving these properties subject to the City's nonconforming use and structures regulations pursuant to Section 17.88 of the City's Zoning Code.

Dixieanne Avenue to Calvados Avenue. As with the previous land use band, the area from Dixieanne Avenue south to Calvados Avenue falls into two distinct areas. The northern portion, which is largely defined by Evergreen Estates, is residential and zoned R-3 and R-4; a small parcel at the corner of Dixieanne Avenue and Evergreen Street is commercial and zoned C-2-R. The southern portion consists of vacant land and a large parking lot and is zoned M-1. The area to the west, which is outside the Swanston TVSP project area, is entirely single-family development, characteristic of the Dixieanne Neighborhood. As a result, the proposed RMX-TO zoning would be compatible with the adjacent Dixieanne Neighborhood and would prohibit industrial development in the vacant and parking areas that would be less compatible with the neighborhood to the west. The proposed RMX-TO zoning would also be compatible with the residential uses to the east along Dixieanne Avenue. However, there may be land use conflicts between the proposed RMX-TO zoned vacant land (currently zoned M-1) and the large industrial facilities to the east across Green Street. Lighting, truck activity, and

noise from daily operations at the existing industrial uses could disturb future residential land uses within the Strategic Plan area. As a result, there could be land use compatibility impacts unless the proposed RMX-TO site develops as a commercial use or unless the site is designed to reduce the externalities from the existing industrial activities (through building orientation, massing, landscaping/buffering, and architectural design). Pursuant to the City's TO regulations, the City Planning Director will conduct plan review of development applications within TO-zoned properties; appropriate design features can be incorporated to avoid or mitigate potential land use conflicts between the permitted residential uses within the Strategic Plan area and the existing industrial uses to the east.

Calvados Avenue to Arden Way. The existing land uses in this band are almost entirely industrial, except for two parcels in the northwest corner of this band. The area is currently zoned M-1 and under the Swanston Station Specific Plan would be rezoned to C-2-TO. The existing uses to the west and east are similarly developed with industrial activities and are similarly zoned. Development that could occur within the Strategic Plan area would thus be compatible with and consistent with the existing uses to the west and east. To the south, this band is bound by Arden Way, which serves as a physical buffer and separator from the commercial retail land uses to the south. The proposed C-2-TO zoning in this band would not be expected to result in land use conflicts with surrounding land uses.

South of Arden Way. The final band is a triangular piece of land defined by Arden Way on the north, Evergreen Street on the east, and the proposed realignment of the light rail tracks by Sacramento Regional Transit District (a realignment that would straighten Lumberjack Curve on Sacramento Regional Transit's Northeast Line). The western two-thirds of this band contains retail uses and is zoned M-1; the eastern third contains industrial uses and is zoned M-1 as well. This entire area would be rezoned C-2-TO as part of the Swanston Station Specific Plan and would be planned to support transit-development opportunities around the Sacramento Regional Transit District's Royal Oaks Station. These future uses would be compatible with the existing retail uses to the east, which are anchored by a Harley Davidson retail business. South of the realigned tracks are large industrial buildings and extensive parking areas. As a result, the proposed C-2-TO zoning would not result in land use conflicts with the existing uses.

Long-Term Plan Area

Areas to the north and west of the Swanston TVSP project area consist primarily of residential development; the northern boundary is defined by the South Hagginwood and Ben Ali neighborhoods and the western boundary is defined by the Dixieanne and Woodlake neighborhoods. The area to the east is defined by portions of the Ben Ali Neighborhood and the Capital City Freeway. The area to the south generally consists of industrial buildings and large warehouses that are part of the Erikson Industrial Park. Beyond the freeway are the Swanston Estates, a large hotel (Red Lion), and Arden Fair Mall.

Northern Interface. Along the northern perimeter of the Long-Term Plan area (north of El Camino Avenue and west of the railroad tracks), existing uses within the Long-Term Plan area are predominantly retail but also include light industrial and a mobile home park (see Figure 4-1). These uses are zoned C-2. East of the tracks, El Camino Avenue becomes the northern boundary of the

Swanston TVSP project area. Existing uses in the Long-Term Plan area are a mix of warehousing and retail uses, zoned M-1 and C-2, respectively. Under the Long-Term Plan, the areas currently zoned M-1 and C-2 along El Camino Avenue would be rezoned as C-2-TO, with the exception of the parcels south of El Camino and east of Taft Street which are currently zoned M-1 and would be rezoned RMX-TO. The revised zoning that would accompany the Swanston Station Specific Plan would not alter the existing land use relationship between the mixed uses in the Long-Term Plan area and the residential uses to the north in the South Hagginwood and Ben Ali neighborhoods. As such, the Swanston Station Specific Plan would not result in new land use conflicts or incompatibilities along the Long-Term Plan area's northern boundary. Rather, the proposed rezoning to C-2-TO and RMX-TO would prohibit C-2 land uses that could introduce land use conflicts with the adjoining residential uses to the north (e.g., auto sales, auto service and repair, auto storage and auto rental uses; towing service and vehicle storage yard; RV mobile home sales yard and storage; building contractor shops; equipment rental/sales yards, and commercial laundries). As a result, the Swanston Station Specific Plan would not trigger land use incompatibilities with the South Hagginwood or Ben Ali neighborhoods.

Eastern Interface. Along the eastern perimeter of the Long-Term Plan area, much of the area is bound by the Capital City Freeway. The freeway serves as a physical buffer between land uses in the Long-Term Plan area to the west and land uses outside the Long-Term Plan area to the east. As a result, in the eastern portion of the Long-Term Plan area that is bound by the Capital City Freeway, there would be no land use conflicts between the proposed project and Swanston Estates and the Red Lion Hotel to the east.

There is one segment between Silica Avenue and El Camino Avenue along Princeton Street where development within the Long-Term Plan area (on the west side of Princeton Street) would interact directly with adjoining land uses (on the east side of Princeton Street). The existing land use within the Long-Term Plan area in this stretch is predominantly single-family residential and is zoned R-1 and C-2. Under the Swanston Station Specific Plan, the properties zoned R-1, with the exception of three parcels adjacent to commercial uses, would be rezoned RMX-TO and the properties zoned C-2 would be rezoned C-2-TO. The proposed zoning would not alter the existing land use relationship between the primarily residential uses in the Long-Term Plan area and the mix of residential uses and large-scale industrial and warehousing operations to the east. The proposed project maintains the existing land uses and thus would not introduce new or additional conflicts that could occur as a result of the industrial operations to the east.

Southern Interface. As shown in Figure 4-5, the Swanston Station Specific Plan envisions RMX-TO (currently OB-LI), OB-LI (no change from existing zoning), M-1-LI (no change from existing zoning), M-1 (no change from existing zoning), M-2 (no change from existing zoning), and C-2-TO (currently C-4-R, M-2) along its southern boundary (from west to east). These areas are part of the Erikson Industrial Park and are bound on the south by large-scale businesses that are part of the industrial park. The Swanston Station Specific Plan would not substantially alter the existing land use relationships between the existing areas in the Long-Term Plan area and the industrial park lands to the south. The only notable alteration is the rezoning of the OB-LI property north and west of Evergreen Street to RMX-TO. Future residential development could be adversely affected by the large-scale industrial

operations to the south and west. However, the RMX-TO development regulations include measures to mitigate against potential noise impacts from surrounding uses. In addition, as previously noted, all development pursuant to TO zoning would be subject to plan review by the City Planning Director. Such review would enable appropriate design features to be incorporated in the RMX-TO zoned property to avoid or mitigate potential land use conflicts between the permitted residential uses within the Long-Term Plan area and the existing industrial uses to the south and west.

Western Interface. Potential conflicts along the western boundary of the Swanston TVSP project area are largely addressed in the earlier assessment of the Strategic Plan area, since the Strategic Plan area defines most of the western perimeter of the entire Swanston TVSP project area. As noted in that assessment, the proposed zoning within the Strategic Plan area would be compatible with, and supportive of, the residential uses in the Dixieanne Neighborhood to the west. In the nonresidential portions of the Swanston TVSP project area along the western perimeter, the Swanston Station Specific Plan would rezone C-2 properties to C-2-TO. As explained previously, the TO regulations would afford greater protection to existing residential land uses in the Dixieanne Neighborhood because they would prohibit commercial uses that could adversely affect residential uses and they would require plan review of future development applications by the City Planning Director.

Consistency with Adopted Plans, Policies, and Zoning Ordinance

City of Sacramento General Plan and Smart Growth Principles

General Plan Consistency. The City of Sacramento General Plan land use designations for the Swanston TVSP project area are Commerce/Neighborhood Commercial and Office, Regional Commercial and Office, Heavy Commercial/Warehouse, Industrial-Employee Intensive, Low Density Residential, Medium Density Residential, Parks-Recreation-Open Space, Special Planning District, and Public/Quasi-Public-Miscellaneous. The Swanston Station Specific Plan would require City approval of General Plan amendments to change some of the land use designations in the Swanston TVSP project area to Mixed Use and Residential Mixed Use.

The Mixed Use designation includes a mixture of office, commercial, open space, and medium and high-density residential uses. The Residential Mixed Use designation refers to areas planned for development that consists of a mixture of residential densities, commercial, and/or office use. Both the Mixed Use and Residential Mixed Use designations include a minimum average target density for housing within ¼ mile of a light rail transit station of 22 dwelling units per net acre. Development with the Swanston TVSP project area would be consistent with the uses and development densities identified in the Mixed Use and Residential Mixed Use land use designations, including the required housing densities within ¼ mile of a light rail transit station.

Table 4-1 below contains a more detailed, policy-by-policy assessment of the consistency of the Swanston Station Specific Plan with relevant General Plan policies. In general, development within the Strategic Plan area would accommodate the development that could occur based on a market overview and begin to make the circulation, infrastructure, and open space improvements envisioned by the Swanston Station Specific Plan at buildout. Development in this area is the critical first step towards

creating a vibrant transit village. As such, comments made below in Table 4-1 regarding the consistency of development within the proposed Strategic Plan area with the 1988 adopted Sacramento General Plan would typically be applicable to the Long-Term Plan area as well.

Table 4-1
Consistency of the Swanston Station Specific Plan with Relevant Sacramento General Plan Policies

General Plan Policy	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
Residential Land Use Element		
Goal A. Improve the quality of residential neighborhoods Citywide by protecting, preserving, and enhancing their character		
Policy 5. Continue redevelopment and rehabilitation efforts in existing target areas and identify other areas experiencing blighting conditions. Explore methods to expand public or private rehabilitation efforts in potential improvement areas and in areas of opportunity or reuse identified in the General Plan.	The Strategic Plan area contains vacant and under-developed areas. Development that could occur within the Strategic Plan area is "catalyzed around new and planned developments in the area" (such as the improvements at Dixieanne Park, planned development at the Signature Properties site west of the Strategic Plan area and in the Strategic Plan area between Evergreen and Green Streets, planned development at the Lumberjack Site, and new development at Victory Townhomes and Evergreen Estates). In addition, improvements further west along Dixieanne Avenue and at Dixieanne Park are proposed to be extended eastward through the project area by making Dixieanne Avenue a "main street," defined by improved pedestrian connections and open spaces. As a result, new development and open space improvements are consistent with General Plan Residential Land Use Element, Goal A, Policy 5.	The Swanston Station Specific Plan lies within the North Sacramento Redevelopment Project Area. The redevelopment area was established to recognize blighting conditions within the project area and to identify public and private rehabilitation efforts. The Swanston Station Specific Plan identifies new land uses; circulation, infrastructure, and open space improvements, and recommends urban design guidelines to enhance the appearance and functioning of the public and private areas of the project area. As such, the land uses and improvements proposed in the Long-Term Plan area would be consistent with General Plan Residential Land Use Element, Goal A, Policy 5.
Policy 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.	The Swanston Station Specific Plan proposes to modify the General Plan land use designations in the project area to include only Mixed Use and Residential Mixed Use designations and to rezone the area primarily using RMX-TO and C-2-TO zoning. The proposed TO zoning regulations contain additional development standards to enable residential uses to be more compatible with commercial	Development within the Long-Term Plan area continues implementation of the open space and circulation improvements initiated in the Strategic Plan area. Development envisions a major transit plaza and promenades that would define Swanston Station as a major destination in the Specific Plan area. The urban design concept seeks to protect the residential

Table 4-1
Consistency of the Swanston Station Specific Plan with Relevant Sacramento General Plan Policies

General Plan Policy	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
	and rail operations. Furthermore, the TO regulations require plan review by the City Planning Director to further ensure appropriate design features are incorporated to protect residential uses. In general, the Strategic Plan area is predominantly residential with a fine-grained development pattern, and future development is to respect the small-scale character of the Dixieanne neighborhood. In addition, open space and circulation improvements are proposed that would serve as the initial building blocks for a comprehensive open space and circulation network that would enhance accessibility to Swanston Station. The proposed zoning regulations and open space and circulation improvements would be consistent with General Plan Residential Land Use Element, Goal A, Policy 6.	character within and surrounding the project area. In particular, lower density, smaller-scale residential uses are located near the existing neighborhoods of Dixieanne, South Hagginwood, and Ben Ali. Specifically, Swanston Station Specific Plan Design Guideline 2Aiv-2 calls for future development to "respect the scale and grain of existing residential developments in the Dixieanne and Ben Ali neighborhoods with the massing and scale of new residential development." Further, Swanston Station Specific Plan Design Guideline 2Ax-4 seeks to "encourage primarily residential uses west of the tracks between Arden Way and El Camino Avenue." These policies and the open space and circulation improvements intended to serve transit corridors are consistent with General Plan Residential Land Use Element, Goal A, Policy 6.
Goal C. Develop residential land uses in a manner that is efficient and utilizes existing and planned urban resources.		
Policy 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.	The Swanston Station Specific Plan designates the project area for Residential Mixed Use and Mixed Use, with a minimum average target density of 22 dwelling units per net acre within ¼ mile of the light rail station. The land use designations would allow mixes of residential, retail, and office land uses that could support transit operations. The Swanston Station Specific Plan includes General Plan amendments to implement the proposed land use changes. The recently developed Victory Townhomes and Evergreen Estates are higher density residential projects that lie within the ¼-mile radius of the Swanston Station. Development in the Strategic Plan area	The Long-Term Plan area encompasses much of the area within ¼ mile of the Swanston Station. Much of the existing land uses shown in Figure 4-1 are vacant or underutilized. Major land use changes in this area would accommodate much more intensive land uses, consistent with the Residential Mixed Use and Mixed Use designations. Policy C1 under Planning Strategy C "Maximize TOD Potential" of the Swanston Station Specific Plan encourages the City to "allow for higher-density, market-friendly, non-auto-oriented development near transit, by reducing parking requirements and associated building costs and

Table 4-1
Consistency of the Swanston Station Specific Plan with Relevant Sacramento General Plan Policies

General Plan Policy	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
	seeks to leverage this development by concentrating public improvements in this area. The land use designations and open space and circulation improvements encouraged in this area are consistent with General Plan Residential Land Use Element, Goal C, Policy 1.	allowing for more development." Many of the major transportation improvements that would enhance accessibility across the railroad tracks and enable more convenient connections to the Swanston Station would be constructed within this area. As a result of the above policy strategies and recommendations, the Long-Term Plan would be consistent with General Plan Residential Land Use Element, Goal C, Policy 1.
Policy 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.	See discussion above. Proposed development within the Strategic Plan area would be consistent with General Plan Residential Land Use Element, Goal C, Policy 2.	See discussion above. Development within the Long-Term Plan area would be consistent with General Plan Residential Land Use Element, Goal C, Policy 2.
Policy 6. Continue to support redevelopment and rehabilitation efforts that add new and reconditioned units to the housing stock while eliminating neighborhood blight and deterioration.	See discussion above under Goal A, Policy 5. In addition, Policies E1 through E4 under Planning Strategy E "Provide Redevelopment Incentives" seek to facilitate transit-oriented development by ensuring that development strategies are streamlined and all existing potential new incentives for desired types of development (including new and reconditioned housing units) are explored. Development within the Strategic Plan area would be consistent with General Plan Residential Land Use Element, Goal C, Policy 6.	See discussion above under Goal A, Policy 5. In addition, Policies E1 through E4 under Planning Strategy E "Provide Redevelopment Incentives" seek to facilitate transit-oriented development by ensuring that development strategies are streamlined and all existing potential new incentives for desired types of development (including new and reconditioned housing units) are explored. Development within the Long-Term Plan area would be consistent with General Plan Residential Land Use Element, Goal C, Policy 6.

Table 4-1
Consistency of the Swanston Station Specific Plan with Relevant Sacramento General Plan Policies

General Plan Policy	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
Commerce and Industry Land Use Element		
Goal A. Promote Transit Oriented Development (TOD) within ¼ mile of existing and future light rail transit (LRT) stations.		
Policy 1. Actively support and encourage mixed use commercial, office, and residential development in identified areas of opportunity around light right stations by establishing minimum development standards, potential financial incentives, and priority processing or streamlined review.	See discussion above for Goal C, Policy 1 and Goal C, Policy 6. Based on that analysis, development within the Strategic Plan area would be consistent with General Plan Commerce and Industry Land Use Element, Goal A, Policy 1.	See discussion above for Goal C, Policy 1 and Goal C, Policy 6. Based on that analysis, development within the Long-Term Plan area would be consistent with General Plan Commerce and Industry Land Use Element, Goal A, Policy 1.

Source: PBS&J, 2008.

Smart Growth Principles Consistency. The Smart Growth Principles of the City of Sacramento generally seek to allow for mixed uses, accommodate higher intensity infill uses near transit centers, create a sense of place, foster walkable neighborhoods, promote energy conservation, encourage a variety of transportation choices, and citizen participation. Each of the principles is reproduced below in Table 4-2, along with a statement of how well the Swanston Station Specific Plan satisfies the principles.

As an overview, the Swanston Station Specific Plan is highly consistent with the smart growth principles because there is strong correlation between these principles and the five planning strategies that define the planning framework for the Swanston Station project area.

- Planning Strategy A "Create a Sense of Place" directs the City to utilize and respect the context of the existing natural and man-made environment to create a unique identity and sense of place. This strategy is consistent with Principles 1, 2, 5, and 6.
- Planning Strategy B "Improve Circulation and Connectivity" directs the City to improve and augment streets and pathways, creating an integrated, safe, and enriching circulation system for pedestrians, bicyclists, people with disabilities, transit, and vehicles. This strategy is consistent with Principles 4, 8, and 14.
- Planning Strategy C "Maximize TOD Potential" directs the City to promote high density transit-oriented development to support the transit ridership and overall revitalization of the area. This strategy is consistent with Principles 1, 3, 4, 14, and 15.

Table 4-2
Consistency of the Swanston Station Specific Plan with Sacramento Smart Growth Principles

Smart Growth Principle	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
1. Mix land uses and support vibrant city centers	The Swanston Station Specific Plan promotes mixed uses by rezoning lands in the project area to RMX-TO or C-2-TO. The five key planning strategies that comprise the planning framework for the Specific Plan set the tone for the more specific land use, circulation, open space, and infrastructure policies geared towards creating a vibrant transit village. Development within the Strategic Plan area marks the initial efforts to implement the Swanston Station Specific Plan and seeks to capitalize on recently developed and planned land uses and improvements in the Specific Plan area. As a result, it is consistent with Smart Growth Principle 1.	The Swanston Station Specific Plan promotes mixed uses by rezoning lands in the project area to RMX-TO or C-2-TO. The five key planning strategies that comprise the planning framework for the Specific Plan set the tone for the more specific land use, circulation, open space, and infrastructure policies geared towards creating a vibrant transit village. Development within the Long-Term Plan area encompasses the buildout vision for the transit village. As a result, it is consistent with Smart Growth Principle 1.
2. Take advantage of existing community assets emphasizing joint use of facilities	Development within the Strategic Plan area seeks to leverage existing community assets such as recent development and improvements at Dixieanne Park. Planning Strategy A "Create a Sense of Place" includes more detailed policies to develop Dixieanne Park as a community focal and destination point, to establish Dixieanne Avenue as a "Main Street" for the west side of the tracks, and to promote Evergreen Street as the entrance to the transit village. The Swanston Station Specific Plan calls for open space improvements that encourage the integration of stormwater runoff reduction and treatment best management practices to maximize ecological considerations. Because of these provisions, the Swanston Station Specific Plan would be consistent with Smart Growth Principle 2.	Development within the Long-Term Plan area capitalizes on the existing Swanston Light Rail Station. Development would include a transit plaza around the station, promenades and pedestrian connections linking the Specific Plan area to the station, and a mix of higher intensity uses around the station. Finally, the Swanston Station Specific Plan contains design guidelines for mixed use buildings. These guidelines specify how existing buildings can be designed to support and promote attractive mixed use buildings. Because of these provisions, the Swanston Station Specific Plan would be consistent with Smart Growth Principle 2.
3. Create a range of housing opportunities and choices	Planning Strategy C2 directs the City to utilize vacant and underutilized opportunity sites to house a variety of different built and open space uses. In addition, the design guidelines of the Swanston Station Specific Plan are	Development that could occur in the Long-Term Plan area would permit a wide range of residential densities as permitted by Swanston Station Specific Plan Design Guidelines 2Aiii-1 through 2Aiii-3.

Table 4-2
Consistency of the Swanston Station Specific Plan with Sacramento Smart Growth Principles

Smart Growth Principle	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
	tailored to address transit-oriented buildings, market-friendly building prototypes, new building prototypes, and building types that respect the surrounding character and community vision. Each of these sets of guidelines for private development addresses a range of housing types in the Specific Plan area. The residential densities are defined as follows: • 2Aiii-1: Ensure a minimum density of 15 du/ac within the project area. Encourage target residential density of 35 du/ac throughout the station area. • 2Aiii-2: Encourage 40 to 60 du/ac closest to the transit station. • 2Aiii-3: Allow residential densities up to 150 du/ac on the east side of the tracks in large scale buildings. Development with the Strategic Plan area would permit residential densities consistent with Swanston Station Specific Plan Design Guideline 2Aiii-1, and would be compatible with the nearby Dixieanne Neighborhood and the recent developments at Victory Townhomes and Evergreen Estates. The proposed RMX-TO and C-2-TO zoning would allow a range of housing types and be consistent with Smart Growth Principle 3.	The proposed RMX-TO and C-2-TO zoning would allow a range of housing types and be consistent with Smart Growth Principle 3.
4. Foster walkable, close-knit neighborhoods	Development within the Strategic Plan area includes the initial open space and circulation improvements that would serve as a comprehensive pedestrian, bicyclist, and vehicular network for the project area. Specifically, Dixieanne Avenue is designated as the project area's Main Street, Evergreen Street would serve as the neighborhood entry street to the transit village, and Calvados Avenue would become the major direct access to the transit station. Streets and sidewalks would be upgraded consistent with the City's Pedestrian Friendly Street	The street and open space classification systems of the Swanston Station Specific Plan create a hierarchy of circulation and open space improvements (see Figures 2-8 and 2-13). In addition, Figure 2-12 presents the comprehensive pedestrian and bicycle system improvements throughout the project area. These diagrams support and implement Planning Strategy B "Improve Circulation and Connectivity" and Planning Strategy C "Maximize TOD Potential" – both of these

Table 4-2
Consistency of the Swanston Station Specific Plan with Sacramento Smart Growth Principles

Smart Growth Principle	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
	Standards and the City's Bike Master Plan. The open space improvements would include greenways and mews through the Strategic Plan area that are tailored to support a strong and vibrant community life, gathering opportunities, amenities for a variety of users, relief from the intensity of development, and improved access to the transit station. These beginnings of a comprehensive open space and circulation network would be consistent with Smart Growth Principle 4.	overarching strategies serve to foster walkable, close-knit neighborhoods and thus enable the Swanston Station Specific Plan to be consistent with Smart Growth Principle 4.
5. Promote distinctive, attractive communities with a strong sense of place, including the rehabilitation and use of historic buildings	Planning Strategy A "Create a Sense of Place" calls for the City to create a unique identity to the transit village and create an identifiable public realm (i.e., enhanced streets and open spaces). Development within the Strategic Plan area would recognize Dixieanne Park as a key neighborhood destination and the foundation for creating Dixieanne Avenue as the project area's Main Street and for transforming Evergreen Street as the entrance to the transit village. Street and sidewalk improvements, paving, and landscaping along Dixieanne Avenue, Evergreen Street, and Calvados Avenue are identified. Section 6.4, Cultural Resources, later in this document does not identify historic buildings in the project area. However, because of the steps taken to build momentum from planned, recent, and new development projects in Strategic Plan area and the implementation of circulation and open space improvements, the Swanston Station Specific Plan would be consistent with Smart Growth Principle 5.	At buildout, implementation of the five planning strategies (identified above) and the Urban Design Guidelines in Chapter 4 of Volume Two of the Swanston Station Specific Plan would result in a vibrant attractive transit village with a strong sense of place. The Urban Design Guidelines are proposed to guide the physical environment and character of the streets, buildings, and open space within the transit village. As a result, the Swanston Station Specific Plan would be consistent with Smart Growth Principle 5.

Table 4-2
Consistency of the Swanston Station Specific Plan with Sacramento Smart Growth Principles

Smart Growth Principle	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
6. Preserve open space, farmland, natural beauty, and critical environmental areas	In the review of project area's assets at the outset of the planning process, Dixieanne Park was recognized as the only public open space/recreational area in the area. No other natural open space, farmland, or critical environmental area exists. Development that could occur within the Strategic Plan area proposes new residential development around the park to support its targeted role as a neighborhood focal point and gathering place. Given the emphasis on the one major recreational area in the Swanston TVSP project area, the Swanston Station Specific Plan is consistent with Smart Growth Principle 6.	Same discussion as for the Strategic Plan area.
7. Concentrate new development and target infrastructure investments within the urban core of the region	The project area is within the urban core of the City of Sacramento, lies partially within a designated Redevelopment Project Area, and is centered around a transit station. Planning Strategy E "Provide Redevelopment Incentives" directs the City to explore cost effective infrastructure improvements and to encourage the Redevelopment Agency to provide financial incentives to facilitate transit-oriented development. The Swanston Station Specific Plan, by encouraging higher intensity uses in the project area and examining ways to promote cost effective infrastructure investment, is consistent with Smart Growth Principle 7.	Same discussion as for the Strategic Plan area.
8. Provide a variety of transportation choices	Planning Strategy B "Improve Circulation and Connectivity" directs the City to improve the pedestrian experience, provide safe and direct pedestrian crossings over the light and heavy rail tracks, create safe and convenient bike connections, and augment the existing pedestrian and bicycle framework by developing new connections to key destinations, including the transit station and nearby	At buildout, implementation of the five planning strategies (identified above) and the Urban Design Guidelines in Chapter 4 of Volume Two of the Swanston Station Specific Plan would result in a vibrant attractive transit village with a variety of connections among the major destinations and focal points within and outside the Specific Plan area. The Urban Design Guidelines

Table 4-2
Consistency of the Swanston Station Specific Plan with Sacramento Smart Growth Principles

Smart Growth Principle	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
	schools. Improvements within the Strategic Plan area would enhance transportation choices along Dixieanne Avenue, Evergreen Street, Calvados Avenue, and Arden Way. As such, the Swanston Station Specific Plan would be consistent with Smart Growth Principle 8.	contain provisions for the improvement and enhancement of streets, the creation of a transit plaza and promenades, and the development of multiuse greenways and mews. As a result, the Swanston Station Specific Plan would be consistent with Smart Growth Principle 8.
9. Make development decisions predictable, fair, and cost-effective	The Swanston Station Specific Plan by containing design guidelines for site design and planning of the public realm (streets, sidewalks, and public open spaces) and of the private realm (buildings and land that are on privately-owned lots and parcels) provides a clearer definition of the City's expectations for future development. As such, development decisions are more predictable and fair, and the Swanston Station Specific Plan would be consistent with Smart Growth Principle 9.	Same discussion as for the Strategic Plan area.
10. Encourage citizen & stakeholder participation in development decisions	During the development of the draft Swanston Station Specific Plan, multiple meetings, workshops, and interviews with community, stakeholders, and public agency representatives were held. These discussions were open, transparent, and critical in crafting the draft Swanston Station Specific Plan. Chapter 1 of Volume One of the Swanston Station Specific Plan describes the planning process including six stakeholder interviews, three community workshops, and meetings with a Steering Committee. Because of this commitment to public outreach and incorporating community input, the Swanston Station Specific Plan is consistent with Smart Growth Principle 10.	Same discussion as for the Strategic Plan area.

Table 4-2
Consistency of the Swanston Station Specific Plan with Sacramento Smart Growth Principles

Smart Growth Principle	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
11. Promote resource conservation and energy efficiency	An objective of the Swanston Station Specific Plan is to promote transit ridership, which reduces regional energy consumption by diverting trips from automobiles to more energy-efficient transit. In addition, as described above under Smart Growth Principle 8, the Swanston Station Specific Plan promotes a variety of transportation choices, enhancing pedestrian and bicycle options. Finally, the Urban Design Guidelines contain specific provisions to promote energy efficiency. Examples include: • 2Aii-6: Orient new development to minimize exposure to the southwest and west sun to minimize heat gain of buildings. • 2Aii-7: Encourage buildings, especially individual residential units, to have access to sun and air on at least two sides to provide adequate light and ventilation. • 2Avii-7: Encourage architectural styles that use sustainable building practices and materials, and ecologically-sensitive design solutions, including solar panels, light shelves and cool roofs. • 2Axi-4: Encourage the use of intensive and extensive green roofs and water collection devices, such as cisterns and rain barrels, to capture rainwater from the building for re-use. • 2Axii -1 through 14: Encourage building orientation, layout, stepbacks, landscaping, and building articulation to promote passive cooling. In light of the above, the Swanston Station Specific Plan is consistent with Smart Growth Principle 11.	Same discussion as for the Strategic Plan area.

Table 4-2
Consistency of the Swanston Station Specific Plan with Sacramento Smart Growth Principles

Smart Growth Principle	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
12. Create a Smart Growth Regional Vision and Plan	The Swanston Station Specific Plan creates a smart growth vision and plan for a transit village around a light rail station. It thus supports creation of a smart growth regional plan, but by itself does not create a regional plan.	Same discussion as for the Strategic Plan area.
13. Support high quality education and quality schools	The Specific Plan area does not include school facilities, and project policies and guidelines do not address education and schools.	Same discussion as for the Strategic Plan area.
14. Support land use, transportation management, infrastructure, and environmental planning programs that reduce vehicle emissions and improve air quality	See discussion above for Smart Growth Principle 11. Swanston Station Specific Plan provisions promote alternative modes of travel, sustainable, energy efficient building practices, and energy conservation measures that reduce air emissions and thus the Swanston Station Specific Plan would be consistent with Smart Growth Principle 14.	Same discussion as for the Strategic Plan area.
15. Policies adopted by regional decision-making bodies should discourage urban sprawl, promote infill development and the concentration of development	This principle is not relevant to the Swanston Station Specific Plan since decisions regarding adoption of the plan would be with the City of Sacramento, rather than regional decision-making bodies.	Same discussion as for the Strategic Plan area.

Source: PBS&J, 2008.

- Planning Strategy D "Build Upon Synergy of Existing Assets and Planned Developments" directs the City to leverage the synergy from existing and planned improvements to further enhance the area and attract private development. This strategy is consistent with Principles 1, 2, and 15.

- Planning Strategy E "Provide Redevelopment Incentives" directs the City to facilitate transit-oriented development by ensuring that development strategies are streamlined and all existing and potential new incentives for desired types of development are explored. This strategy is consistent with Principles 1 and 7.

Arden Arcade and North Sacramento Community Plans

Arden Arcade Community Plan. The portion of the Swanston TVSP project area east of the railroad tracks (within Long-Term Plan area) is located within the Arden Arcade Community Plan Area. Land uses within the incorporated portion of the Arden Arcade Community Plan area are governed by the City of Sacramento General Plan. As discussed above, the project is consistent with the land uses proposed by the 1988 City of Sacramento General Plan and thus the Arden Arcade Community Plan.

North Sacramento Community Plan. The portion of the Swanston TVSP project area west of the tracks (including all of the Strategic Plan area and a portion of the Long-Term Plan area) is within the North Sacramento Community Plan area. The Swanston Station Specific Plan would support the North Sacramento Community Plan residential and commercial land use goals as explained in Table 4-3. Consistent with the commercial land use goals in the North Sacramento Community Plan, the Swanston Station Specific Plan would also provide for a range of commercial uses which meet daily needs and are within convenient access to North Sacramento residents, upgrade commercial areas by eliminating land use conditions that contribute to blight, and encourage land uses which will enhance economic vitality of the community.

Table 4-3
Consistency of Swanston Station Specific Plan with
Relevant North Sacramento Community Plan Policies

Community Plan Policy	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
Residential Land Use Goals		
Accommodate the growth projected for North Sacramento by the City General Plan in an orderly and efficient manner, one which enhances the existing attractive features of the community.	Development within the Strategic Plan area seeks to accommodate the residential development that can be absorbed through approximately 2025. This estimate was derived based on a market assessment performed for the Swanston Station Specific Plan. This development is planned to capitalize on planned, recent, and new housing projects that have occurred in and near the Strategic Plan area. By building on this momentum and the synergy of existing assets (such as Dixieanne Park) growth is accommodated in an orderly and efficient manner. As such, the Swanston Station Specific Plan is consistent with this North Sacramento Community Plan residential policy.	Development in the Long-Term Plan area is a buildout scenario for the rest of the Specific Plan area. Because buildout is anticipated beyond 2025, the residential land use designations and densities do not respond to a growth projection for this portion of the North Sacramento Community Plan area. Rather, the proposed residential designations and densities are based on a planning strategy of maximizing the transit-oriented development potential of the transit village, consistent with a vibrant, walkable community. The rate of growth in the Long-Term Plan area, as with the Strategic Plan area, is based on market conditions, although it is recommended that public investments and support for improvements in the public realm (streets, sidewalks, and public open spaces) would serve to make the project area a more desirable location for private investment. The long-term

Table 4-3
Consistency of Swanston Station Specific Plan with Relevant North Sacramento Community Plan Policies

Community Plan Policy	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
		vision of creating a transit village emphasizing higher density, market-friendly development with a unique identity and sense of place would be consistent with this North Sacramento Plan residential policy.
Revitalize and stabilize residential areas showing signs of decline.	As the Strategic Plan area lies entirely within the North Sacramento Redevelopment Project Area, there are recognized blighting conditions within the Strategic Plan area. The Swanston Station Specific Plan contains a number of policies and urban design guidelines to enhance the residential areas of the project area. Planning Strategy E1 directs the City to facilitate development by assembling and consolidating small individual parcels to allow for design and construction efficiencies. Further, Planning Strategy E4 directs the City to provide financial incentives for development by having the Redevelopment Agency purchase and prepare sites for private development and exploring ways to streamline the development process. The City is encouraged to invest in the public realm (streets, sidewalks, and public open spaces) to signal investment and change in the area. These investments also have the benefit of stabilizing and enhancing the existing residential areas. Thus, the Swanston Station Specific Plan is consistent with this North Sacramento Community Plan residential policy.	Same discussion as for the Strategic Plan area. In addition, development in the Long-Term Plan area continues the circulation, infrastructure, and open space improvements identified in the Strategic Plan area. The Swanston Station Specific Plan encompasses and describes the vision for the majority of the vacant or underutilized land in the project area. This vision includes a much higher density type of residential development, particularly around the transit station, than currently exists. The investment in the public realm and in the infrastructure is intended to help support this higher density, market friendly development. The major transformation of the project area and the emphasis on housing, compared to jobs in the project area would revitalize and likely expand the residential areas in the Specific Plan area and be consistent with this North Sacramento Community Plan residential policy.
Commercial Land Use Goals		
Provide for a range of commercial uses which meet daily needs and are within convenient access to North Sacramento residents.	Based on the market study performed for the Swanston Station Specific Plan, the commercial uses proposed to be accommodated in the Strategic Plan area would be local serving. These commercial retail uses would be geared towards the need for goods and services by nearby local residents. Given this emphasis and	Both land use designations to be applied in the Specific Plan area, Residential Mixed Use and Mixed Use, allow flexibility in the permitted land uses and are designed to be broad, flexible, and accommodate variations in market demand for residential, commercial, office, and mixed-use projects. The proposed

Table 4-3
Consistency of Swanston Station Specific Plan with Relevant North Sacramento Community Plan Policies

Community Plan Policy	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
	the targeting of particular commercial uses based on a market overview, proposed development in the Strategic Plan area is consistent with this North Sacramento commercial policy.	implementing zoning districts, Residential Mixed Use (RMX) and General Commercial (C-2), both with a Transit Overlay (TO), likewise allow a variety of commercial activities, including repair facilities, small wholesale stores, or distributors. The Design Guidelines for building uses call for the City to encourage mixed-use and commercial buildings east of the tracks along Harvard Street and Silica Avenue (2Ax-5), and to explore minor commercial and retail uses directly adjacent to the transit station, such as coffee shops, newspaper stands, drycleaners, etc. Thus, the Swanston Station Specific Plan would encourage a mix of commercial uses, well connected by vehicular and pedestrian travelways, and be consistent with this North Sacramento commercial policy.
Upgrade commercial areas by eliminating land use conditions that contribute to blight.	Same discussion as above with respect to residential areas and eliminating signs of decline.	Same discussion as above with respect to residential areas and eliminating signs of decline.
Encourage land uses which will enhance economic vitality of the community.	The Swanston Station Specific Plan promotes mixed uses by rezoning lands in the project area to RMX-TO or C-2-TO. The five key planning strategies that comprise the planning framework for the Specific Plan set the tone for the more specific land use, circulation, open space, and infrastructure policies geared towards creating a vibrant, market-friendly transit village. Development within the Strategic Plan area marks the initial efforts to implement the plan and seeks to capitalize on recently developed and planned land uses and improvements in the Specific Plan area. As a result, the Swanston Station Specific Plan is consistent with this North Sacramento commercial policy.	The Swanston Station Specific Plan promotes mixed uses by rezoning lands in the project area to RMX-TO or C-2-TO. The five key planning strategies that comprise the planning framework for the Specific Plan set the tone for the more specific land use, circulation, open space, and infrastructure policies geared towards creating a vibrant, market-friendly transit village. The Swanston Station Specific Plan encompasses the buildout vision for the transit village, which builds upon the momentum of existing planned developments and expands investment in the public realm (streets, sidewalks, and open spaces) to make the project area more attractive. As a result, the Swanston Station Specific Plan is consistent with this North Sacramento commercial policy.

Table 4-3
Consistency of Swanston Station Specific Plan with Relevant North Sacramento Community Plan Policies

Community Plan Policy	Consistency with Development Proposed in the Strategic Plan Area	Consistency with Development Proposed in the Long-Term Plan Area
Office Land Use Goals		
Increase office development on a scale that contributes to the City's employment base.	Development in the Strategic Plan area includes higher intensity commercial and mixed use development around the transit station. However, in these plan provisions and in the urban design guidelines, office uses are rarely mentioned specifically. The Swanston Station Specific Plan concentrates more on the form, scale, layout, and massing than the particular use to better ensure that the use is physically, visually, and functionally connected to the rest of the project area. Accordingly, it is not possible to assess whether the Swanston Station Specific Plan would be consistent with this North Sacramento office policy, although Planning Strategy C1 calls for the City to allow for higher-density, market-friendly, non-auto-oriented development near transit, and includes small to medium-scale tenants and professional offices within its definition of market-friendly land uses.	Same discussion as for the Strategic Plan area.

Source: PBS&J, 2008.

North Sacramento Redevelopment Plan

As noted earlier in the description of the Redevelopment Plan, the North Sacramento Redevelopment Plan is an implementation tool intended to remove blighting conditions and facilitate the physical improvement of the Swanston TVSP project area consistent with the General Plan and Community Plan. Table 4-2 and Table 4-3 show how the Swanston Station Specific Plan is consistent with and supportive of the General Plan and the North Sacramento Community Plan, respectively. Accordingly, the Swanston Station Specific Plan would likewise be consistent with the Redevelopment Plan. More specifically, the planning strategies articulated in Swanston Station Specific Plan, which provide the overall direction for the land uses, intensities, improvements, and design guidelines correspond well with the Redevelopment Plan goals, as indicated below.

- **Jobs for the Neighborhood.** Planning Strategy C "Maximize TOD Potential" is consistent with this redevelopment goal by allowing higher-density, market-friendly non-auto-oriented

development and utilizing vacant and underutilized opportunity sites to house a variety of different uses.

- **Forge Partnerships.** The planning strategies do not explicitly speak to forging partnerships; however, Planning Strategy A " Create a Sense of Place," Planning Strategy D "Build Upon Synergy of Existing Assets and Planned Developments," and Planning Strategy E "Provide Redevelopment Incentives" address the importance of leveraging off recent private investments in the area, improving the public realm to make the area more attractive for private investment, and streamlining the development process to create incentives for desired types of development – all of which recognize the value and importance of private and public sector cooperation and involvement.

- **Local Shopping and Services.** Planning Strategy C "Maximize TOD Potential" is consistent with this redevelopment goal by allowing higher-density, market-friendly non-auto-oriented development and utilizing vacant and underutilized opportunity sites to house a variety of different uses. In addition, the proposed RMX-TO and C-2-TO zoning allow a range of commercial retail uses that can support the increased residential population projected for the area by the Swanston Station Specific Plan.

- **Housing for All Families.** The planning strategies do not explicitly speak to providing housing for all families; however, the Swanston Station Specific Plan would accommodate more housing than under the current General Plan land use designations and zoning districts. The Swanston Station Specific Plan allows higher-density development near the light rail stations. Again, Planning Strategy C "Maximize TOD Potential" is consistent with this redevelopment goal by allowing higher-density, market-friendly non-auto-oriented development and utilizing vacant and underutilized opportunity sites to house a variety of different uses. The Swanston Station Specific Plan accommodates a mix of housing types and thus is supportive of this redevelopment goal. Implementation programs like the City's Redevelopment Plan would be expected to ensure that the City's objectives for housing affordability are attained.

- **Innovative Transit Solutions.** Planning Strategy B "Improve Circulation and Connectivity" would support pedestrian and bicycle improvements that are consistent with this redevelopment goal.

- **Eliminate Barriers to Redevelopment.** Planning Strategy E "Provide Redevelopment Incentives" encompasses policies to facilitate transit-oriented development and speaks to partnering with the Sacramento Housing and Redevelopment Agency to implement the mutual goals of enhancing the physical appearance and function of the area.

- **Increase Revenues.** Planning Strategy C "Maximize TOD Potential" is consistent with this redevelopment goal by allowing higher-density, market-friendly non-auto-oriented development and utilizing vacant and underutilized opportunity sites to house a variety of different uses. The emphasis on market-friendly uses such as specialty retail and commercial offices and

higher density, stable residential areas to replace the vacant and underutilized lands within the project area would increase City revenues, consistent with this redevelopment goal.

- **Enrich with Community Facilities.** Planning Strategy A "Create a Sense of Place" and Planning Strategy B "Improve Circulation and Connectivity" recognize the importance of enhancing the public realm, including streets, sidewalks, and open spaces. Swanston Station Specific Plan policies and design guidelines are aimed at improving the appearance and functioning of these community facilities and would be consistent with this redevelopment goal.

City of Sacramento Zoning Ordinance

The existing Swanston TVSP project area contains 14 zoning districts. Swanston Station Specific Plan uses existing zoning designations for most of the Swanston TVSP project area. It rezones most of the area as Residential Mixed Use (RMX) and General Commercial (C-2) with a Transit Overlay (TO) Zone, allowing for flexibility in the final development of the area and greater residential density consistent with transit-oriented development. For the USAA site east of the tracks, the plan retains the Light Industrial (M-1), Office Building (OB) with a Planned Unit Development PUD) designation, accommodating development of the area as previously proposed.

The C-2 zone provides for the sale of commodities, or performance of services, including repair facilities, small wholesale stores or distributors, limited processing and packaging, and residential.

The Transit Overlay Zone allows a mix of moderate to high density residential and nonresidential uses within a ½-mile radius of an existing or proposed light rail transit station. The district is intended to promote coordinated and cohesive site planning and design that maximizes land use transit supportive development, to create continuity of pedestrian-oriented streetscapes and activities throughout the district, and to encourage pedestrian, bicycle and transit rather than exclusive automobile access to employment, services, and residences. This overlay zone provides a streamlined approval process; permits increased heights, densities, and intensities over the base zone for projects with a residential component; and encourages housing and mixed use projects. The district restricts certain uses that do not support transit ridership. The Transit Overlay increases the maximum density allowed in the RMX and C-2 zone from 36 to 60 dwelling units per acre.

Table 4-4 indicates how existing zoned areas are proposed to be revised under the Swanston Station Specific Plan.

Sacramento Area Council of Governments (SACOG) Blueprint

The intent of the Blueprint is to target areas of the Sacramento region for urban growth while preserving natural resources. Although the Blueprint is not intended to guide development in a parcel-by-parcel manner, the Blueprint Preferred Scenario suggests that the Swanston TVSP project area be developed as Single-Family Residential, Attached Residential, Medium-Density Mixed-Use Center or Corridor, Retail, Industrial, Public, and Open Space. All of these suggested uses are permitted within the Mixed Use and Residential Mixed Use land use designations proposed for the Swanston Station Specific Plan.

Table 4-4
Comparison of Existing Zoning and Changes under the Swanston Station Specific Plan

Existing Zoning	Proposed Zoning	Comment/Assessment
C-2	C-2-TO	Areas that are currently zoned C-2 would be rezoned with the Transit Overlay (TO). The additional development regulations accompanying the TO would be expected to enhance site design and planning of C-2 zoned properties as new development occurs. The TO regulations would also restrict the uses that are permitted under the C-2 regulations. These prohibited uses would become nonconforming uses and would not be allowed to expand pursuant to the City's standards and guidelines governing nonconforming uses and structures.
C-2	A-OS	This proposed change would affect one property, the Dixieanne Park. The proposed A-OS would be more compatible with and supportive of the existing park. As a result, the Swanston Station Specific Plan would have a beneficial effect for Dixieanne Park by protecting it from conflicting land uses.
C-2, M-1	C-2-TO	This proposed change would affect one property along El Camino Avenue immediately west of the railroad tracks. The existing land use is identical to the uses to the west but is the only property not zoned C-2. The proposed C-2-TO zoning for this stretch of properties would create a consistent land use and design and would not be expected to result in a land use conflict or zoning inconsistency.
C-2-R	RMX-TO or C-2-TO	This proposed change would affect four properties. The proposed rezoning for the largest property, across the street from Dixieanne Park, to RMX-TO would be compatible and consistent with the proposed RMX-TO zoning surrounding this property. The other three properties that are currently zoned C-2-R would be rezoned to C-2-TO. The new zoning designation would be consistent with the existing uses and compatible with the proposed C-2-TO and RMX-TO zoning surrounding these properties.
C-4-R	C-2-TO	This proposed zoning change would affect the Hilton Hotel and California Plaza. Neither of these properties is envisioned for residential uses and the proposed zoning would be compatible with and consistent with the existing uses.
C-4-R, M-2	C-2-TO	This proposed zoning change would apply to a vacant property between California Plaza and the Extended Stay America along Harvard Street. The proposed zoning would ensure that future land uses on the site are compatible with the adjacent uses. The current zoning would permit heavy commercial and manufacturing uses that could conflict with neighboring uses and would not be transit supportive.
M-1	C-2-TO, RMX-TO, and M-1	The M-1 zoning is the most prevalent zoning district in the Specific Plan area. The Swanston Station Specific Plan would convert M-1 light industrial uses to a mix of commercial (office and retail) and residential uses, except for the portion of the Erikson Industrial Park south of Arden Way and east of the railroad tracks, which would remain zoned as M-1 under the Swanston Station Specific Plan. Elsewhere in the project area, existing industrial uses would become nonconforming uses and would be subject to the City's regulations governing nonconforming uses and structures.

Table 4-4
Comparison of Existing Zoning and Changes under the Swanston Station Specific Plan

Existing Zoning	Proposed Zoning	Comment/Assessment
M-1, OB-PUD	No change	This zoning district applies to the property bound by Silica Avenue, Harvard Street, Arden Way, and the railroad tracks, and encompasses the USAA office complex. The Swanston Station Specific Plan acknowledges the existing zoning and PUD agreements between USAA and the City and would not alter the applicable regulations or conditions of development. The Swanston Station Specific Plan therefore has no land use effect on this property.
M-1-LI	No change	This zoning district applies to the area generally bound by Evergreen Street, Arden Way, and the railroad tracks, and encompasses the Harley Davidson business. The Swanston Station Specific Plan acknowledges the existing zoning and uses, and would not propose modifying the existing development regulations. As a result, the Swanston Station Specific Plan would have no land use effect on properties zoned M-1-LI.
M-2	No change	This zoning district applies to the Extended Stay America property at the corner of Harvard Street and Arden Way. The Swanston Station Specific Plan acknowledges the existing zoning and use, and would not propose modifying the existing development regulations. As a result, the Swanston Station Specific Plan would have no land use effect on this property.
OB-LI	RMX-TO, OB-LI	This zoning district applies to two areas south of the realigned light rail tracks. The smaller area, which lies east of Evergreen Street, would continue to be zoned OB-LI. This zoning applies to an existing parking area used by Caltrans and would enable future development that would be labor intensive. Since the zoning for this property would not change under the Swanston Station Specific Plan, no land impacts would occur at this site. On the other hand, the second area zoned OB-LI would be rezoned to RMX-TO. The proposed rezoning would permit residential uses and be supportive of plans for transit-oriented development by Sacramento Regional Transit District around the Royal Oaks Station. The future residential uses allowed by this zoning district could face incompatibilities from surrounding industrial uses and light rail operations. However, the RMX-TO contains additional development standards to protect residential uses from noise and other external effects from industrial and rail operations. In addition, the TO designation requires plan review by the City Planning Director which would further ensure incorporation of design features that would alleviate or reduce potential land use incompatibilities.
OB-PUD	No change	This zoning district applies to a narrow strip of land along the east side of the railroad tracks north of Arden Way. The Swanston Station Specific Plan acknowledges the existing zoning, and would not propose modifying the existing development regulations. As a result, the Swanston Station Specific Plan would have no land use effect on this property.
R-1	RMX-TO, C-2-TO	There are two areas in the Specific Plan area currently zoned R-1. The smaller area, consisting of six parcels, is at the western end of the project area, near the Royal Oaks Station and north of Arden Way. This area would be rezoned C-2-TO. The C-2-TO zoning

Table 4-4
Comparison of Existing Zoning and Changes under the Swanston Station Specific Plan

Existing Zoning	Proposed Zoning	Comment/Assessment
		would be consistent with and compatible with land uses to the west, south and east; however, the general commercial zoning could be incompatible with the two R-1 developed parcels. The C-2 zoning permits residential uses with a special use permit and provided that the residential use complies with specific development regulations to protect the occupants. The existing residential parcels may not conform with these development standards for residential uses in the C-2 zone and thus may not be consistent with the proposed zoning. The larger area currently zoned R-1 lies in the northeast corner of the Specific Plan area. The proposed RMX-TO zoning on these parcels would be consistent with the existing uses. As a result, the Swanston Station Specific Plan would have no land use effect on properties in this area.
R-3, R-4	RMX-TO	R-3 zoning currently applies to the recently developed Victory Townhomes property and the row of parcels along Evergreen Street opposite the recently developed Evergreen Estates property. The proposed RMX-TO zoning would be consistent with the Victory Townhomes property and allow higher densities than are currently found along Evergreen Street. Higher density residential or commercial uses permitted by the RMX-TO zoning could create land use conflicts for the existing single family uses; however, the RMX-TO zoning regulations require plan review by the City Planning Director. This review would serve to ensure applicable design features are incorporated to reduce potential land use conflicts. The RMX-TO zoning district would also be applied to the Evergreen Estates property. The proposed zoning would be consistent with the land use and intensity of Evergreen Estates and thus would not result in a land use effect on this property.

Source: PBS&J, 2008.

As noted in the description of the Blueprint, the preferred growth scenario should be considered a plan for how the growth principles can be implemented in the region. The Blueprint growth principles are a subset of the smart growth principles adopted by the City of Sacramento in 2001. In other words, each of the Blueprint growth principles corresponds to one or more of the smart growth principles. Because the Swanston Station Specific Plan is consistent with the smart growth principles, as demonstrated in Table 4-2, it is consistent with the Blueprint growth principles. In particular, Chapter 4 of Volume Two of the Swanston Station Specific Plan contains design guidelines for the public and private realms, which directly address the Blueprint growth principle on quality design. The Swanston Station Specific Plan would be consistent with the Blueprint preferred growth scenario, because it:

- promotes travel choices, especially alternative modes of travel (pedestrian, bicycling, and transit);
- allows mixed uses through proposed application of the RMX and C-2 zoning districts;

- supports compact development by applying the TO overlay which increases the base densities of the underlying RMX and C-2 zoning districts and permits more of the City's projected growth to occur within an already urbanized portion of the City;
- supports housing choices by accommodating a range of housing products (lower density single family units at the western end near the existing Dixieanne neighborhood and higher densities immediately around the transit station);
- uses existing assets such as vacant and underutilized lands where infrastructure capacity is available, Dixieanne Park as a neighborhood focal point, and the transit station as a major activity center and the core of the area's highest density uses;
- encourages quality design by articulating design guidelines for streets, sidewalks, open space, different building prototypes, service areas and access entries, and parking; and
- encourages natural resources conservation by recommending sustainable building practices, energy conservation, and stormwater management.

Chapter 5
Population and Housing

5.1 INTRODUCTION

The purpose of this chapter is to identify, estimate, and evaluate changes in population and housing attributed to development of the proposed Swanston Station Transit Village Specific Plan (Swanston TVSP project or Swanston Station Specific Plan) that could result in physical environmental effects. This chapter also describes the existing population and housing inventory in Sacramento County, the City of Sacramento, and the Swanston Transit Village Specific Plan project area (Swanston TVSP project area).

City plans and policies pertaining to housing and commercial/office uses are summarized, including those related to affordable housing and maintenance of a jobs/housing balance. Potential inconsistencies with adopted City plans or policies are identified.

Data sources used in the preparation of this chapter include:[1]

- U.S. Census (2000);
- Sacramento Area Council of Governments (SACOG);
- California Department of Finance (DOF);
- City of Sacramento Planning Department (market-based population, employment, and housing projections); and
- Bay Area Economics (market analysis report prepared for the Swanston Station Specific Plan).

The project description is used as a basis for the analysis of the project and cumulative impacts in the technical sections in Chapter 6 of this EIR. Changes in population and housing, in and of themselves, are generally characterized as social and economic effects, not physical effects on the environment. CEQA provides that economic or social effects are not considered significant effects on the environment unless the social and/or economic effects are connected to physical environmental effects. A social or economic change related to a physical change may be considered in determining whether the physical change is significant (CEQA Guidelines Section 15382). The direction for treatment of economic and social effects is stated in Section 15131(a) of the CEQA Guidelines:

> Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a

[1] As shown above, this section contains information from a variety of sources. Each of these sources uses different modeling and different assumptions to project growth, resulting in different results. While there are differences in the numbers, the growth trend demonstrated by each of these sources is consistent.

project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on physical changes.

While increased population and changes to demographics resulting from new development do not necessarily cause direct adverse physical environmental effects; indirect physical environmental effects such as increased vehicle trips and associated increases in air pollutant emissions could occur. Physical environmental effects associated with the increase in population are discussed in the technical sections in Chapter 6 of this document.

There were no responses to the Notice of Preparation regarding population and housing. Consequently, the issues addressed in this section are those topics that are specifically identified by the State CEQA Guidelines and the City of Sacramento.

5.2 SETTING

The Swanston TVSP project area encompasses about 230 acres of land, approximately three miles northeast of Downtown Sacramento. Land uses for the Swanston TVSP project area consist of the Swanston Light Rail Station, light industrial centers, residential neighborhoods, commercial corridors, and considerable vacant or underutilized land.[2]

Population

Regional Overview. According to SACOG, the greater Sacramento area, including the counties of Sacramento, Placer, El Dorado, Yolo, Sutter, and Yuba, experienced high population growth between 1990 and 2000. The area had a regional population of approximately 1,603,863 in 1990 and 1,936,006 in 2000, an increase of approximately 1.9 percent annually, making it one of the fastest growing areas in the state.[3] Current trends in population growth are expected to continue, as the estimated population in 2005 of 2,193,361[4] is projected to grow to 3,276,244 by 2035, an annual average growth rate of 1.3 percent.[5]

City of Sacramento. According to SACOG, the City had a population of 452,240 in 2005, growing an annual average of 2.1 percent since 2000.[6] SACOG produces population projections only on a

[2] Bay Area Economics, Swanston Transit Village Market Analysis, March 2006.

[3] Department of Finance, E-4 Historical Population Estimates for City, County and the State, <http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/ReportsPapers.php>. (November 2, 2007).

[4] Department of Finance, E-4 Historical Population Estimates for City, County and the State, <http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/ReportsPapers.php>. (November 2, 2007).

[5] Sacramento Area Council of Governments, *SACOG Projections*, <http://www.sacog.org/> (August 27, 2007).

[6] Sacramento Area Council of Governments, *Population, Housing, and Household Estimates 2000-2007*, <http://sacog.org/demographics/pophsg/index.cfm> (September 25, 2007).

regional and district-level basis and, as a result, there is no population projection data available for the City of Sacramento.

Swanston Station Transit Village Specific Plan Area. Unlike the Sacramento region and City of Sacramento, the Swanston TVSP project area has seen a fairly slow population increase. The area grew from 4,224 residents in 2000 to 4,261 residents in 2005, an annual average increase of 0.2 percent.[7]

Housing Supply

Regional Overview. While SACOG and local jurisdictions encourage infill development, most new housing developments continue to be built beyond existing urban boundaries. It is expected that 90 percent of future development will occur beyond these urban boundaries, in areas known as "greenfields." High growth areas are Rancho Cordova, El Dorado Hills, North Natomas, South Sacramento County, West Sacramento, Rocklin, Roseville, and Lincoln.[8] According to the U.S. Census, there were 542,527 total housing units in Sacramento County, of which 500,292 were occupied, 306,047 were owner-occupied (61 percent) and 194,245 were renter-occupied units (39 percent).[9] This translates into a vacancy rate of 7.8 percent. A vacancy rate of 5 percent is considered to be ideal as a lower vacancy rate implies scarce housing availability and a higher rate implies the housing market is depressed.

City of Sacramento. In the City of Sacramento, there were 185,843 housing units in 2006, of which 169,225 were occupied units, and 16,618 were vacant, resulting in an 8.9 percent vacancy rate.[10] Of the 169,225 occupied units, 88,054 units were owner-occupied housing units (52 percent) and 81,171 were renter-occupied housing units (48 percent).[11]

Swanston Station Transit Village Specific Plan Area.[12] The Swanston TVSP project area had a total of 2,137 housing units in 2005, 42.4 percent of which were owner-occupied units and 57.6 percent of which were renter-occupied units. When compared to the region and City, the Swanston TVSP project area is the only area with over 50 percent of the housing units renter occupied. Multifamily units represent 44 percent of all housing units in the area, the largest portion of any housing type. The second largest portion, single family units, account for 43 percent of all housing units. Mobile homes comprise the remaining 12 percent of the residential units in the Swanston TVSP project area.

---

7 Sacramento Area Council of Governments and Bay Area Economics, Swanston Transit Village Market Analysis, March 2006.

8 Sacramento Area Council of Governments, *2006 Metropolitan Transportation Plan*, March 16, 2006.

9 U.S. Census, American FactFinder, <http://www.factfinder.census.gov> (September 28, 2007).

10 U.S. Census, American FactFinder, <http://www.factfinder.census.gov> (November 2, 2007).

11 U.S. Census, American FactFinder, <http://www.factfinder.census.gov> (November 2, 2007).

12 Bay Area Economics, Swanston Transit Village Market Analysis, March 2006.

Jobs-Housing Balance

The concept of jobs/housing balance refers to the relationship of residences to jobs in a given community or area. Assuming a reasonable match between the affordability of housing and the incomes of jobs in the local market, if the number and proximity of residences is proportionate to the number and proximity of jobs, the majority of the employees would have the opportunity to work and reside in the same community. A well-balanced ratio of jobs and housing can contribute to reductions in the number of vehicle trips resulting from commuting due to employment opportunities in closer proximity to residential areas. Such a reduction in vehicle trips would necessarily result in lower levels of air pollutant emissions and less congestion on area roadways and intersections. However, this measure is more useful at the county and city levels as it is not expected that a balanced jobs to housing ratio be available or even desirable at a small geographic level such as the plan area, neighborhoods and districts are not necessarily intended to maintain a balanced jobs to housing ratio. As noted above, another important consideration in evaluating the jobs/housing balance is whether housing in the community is affordable to local employees. The availability of an adequate housing supply, presenting various price levels including those that are reasonably available to those holding jobs that are offered in the community, provides the potential to reduce the length of commutes between residences and work sites.

City of Sacramento. The City's employment in 2005 was 214,267, with 182,045 total housing units, resulting in an employee per unit ratio of 1.27:1.[13] This ratio suggests that employees are traveling from surrounding cities in Sacramento County and outside Sacramento County to fill jobs within the City. The extent to which this occurs depends on a variety of factors related not only to employment and housing in the City, but economic factors affecting the City and region, including, importantly, the affordability of housing. People are often willing to commute longer distances from areas where housing is more affordable.

Swanston Station Transit Village Specific Plan Area. In regards to the Swanston TVSP project area, the employment base in 2005 was 7,116 with 2,137 total housing units[14] for an employee per unit ratio of 3.3:1, which suggests that people are coming into the Swanston TVSP project area to work, and that this area is a more job versus residential-based area. This jobs/housing ratio is not unexpected given the large number of jobs in the Swanston TVSP project area east of the tracks, south of Arden Way, and along the area's major commercial streets, such as El Camino Avenue.

[13] An employee per unit ratio that exceeds 1.0 reflects the fact that there are more jobs than housing units within the City. An employee per unit ratio of 1.0 would mean that there is one job per housing unit.

[14] Sacramento Area Council of Governments and Bay Area Economics, Swanston Transit Village Market Analysis, March 2006.

5.3 APPLICABLE PLANS AND POLICIES

City of Sacramento General Plan

The various goals, policies, and implementation programs of the City of Sacramento General Plan seek to minimize population-related impacts by providing a comprehensive framework for the preparation of individual specific plans that ensure that local and regional concerns are adequately addressed in the planning of major new growth areas and that such areas are planned to avoid adverse economic impacts on existing urban centers.

The following goals and policies from the Housing Element are applicable to the proposed Swanston TVSP project:

> *Policy 1.E.* The City shall continue to promote appropriate and compatible infill housing.
>
> *Policy 1.F.* The City shall continue to develop and support transit oriented residential development along transit corridors.
>
> *Policy 5.D.* Promote quality residential infill development in infill areas or designated infill sites through flexible development standards.

The following goals and policies from the Residential Land Use Element are applicable to the proposed Swanston TVSP project:

> **Goal B.** Provide affordable housing opportunities for all income household categories throughout the City.
>
> *Policy 1.* Establish methods to provide more balanced housing opportunities in communities that lack a full range of housing opportunities.
>
> *Policy 2.* Support existing programs which provide affordable housing opportunities for lower income households and seek new ways to increase this housing type.

Sacramento Zoning Code

Chapter 17.190 in the City of Sacramento Zoning Code (the Code) provides direction for the provision of affordable housing in residential projects. The ordinance specifically addresses the provision of inclusionary components for very low and low-income households in all residential development projects that are not otherwise exempt. A low-income household is defined as one whose income does not exceed 80 percent of the median Sacramento County income, while a very-low-income household is one that is defined as one whose income does not exceed 50 percent of the median Sacramento County income. The ordinance requires that 15 percent of all residential units within a project are affordable, with 10 percent affordable to very-low-income households and 5 percent affordable to low-income

households. Residential development that is exempted from the provision of affordable housing as well as alternatives to the Standard Inclusionary Housing Component regulations are defined in the Code.

SACOG Affordable Housing Compact

The portion of the Swanston TVSP project area west of the tracks is part of the North Sacramento Redevelopment Area, and therefore subject to state redevelopment law requirements for affordable housing. State law requires the redevelopment agency to ensure that 15 percent of all housing units newly constructed or substantially rehabilitated in the redevelopment project area must be affordable and targeted to low and moderate income households and at least 40 percent of these units must be targeted to very low income households.

The City of Sacramento has voluntarily joined the SACOG Compact, which provides the following voluntary average jurisdiction-wide production goals for participating jurisdictions:

- At least four percent of all new housing construction will be affordable to very low-income families.
- At least four percent of all new housing construction will be affordable to low-income families.
- Up to two percent of the 10 percent goal could be met by housing affordable to moderate-income families.

The compact goals are not considered mandatory standards for each particular development project. However, the City of Sacramento reviews all proposed development projects and would determine compliance with this compact in order to meet the affordable housing needs within the Swanston TVSP project area.

North Sacramento Community Plan

The purpose of the Community Plan is to serve as a development guide to be used by the public and private sector when planning physical improvements in North Sacramento. The following North Sacramento Community Plan goals and objectives are applicable to the proposed Swanston TVSP project:

Housing Element

Goal: Encourage the conservation of existing housing stock, and the rehabilitation of marginal and substandard housing.

Objectives:

- Improve and upgrade physical conditions, public improvements, and services in physically declining neighborhoods.

Goal: Provide adequate housing opportunities to attract new residents and employment centers.

Objectives:

- Provide a mixture of housing types and densities to meet the needs of varying family size, age, and income levels.
- Increase employment opportunities in tandem with new housing construction

Neighborhood Environment Element

Goal: Conserve and build upon the positive qualities of the North Sacramento Community and at the same time eliminate those qualities that create negative perceptions.

Objectives:

- Attract new residential and commercial development to North Sacramento and increase employment opportunities for residents.

5.4 POPULATION AND HOUSING CHANGE IN THE SPECIFIC PLAN AREA

The proposed Swanston TVSP project is meant to serve as a long-term guide to future development around the Swanston Light Rail Station and is broken down into two distinct areas. The areas are designed to allow anticipated market conditions to dictate the rate of change in the Swanston TVSP project area rather than a concrete timeline that forces the transformation. Table 5-1 provides a summary of the Swanston TVSP project area population and housing growth projections through buildout of the proposed Swanston TVSP project. The figures below represent new growth that could occur in the project area. However, in attaining these development figures, some existing uses would be replaced, such that the net increase in dwelling units, population, and jobs would be slightly less than reported. Since much of the Swanston Station Specific Plan area is vacant or underutilized, where the new zoning is anticipated to increase density and alter the existing land uses, the replacement of existing land uses would not result in a considerable change in the future growth that could be accommodated in the project area or the impacts identified later in Chapter 6. The estimated reduction of about 6 percent in residential population would easily fall within the broad assumptions regarding average densities, areas available for development, and average household sizes that are used to predict future development.

Table 5-1
Swanston Station Specific Plan Area Growth Projections[a]

	Existing (2005)	Potential Development in the Strategic Plan Area	Potential Development in the Long-Term Plan Area	Potential Development under the TVSP (Strategic + Long-Term)	Total Potential Development in Plan Area in 2025[b]	Total Potential Development in Plan Area at Buildout
Dwelling units	2,137	366	2,230	2,596	2,503	4,733
Population	4,261	940	5,730	6,670	5,201	10,931
Jobs	7,116	155	1,496	1,651	7,271	8,767
Jobs/Housing Ratio[c]	3.3:1	0.42:1	0.67:1	0.64:1	2.9:1	1.9:1

Source: Sacramento Area Council of Governments and Bay Area Economics, Swanston Transit Village Market Analysis, Table 6, March, 2006; PBS&J, 2007.

Notes:

a. The projected figures with the Strategic Plan and Long-Term Plan represent the total new development that could occur in the plan area. The development that could occur in each of these areas may displace existing uses, and the net change in the Swanston TVSP project area dwelling units, population, and jobs would be slightly less than reported in this table. Based on a review of existing land uses, new uses in the Strategic Plan area could replace 22 existing units, which would be approximately 55 persons. New uses in the Long-Term Plan area could replace 132 units, which would be approximately 340 persons. The effect would be a reduction in future population growth of about 6 percent.

b. This column represents the total development of the Plan Area with the Strategic Plan.

c. An employee per unit ratio that exceeds 1.0 reflects the fact that there are more jobs than housing units within the City. An employee per unit ratio of 1.0 would mean that there is one job per housing unit.

Strategic Plan

The Strategic Plan area is the initial area targeted for development in the Swanston Station Specific Plan area and is expected to occur by around 2025. This initial development recognizes current development proposals in the Swanston TVSP project area, such as the application by Signature Properties. As shown in Figure 2-5, the Strategic Plan area, which is located south of El Camino Avenue between Erickson Street and Green Street, encompasses approximately 22.6 acres (42 parcels). A market analysis was prepared by Bay Area Economics to provide an overview of market opportunities surrounding the Swanston Light Rail Station.[15] According to the market analysis, over the next 20 years or so, this area could absorb 366 new dwelling units and 70,000 square feet of commercial floor area. This level of development represents approximately 940 persons[16] and 155 employees.[17] As a result, by 2025, the Swanston TVSP project area would have a population of about 5,200 and an employment of 7,270.

By comparison, SACOG projects a 2025 population of about 4,370 and employment of 7,955 for the Swanston TVSP project area. In addition, housing units that could occur in the Swanston TVSP

[15] Bay Area Economics, Swanston Transit Village Market Analysis, March 2006.

[16] Assuming an average household size of 2.57 persons.

[17] Employee calculations were derived based on the Sacramento General Plan Buildout Methodology and MIG totals for the Strategic Area and entire Swanston Station Transit Village Specific Plan Area.

project area (between 2009 and 2025) would be about 16 percent above what is currently projected by SACOG. Additionally, the zoning proposed for the Strategic Plan area would allow for an estimated 7,270 jobs, an approximate 8.5 percent decrease compared to what is currently projected by SACOG under existing zoning. Overall, the proposed Swanston TVSP project would result in a greater emphasis on housing than jobs.

Long-Term Plan

Due to unpredictable market conditions, it is speculative to anticipate how much development and how quickly it would occur beyond 2025 outside of the Strategic Plan area. As a result, future development outside the Strategic Plan area is estimated based on the capacity of the land to accommodate additional growth. Thus, the proposed Swanston TVSP project would maximize the land capacity in the remainder of the Swanston TVSP project area and revitalize portions of the subarea east of the tracks that is currently characterized by larger, newer buildings such as the Hilton Hotel and USAA Insurance complex. Development in the Long-Term Plan area would be approximately 2,230 new dwelling units and 435,515 square feet of commercial space. Assuming 2.57 persons per household, buildout of the Long-Term Plan area could result in 5,730 additional persons and 1,496 more employees.

THIS PAGE INTENTIONALLY LEFT BLANK

Chapter 6
Environmental Analysis

6.0 INTRODUCTION

The Environmental Analysis chapter of this Draft EIR describes the environmental and regulatory setting, impacts, and mitigation measures for each of the technical issues identified below (Sections 6.1 through 6.11). (Noted in parentheses after each issue is the acronym used in this chapter to identify impacts related to that issue.)

6.1 Aesthetics (AES)

6.2 Air Quality (AQ)

6.3 Biological Resources (BIO)

6.4 Cultural Resources (CR)

6.5 Geology, Soils and Seismicity (GE)

6.6 Hazardous Materials (HM)

6.7 Hydrology and Water Quality (HY)

6.8 Noise (NO)

6.9 Public Services (PS)

6.10 Utilities (UT)

6.11 Transportation (TR)

Section Format

Setting

Each section begins with a description of the project environmental setting and a regulatory setting as it pertains to a particular issue. The setting identifies baseline, "on-the-ground" conditions, as well as applicable plans, policies, and regulations that affect an issue. The environmental setting provides a point of reference for assessing the environmental impacts of the proposed Swanston Station Transit Village Specific Plan (Swanston TVSP project).

Impact Assessment and Mitigation Measures

The setting description in each section is followed by an impacts and mitigation discussion. The impact and mitigation portion of each section starts with an identification of standards of significance. These criteria are City-adopted thresholds to determine when an impact would be classified as "significant" or

"potentially significant." This classification of impacts into significant versus less than significant is important in CEQA, because mitigation measures (i.e., steps to avoid, eliminate, or ameliorate impacts) must be suggested for impacts that are considered to be significant. The impact discussion also describes if proposed Swanston TVSP project policies would reduce or eliminate impacts that are identified. In summary, it is reasonable to expect that the proposed Swanston TVSP project will change baseline conditions; however, only those changes that exceed the standard of significance are considered significant.

For some issue areas, the physical setting of the Strategic Plan area may have unique features different than the Long-Term Plan area. As a result, the type and/or intensity of impacts may vary between the two areas. Where the physical setting or impacts are different between the Strategic Plan and Long-Term Plan areas, the impact discussion has been divided to address each area (see further explanation below).

Key Terms. Key concepts and terms common in Chapter 6 are further defined below.

- **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 included in the City of Sacramento's Initial Study Checklist. If additional standards were determined to be necessary to amplify adopted 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 when it does not reach 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. In general, available information is insufficient to clearly declare the impact significant, but there is substantial evidence to support a conclusion that the impact may be significant. 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, or standards of significance. Mitigation measures 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 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:

  1. Avoiding the impact altogether by not taking a certain action or parts of an action;

  2. Minimizing impacts by limiting the degree of magnitude of the action and its implementation;

  3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

  4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

  5. Compensating for the impact by replacing or providing substitute resources or environments.

Methods of Analysis. For some issues, such as transportation or air quality, where there are a number of assumptions and steps involved in performing the impact assessment, a description of the methodology is offered to assist the reviewer in understanding the analysis.

Impact and Mitigation Presentation. Each individual impact discussion consists of two parts. The first part is an italicized summary impact statement that highlights the nature of the impact and its significance classification. Each impact summary statement is uniquely "coded," so that reviewers can readily reference an impact. The second part, following the italicized summary impact statement, provides an explanation of the impact and the rationale for its significance classification. All mitigation measures pertinent to each individual impact follow directly after the impact assessment. The degree to which the identified mitigation measure(s) would reduce the impact is also described.

Strategic Plan Area versus the Long-Term Plan Area

The proposed Swanston TVSP project is a long-term blueprint and framework for the development of the Swanston TVSP project, including the area surrounding the Swanston Light Rail Transit Station. The proposed Swanston TVSP project is intended to identify the uses, intensities, and public improvements that are desired as market conditions or public funding permit. Accordingly, the ultimate "buildout" of the proposed Swanston TVSP project has no defined timetable. The proposed Swanston TVSP project does recognize that there are key target areas within the Swanston TVSP project area, where private sector investment is already occurring and the plan can channel public investments to facilitate momentum for development around the light rail station. This area for initial investment and change is defined as the Strategic Plan area of the proposed Swanston TVSP project. A market assessment performed as part of the proposed Swanston TVSP project suggests that the amount of development assumed in the Strategic Plan area is what can reasonably be expected over the next 20 years or so, to the Year 2025. The Long-Term Plan area is the remainder of the Swanston TVSP project area. The growth and development in the Strategic Plan and Long-Term Plan areas comprise

the change anticipated under the proposed Swanston TVSP project and, although the levels of certainty between the two areas are different, the EIR addresses the effects of both in order to provide the City and the community full disclosure on the potential environmental effects were the Swanston TVSP to be adopted. The following discussion explains the treatment of footprint, population, and traffic and traffic-related impacts.

Footprint Impacts

Potential impacts for development can be readily identified for so-called footprint impacts; i.e., those impacts that are based on whether future development encroaches into an area, or footprint, that is sensitive. Sensitive areas include locations with identified biological or cultural resources, or flood, geoseismic, or environmental contamination hazards. The proposed Swanston TVSP project defines where future infill and new development is proposed, so that impacts on sensitive areas are identified in this EIR.

Population Impacts

Similar to footprint impacts, population-related impacts can be readily derived. Based on the projected land use changes at buildout under the Swanston TVSP project, estimates of dwelling units, population, and employment can be derived (see Chapter 5). In turn, future demand on public services and utilities can be predicted; however, timing of the demands for services and infrastructure depend on how quickly development occurs. Thus, the estimates of future public service and utility needs to support development are fairly well known for the Strategic Plan area but can only be generally estimated for the Long-Term Plan area.

Traffic and Traffic-Related Impacts

Transportation impacts, and related impacts like air quality and noise, are evaluated in the context of regional and citywide traffic models and population/employment forecasts. Of particular note, regional agencies and data sources, like the Sacramento Area Council of Governments (SACOG) and the SACMET regional land use data set, provide information to 2030. Thus, the ability of this EIR to forecast travel demand and impacts beyond this planning horizon depends greatly on the assumption used. As a result, impact significance and mitigation measures are defined for the amount of development anticipated in the Strategic Plan area (consistent with the market overview). Transportation impacts related to development associated with the Long-Term Plan Area are also reported but the assessment is more qualitative.

6.1 AESTHETICS

Introduction

The visual quality of an environment is shaped by the many constructed as well as natural elements that exist within it. Existing visual resources include 1) constructed features such as buildings, structures, parking areas, roads, roadway interchanges and overpasses, aboveground utilities, signs, and lighting fixtures; and 2) natural features including landforms and vegetation. These resources together define the scale relationships, and the line, form, color, and texture of an area's landscape setting. A development project may enhance or adversely affect the visual quality of a landscape setting through its effect on the constructed and natural features that define the setting. This section provides a description of existing visual conditions in the Swanston TVSP project area and describes the changes to those conditions that would result from implementation of the proposed Swanston TVSP project. The proposed Swanston TVSP project would enable a greater density of development by altering the land use and zoning designations that now apply in the Swanston TVSP project area.

Information to prepare this section was obtained from site visits and review of the City of Sacramento General Plan.

No concerns related to aesthetics were received in response to the Notice of Preparation (see Appendix A).

Setting

Project Area Visual Characteristics

The Swanston TVSP project area is generally flat, built out, and composed of low- to mid-rise industrial and office buildings and retail stores along the major roadways, some low-rise residential buildings along the outskirts of the Swanston TVSP project area, and undeveloped properties dispersed throughout the area. Railroad tracks bisect the area with El Camino Avenue and Arden Way providing access over the railroad tracks and to Highway 80. The Swanston TVSP project area is physically and visually divided into several subareas by both the light and heavy rail lines, El Camino Avenue, and Arden Way. Figures 6.1-1 and 6.1-2 provide photos of the Swanston TVSP project area as it exists today.

The west side of the Swanston TVSP project area contains a mix of single-family homes, industrial buildings, and heavy commercial uses along with some vacant parcels. The residential character of the Dixieanne and Ben Ali neighborhoods, portions of which fall within the Swanston TVSP project area, is predominantly small single-family homes with some utilitarian apartment buildings in the Dixieanne neighborhood. In contrast, larger-grain brick buildings and industrial warehouses are also scattered throughout the Swanston TVSP project area. The industrial and commercial areas on this side of the

Royal Oaks Light Rail Station

El Camino Avenue looking West from Railroad Track Overpass

Source: PBS&J, 2007.

FIGURE **6.1-1**
Photos

El Camino Avenue Looking West from Princeton Street

Looking North from the Intersection of Harvard Street and Arden Way

Source: PBS&J, 2007.

FIGURE **6.1-2**
Photos

Swanston TVSP project area are sparsely landscaped. For the most part, the roadways on this side of the Swanston TVSP project area are laid out in a predictable grid pattern creating uniform city blocks.

The Dixieanne Park, now called the Winner's Circle Park, is the only designated open space within the Swanston TVSP project area. Renovations of the park are nearly complete making the park a visual landmark in the area.

The area east of the railroad tracks is characterized by newer, mid- to high-rise office and commercial structures, including the United Services Automobile Association (USAA) complex and the Hilton Sacramento Arden West Hotel. These large-scale buildings are surrounded by large parking lots and well-maintained landscaping. Along Silica Avenue, there are older, industrial uses as well as some small-scale residential uses along Knoll Street. Roadways on this side of the Swanston TVSP project area are also arranged in a grid system, although Harvard Street, the major north-south collector east of the railroad tracks, is curvilinear. The Hilton Sacramento Arden West Hotel is 8+ stories tall and the tallest building in the Swanston TVSP project area.

Surrounding Area Characteristics

Several well-established neighborhoods and planning districts are located within and around the Swanston TVSP project area. Ben Ali, Cannon Industrial Park, Erikson Industrial Park, Northwood, Old North Sacramento, and South Hagginwood planning districts all surround the Swanston TVSP project area. The Ben Ali Planning District contains the Ben Ali neighborhood and the Old North Sacramento Planning District includes the Dixieanne neighborhood. Both districts are primarily located to the north of the Swanston TVSP project area. The surrounding area contains a diverse urban landscape, as described below.

The areas to the north and west consist primarily of residential development. These neighborhoods consist of smaller, primarily one-story, homes on small urban lots. The majority of the homes appear to have been remodeled at some point; many have new vinyl or stucco siding and replacement windows. There a few new homes scattered throughout the area. These new homes are generally much larger than their surrounding neighbors, and many have second floors. Typical front yards include small front lawns and a few trees. The Dixieanne Tot Lot is located a few blocks west of the Swanston TVSP project area. The Northwood Elementary is located a few blocks north of the Swanston TVSP project area.

The area to the south generally consists of industrial buildings, large warehouses on large lots with large, paved areas surrounding the buildings. Woodlake Elementary School is located just a few blocks southwest of the Swanston TVSP project area. Beyond the immediate surrounding area, the downtown skyline is visible from the majority of the Swanston TVSP project area. Downtown Sacramento is located approximately 3 miles southwest of the Swanston TVSP project area and is characterized by mid- to high-rise buildings.

The eastern boundary of the Swanston TVSP project area is the Capital City Freeway with large-scale industrial buildings, hotels, and the Arden Fair Mall beyond.

Light and Glare

Fundamentals of Light and Glare. Light that falls beyond the intended area is referred to as light trespass. Types of light trespass include spill light and glare. Nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments; however, these lights have the potential to produce spill light and glare, waste energy, and if designed incorrectly, could be considered unattractive.

Spill light can adversely affect light sensitive uses, such as residential neighborhoods at nighttime. Light dissipates as one moves away from the source.

Ambient light levels or illumination is measured in foot-candles.[1] Table 6.1-1 lists typical ambient illumination levels in foot-candles for exterior and interior lighting. "Horizontal" foot-candles measure light illumination on a horizontal surface, such as a sidewalk or parking lot; "vertical" foot-candles measure light illumination on a vertical surface.

Table 6.1-1
Typical Illumination Levels in Foot-Candles

Light Source	Foot-candles
Starlight	0.0002
Moonlight	0.02
Street Lighting	0.6-1.6
Direct Sunlight	6,000-10,000
Office Lighting	70-150

Source: City of Napa, Parks and Recreation Element Environmental Impact Report, SCH # 930 430 63, June 1993.

Glare results when a light source directly 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 caused by light reflections from pavement, vehicles, street lights, and building materials, such as reflective glass and polished surfaces. During daylight hours, the amount of glare depends on the intensity and direction of sunlight. Glare can create hazards to motorists and nuisances for pedestrians and other viewers. At night, artificial lighting can cause glare or disturb residents.

[1] A foot-candle is a measurement of the amount of light falling on an object. One foot-candle is equivalent to one lumen per square foot, where lumen is the unit of flux or rate of energy flow. Note that foot-candles are measurement units only of the light energy that can be seen by the human eye.

Existing Light and Glare Conditions. Existing ambient light sources within the Swanston TVSP project area include nighttime lighting for security purposes at businesses. Additional ambient lighting in the project vicinity is generated from nearby light industrial and commercial uses; roadway lighting on Arden Way, Dixieanne Avenue, and El Camino Avenue; and vehicle headlights. Nighttime lighting is located at both light rail stations within the Swanston TVSP project area. The Royal Oaks Station is small with no parking lot; therefore, lighting consists of downcast light standards along the loading platform. There are no notable sources of glare at this station; there is no glass or reflective metals used. Metal light standards are painted. The Swanston Light Rail Station also includes downcast light standards along the loading platform and no notable sources of glare. Parking is provided at this station, and while the light standards in the parking lot are much taller than those along the platform, they are also downcast.

Applicable Plans and Policies

City of Sacramento General Plan

The following General Plan policies are applicable to the proposed Swanston TVSP project:

Residential Land Use Element

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

Conservation and Open Space Element

Policy 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.

Proposed Swanston Station Transit Village Specific Plan

The following Design Guidelines are from the proposed Swanston Station Specific Plan. These guidelines would eliminate a significant visual impact or reduce it to a less-than-significant level.

Sidewalks and Landscaping

1Aii-4: Plan landscaping and select species that can help reduce light and glare impacts.

Layout and Orientation – Block Scale

2Ai-6: Plan the orientation of new buildings taking into consideration opportunities to reduce light and glare impacts.

Building Character and Facade Articulation

2Avii-5: Require all ground floor commercial uses to have non-reflective glass windows fronting onto sidewalks. When windows face southwest and west, frame them with protruding vertical and horizontal shading elements such as lintels, sills, and awnings to provide adequate protection from glare.

2Avii-9: Include a configuration of exterior light fixtures that emphasize close spacing and lower intensity light that is directed downward in order to minimize glare on adjacent uses and minimize impacts to night sky views.

2Avii-10: Avoid use of highly reflective mirrored glass walls as a primary building material for facades to reduce glare on nearby uses. Use Low E glass in order to reduce the reflective qualities of the building, while maintaining energy efficiency.

Lofts and Live-Work Units

2Bii-2: Ensure orientation of the glazed double height built spaces to face north to minimize glare and heat gain within buildings.

Impact Assessment and Mitigation Measures

Standards of Significance

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if the proposed Swanston TVSP project would:

- Have a demonstrable negative aesthetic effect; or
- Cast glare in such a way as to cause public hazard or annoyance for a sustained period of time.

Environmental Analysis

The potential visual impacts from development that could occur within Strategic Plan area as well as in the rest of the Swanston TVSP project area are defined in terms of whether the new uses and circulation, open space, and infrastructure improvements create visual contrasts or scale and height incompatibilities with existing development that would appear to be demonstrably negative or create glare that would be a public hazard. The following visual assessment is applicable to both the Strategic and the Long-Term Plan areas.

In order to describe impacts, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant impacts to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section, AES refers to Aesthetics.

AES-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not have a demonstrable negative aesthetic effect. (LTS)

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. 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 as well as the adequacy of the proposed Swanston TVSP project. It is expected that compliance with these adopted plans, as deemed appropriate by the reviewing bodies, would ensure that a project would be substantially consistent with existing development and the direction of future development within the City, and, as a result, would not result in significant negative aesthetic effects.

Physical and Visual Changes to the Project Area. As noted in the setting, the Swanston TVSP project area is currently characterized by two distinct subareas, east and west of the tracks. East of the tracks, the Swanston TVSP project area is more newly developed and defined primarily by large-scale commercial and industrial buildings, except for the single-family residential area in the northeast corner. By contrast, the area west of the tracks is marked by a mix of residential, heavy commercial, and industrial uses; vacant and underutilized parcels; and no amenities that visually connect the area. Many of the smaller streets in the Swanston TVSP project area do not currently have sidewalks. The area west of the track is almost completely devoid of open space and is largely paved. The only exception is the newly completed Winner's Circle Park along Dixieanne Avenue.

The proposed Swanston TVSP project would facilitate the revitalization of a predominantly developed area. New residential development could occur on the west side of the Swanston TVSP project area, and landscaping and sidewalk improvements would be anticipated primarily along Dixieanne Avenue, Calvados Avenue, and Evergreen Street. According to the market study undertaken to help define the development program for the proposed Swanston Station Specific Plan, approximately 366 dwelling units and 70,000 sf of commercial floor area could develop in the Strategic Plan area. Infill development at densities higher than currently found in the Swanston TVSP project area would be anticipated around the light rail station on both the west and east sides of the railroad tracks during development of the Long-Term Plan area. The landscaping and sidewalk improvements initiated during development of the Strategic Plan area would be extended to other roadways throughout the Swanston TVSP project area. New parks, greenways, and mews would be anticipated throughout the entire Swanston TVSP project area. These physical and visual changes would be visible primarily from within the Swanston TVSP project area, as the landscaping, lighting, open space, and street improvements would occur in the public realm along streets internal to the Swanston TVSP project area. Thus, the primary visible changes that would be visible from areas outside the Swanston TVSP project area would be those related to the new building heights and massing. As such, it would

be expected that the skyline would change around the transit station as a concentration of taller buildings, similar to the USAA complex and the Hilton Sacramento Arden West Hotel, would evolve in the long term.

Design Guidelines. Design Guidelines that would be adopted as part of the proposed Specific Plan build upon previous planning documents including the 2006 North Sacramento Residential and Commercial Design Guidelines, the North Sacramento Community Plan, and the City of Sacramento Pedestrian-Friendly Street Standards. The Design Guidelines would apply to any development in the Swanston TVSP project area. The guidelines address visual features, including roadways, sidewalks and landscaping, crosswalks and bulb-outs, cross-track connections, public-private interface, street furniture and lighting, and signage. Each of the major streets is addressed individually explaining the types of improvements needed to be made to make the area more pedestrian friendly and improve the overall visual character. Improvements include planting strips and sidewalks. New substantial open space areas are proposed in the form of greenways (e.g., open space corridors) and pocket parks. The Design Guidelines cited earlier under "Applicable Plans and Policies" specifically address massing, scale, and building design and layout, and would help ensure that future new development would not negatively affect the aesthetics of existing development. In short, the proposed Specific Plan recommends, in accordance with the Design Guidelines, a number of physical and design improvements that have the effect of enhancing the visual quality, particularly on the west side of the railroad tracks.

The scale and massing of new buildings would be determined by the allowed density, which would range from lower densities near existing neighborhoods to higher densities near the transit station. The development that could occur within Strategic Plan area is proposed to be compatible with the scale and massing of the single family homes in the Dixieanne neighborhood to the west, as well as with newly planned and developed projects of higher density, such as Victory Townhomes and Evergreen Estates. While proposed land use and zoning changes would allow the scale and density of site development to be greater than current conditions, it would not negatively change the visual character or the views to and from the site.

The changes that could take place on the west side of the railroad tracks as a result of the proposed land use and zoning changes would be more visually prominent due to the current condition of most of this area. However, the transformation of underutilized lots under the cohesive vision of the proposed Swanston TVSP project, including the streetscape improvements and addition of landscaping, would not be considered a negative change. The Design Guidelines encourage four- to five-story buildings along arterial roads, two- to three-story buildings for residential uses west of the tracks, three- to five-story buildings for residential areas closest to the transit station, and 10-15 story buildings east of the tracks. Residences in the area are currently one and two story and commercial and office uses east of the tracks range from one to eight plus stories. Appropriate density, massing, scale, building heights, and setbacks are included in the Design Guidelines. Proposed uses, building massing,

and scale within the proposed Swanston TVSP project area are intended to be visually compatible with uses and building mass and scale of the development surrounding the Swanston TVSP project area. Because these existing uses are similar and development under the proposed Swanston TVSP project would be sensitive to and reflective of the existing uses/building, stark visual differences as one enters and leaves the Swanston TVSP project area are not anticipated. As part of the transit overlay regulations that would apply in the Swanston TVSP project area once it is rezoned to RMX-TO or C-2-TO, future project development would be subject to review by the City prior to approval. All projects would be required to adhere to the overall design and development guidelines in the proposed Swanston TVSP project. The proposed Swanston TVSP project proposes guidelines that would improve the visual character of the area by providing more greenscape, creating visually cohesive neighborhoods, and creating a generally pedestrian friendly environment. The proposed Swanston TVSP project also proposes guidelines to avoid visually unattractive scale and massing at the block and building levels of development.

In light of the above, the proposed Swanston TVSP project would not degrade the visual character or quality of the area. Changes to the visual setting as a result of the proposed Swanston TVSP project would be less than significant.

AES-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not be expected to result in glare in such a way as to cause public hazard or annoyance for a sustained period of time. (LTS)

The increased intensity of development proposed by the proposed Swanston TVSP project would increase ambient light conditions. Moreover, the project calls for lighting on major and local roadways, public places, and park/recreational areas, which would further increase ambient lighting. The increased lighting could result in additional glare effects. However, the Design Guidelines recommend non-reflective glass for ground-floor commercial spaces and northerly orientations for buildings with double-glazed windows to reduce glare. Specifically, six guidelines in the proposed Swanston Station Specific Plan would help to reduce glare: 1Aii-4, 2Ai-6, 2Avii-5, 2Avii-9, 2Avii-10, and 2Bii-2. Policy 1Aii-4 applies to all landscaping and trees in planter strips within the right-of-way, Policy 2Ai-6 applies to the orientation of buildings, Policy 2Avii-5 applies only to commercial buildings, Policy 2Avii-9 addresses light specifications, Policy 2Avii-10 applies to the facades of all buildings, and Policy 2Bii-2 applies to lofts and live-work units. In addition, public roadways, greenways, mews, plazas, and recreational areas that would be lit would also be landscaped with street trees. The trees would reduce glare that could be annoying for sustained periods of time.

The Transit Overlay zoning district that would be applied in the Swanston TVSP project area to most of the area allows for greater setbacks in order to mitigate glare impacts. As a result, potential glare effects are considered to be less than significant.

Cumulative Analysis

The context for the evaluation of cumulative aesthetics impacts is the surrounding area within the viewshed of the Swanston TVSP project area. The cumulative context for glare would be other development that could affect the same sites that would be affected by glare generated by the project. Larger buildings, 10+ stories high, allowed east of the tracks would likely be visible from the west; however, it is unlikely that the low-rise development planned for west of tracks would be visible from the east side.

AES-3. Cumulative development in the same viewshed as the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not result in a demonstrable negative aesthetic effect. (LTS)

Future development within areas surrounding the Swanston TVSP project area would generally occur through infill development and would constitute further intensification of an already largely built-out area. This future development would occur in accordance with existing land use plans for these areas and would be subject to design review, which would consider the types and placement of planned development in the City. As a result, other development around the Swanston TVSP project area would continue to be similar to its surroundings. The most notable change in the cumulative geographic area would be project-related and would likely be a change in the skyline, with taller buildings around the station. This development would complement the existing mid- to high-rise buildings within the west side of the Swanston TVSP project area. Therefore, cumulative development would not have a demonstrable negative aesthetic effect and the cumulative change in visual character of the areas surrounding the Swanston TVSP project area would be less than significant.

AES-4. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with cumulative development surrounding the Swanston TVSP project area, would not result in glare in such a way as to cause public hazard or annoyance for a sustained period of time. (LTS)

New light sources associated with future development in the vicinity of the proposed Swanston TVSP project would not be expected to result in significant glare effects because of the City's existing development regulations controlling reflective building materials and lighting and the City's design review. Therefore, the cumulative effect of new glare sources would be less than significant.

As previously stated, the area surrounding the Swanston TVSP project area is largely developed, so generally, new development would replace existing uses, which could contain reflective surfaces. Design of future cumulative development would undergo design review by the City, which would include review of lighting specifications and building materials. This review would ensure that new development would not result in additional glare and would not cause public hazard or annoyance for a sustained period of time or cast light onto oncoming traffic. Therefore, the cumulative impact of glare would be less than significant.

THIS PAGE INTENTIONALLY LEFT BLANK

6.2 AIR QUALITY

Introduction

This section describes the climate in the Swanston TVSP 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. The section then evaluates how existing air quality conditions would change with development that would occur in accordance with the proposed Swanston TVSP project. At the end of the section, impacts of the proposed Swanston TVSP project on global greenhouse gas emissions and the potential for emissions to cumulatively contribute to global climate change are analyzed. No comments pertaining to air quality were received during circulation of the NOP.

Data sources used to prepare this section include the EIR prepared for the Sacramento Regional Transit District Northeast Corridor Project, which included the Swanston TVSP project area. In addition, the Sacramento Metropolitan Air Quality Management District (SMAQMD) Guide to Air Quality Assessment in Sacramento County, the California Air Resources Board (CARB) website, and the City of Sacramento General Plan were reviewed.

Setting

Regional air quality is influenced by the region's climate, topography, and pollutant sources. The region encompassing the City of Sacramento has physical characteristics, described below, that can, at times, create the potential for high concentrations of regional and localized air pollutants.

Climate and Meteorology

The Central Valley, which extends from south of Bakersfield to north of Redding, is bounded by the Sierra Nevada mountain range on the east, the Coast Range on the west, the Tehachapi Range on the south, and the Cascade Range on the north. These mountain ranges buffer the Central Valley from the marine weather systems that originate over the Pacific Ocean and are drawn inland by the jet stream. The primary breach in this barrier is the Carquinez Strait (the Strait exposes the midsection of the Central Valley to the Pacific Coast marine weather). The Sacramento region is noticeably affected by this marine influence, which moderates climatic extremes. This moderating influence is especially evident on summer evenings when cooling occurs as a result of the penetration of sea breezes through the Strait.

The climate in the Sacramento region is typically polarized between summer and winter seasons. The winter season is characterized by overcast days and lengthy periods of rain and drizzle. Winter temperatures range from an average low of 40°F to an average high of 57°F, with occasional overnight freezing temperatures. Annual precipitation averages 18 inches, 90 percent of which falls from November through April. Summer temperatures range from an average low of 70°F to an average

high of 90°F, with temperatures in excess of 100°F being fairly common. This high average summer temperature, combined with very low relative humidity, produces hot, dry summers. Prevailing winds are from the southwest with secondary winds from the northwest. Air stagnation due to formation of surface and/or elevated inversions is common in the late summer and fall. Surface inversions are formed when cool air is trapped close to the surface by a layer of warm air above it. Elevated inversions occur when a layer of cool air is suspended between warm air layers above and below it. Stagnation allows for the concentration of contaminants, subjecting persons in the region to elevated pollution levels and consequent increases in hazards to health.

The Swanston TVSP project area is within the Sacramento Metropolitan Air Quality Management District (SMAQMD), which is part of the Sacramento Valley Air Basin (SVAB). The San Francisco Bay Area Air Basin lies to the west, and the San Joaquin Valley Air Basin is located to the south. Considerable transport of pollutants occurs among these air basins, so that air quality in Sacramento County is partially determined by the release of pollutants elsewhere. In turn, pollutants generated in Sacramento County affect air quality in areas to the north and east.

Criteria Air Pollutants

Criteria air pollutants are a group of pollutants for which federal or State regulatory agencies have adopted ambient air quality standards. Criteria air pollutants include ozone (O_3), carbon monoxide (CO), and particulate matter 10 microns in size or less (PM_{10}) or 2.5 microns or less ($PM_{2.5}$). Table 6.2-1 lists the health effects associated with these pollutants. Most of the criteria pollutants are emitted directly from a source. 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]

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. The ambient air quality standards applicable to the Swanston TVSP project area are shown in Table 6.2-2. 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 are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified." Sacramento County's attainment status for the criteria pollutants is summarized in Table 6.2-3. The County is currently in non-attainment for state and federal 1-hour and 8-hour ozone standards, state and federal PM_{10} standards, and state $PM_{2.5}$ standards.

[1] California Air Resources Board website, www.arb.ca.gov/app/emsinv/emssumcat_query, Accessed September 18, 2007.

Table 6.2-1
Health Effects of Main Criteria Air Pollutants

Pollutant	Adverse Effects
Ozone	• 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	• 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	• 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.

Source: Environmental Protection Agency, Six Common Air Pollutants, http://www.epa.gov/air//urbanair/6poll.html, accessed October 19, 2007.

Table 6.2-2
Ambient Air Quality Standards Applicable in California

Pollutant	Averaging Time	Standard (ppm)*		Standard ($\mu g/m^3$)**	
		State[a]	Federal[b]	State[a]	Federal[b]
Ozone (O_3)	1-hour	0.09	0.12	—	—
	8-hour	0.07	0.08	—	—
Carbon Monoxide (CO)	1-hour	20	35	—	—
	8-hour	9.0	9.0	—	—
Particulate Matter – 10 microns or less (PM_{10})	24-hour	—	—	50	150
	Annual arithmetic mean	—	—	20	—
Particulate Matter – 2.5 microns or less ($PM_{2.5}$)	24-hour	—	—	—	35
	Annual arithmetic mean	—	—	12	15

Source: California Air Resources Board, Ambient Air Quality Standards, *http://www.arb.ca.gov/research/aaqs/aaqs2.pdf*, Accessed October 19, 2007.

Notes:

* ppm = parts per million by volume

** $\mu g/m^3$ = micrograms per cubic meter

a. California standards for ozone, carbon monoxide (except Lake Tahoe), suspended particulate matter (PM_{10} and $PM_{2.5}$), and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 on Title 17 of the California Code of Regulations.

b. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

Table 6.2-3
Criteria Air Pollutants Attainment Status for Sacramento County

Pollutant	State Standards	Federal Standards
Ozone (1-hour)	**Non-attainment (Serious)**	N/A
Ozone (8-hour)	**Non-attainment (Serious)**	**Non-attainment (Serious)**
Carbon Monoxide	Attainment	N/A
PM_{10}	**Non-attainment**	**Non-attainment (Moderate)**
$PM_{2.5}$	**Non-attainment**	Attainment/Unclassified

Source: Sacramento Metropolitan Air Quality Management District, Air Quality Standards Attainment Status Chart for Sacramento County, http://www.airquality.org/aqdata/attainmentstat.shtml, accessed October 19, 2007.

Monitors that collect air quality data are located throughout Sacramento County. The closest monitoring station to the project area is the Del Paso Manor Station, located at 2701 Avalon Drive. Recent air quality data collected at this monitoring site is summarized in Table 6.2-4. Classifications for the key criteria pollutants in Sacramento County are discussed below under "Existing Ambient Air Quality."

Table 6.2-4
Summary of Air Pollutant Data from Del Paso Manor Monitoring Station, Sacramento
(Compared to Federal and State Standards)

Pollutant	2004	2005	2006
Ozone (1-hour)			
Highest 1-hour (ppm)	0.110	0.134	0.125
Days > 0.125 ppm (Federal Standard)	0	0	1
Days > 0.09 ppm (California State Standard)	6	14	18
Ozone (8-hour)			
Highest 8-hour (ppm)	0.089	0.117	0.102
Days > 0.08 (Federal Standard)[a]	3	10	10
Carbon Monoxide			
Highest 8-hour (ppm)	3.15	3.51	3.49
Days > =9.5 ppm (Federal Standard)	0	0	0
Days > =9.1 ppm (California State Standard)	0	0	0
Particulate Matter (PM_{10})			
Highest federal Concentration	101.6	72.0	132.7
Highest State Concentration	52.0	77.0	67.0
Days > 50 ug/m^3 (California State Standard)	1	5	7
Days > 150 ug/m^3 (Federal Standard)	0	0	0
Particulate Matter ($PM_{2.5}$)[b]			
Highest 24-hour federal concentration (ug/m^3)	51.0	80.0	78.0
Highest 24-hour State concentration (ug/m^3)	58.2	81.4	78.0
Days > 65 ug/m^3 (Federal Standard)	0	5	2

Source: California Air Resources Board. www.arb.ca.gov, accessed June 19, 2007.

Notes:

a. There is no State 8-hour ozone standard.

b. There is no State 24-hour $PM_{2.5}$ standard.

Existing Ambient Air Quality

The criteria air pollutants most relevant to air quality planning and regulation in Sacramento County include ROG, NO_x, CO, PM_{10} and $PM_{2.5}$. Each of the relevant criteria pollutants is briefly described below in the context of Sacramento County attainment status.

Ozone (O_3) is a gas that is formed when ROG and NO_x – both byproducts of internal combustion engine exhaust – 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 Environmental Protection Agency (EPA) has designated the Sacramento area as a "serious" non-attainment area for the 8-hour standard. Sacramento County is also in "serious" non-attainment for the State 1-hour and 8-hour standards.

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 and motor vehicles operating at slow speeds are the primary source of CO in Sacramento County, 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 (PM_{10} and $PM_{2.5}$) consists of extremely small, suspended particles or droplets. PM_{10} refers to particles 10 microns or smaller in diameter. $PM_{2.5}$ is a subset of PM_{10} and refers to particles 2.5 microns or smaller in diameter. Some sources of PM_{10}, like pollen and windstorms, are naturally occurring. However, in populated areas, most PM_{10} is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities. $PM_{2.5}$ is mostly a product of incomplete combustion of fuels. Diesel engines are a particularly noteworthy source of a type of $PM_{2.5}$ that has been identified for its severe long-term adverse health impacts and widespread

exposure to much of the state's urban population. Small-diameter particulates are of concern because they can be inhaled deep into the lungs and cause respiratory problems.

Monitoring data for Sacramento County shows that the Sacramento area is currently in non-attainment of the federal PM_{10} standard and unclassified for federal $PM_{2.5}$ standards. The Sacramento region is also in non-attainment status for the more stringent state PM_{10} and $PM_{2.5}$ standards.

Nitrogen Oxides 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. Nitrogen oxides form when fuel is burned at high temperatures, as in a combustion process. The primary manmade 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 NO_2.

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. Natural sources of emissions include windblown dust and wildfires. Farms, construction sites, and residential areas can also contribute to toxic air emissions. Due to mounting scientific evidence of adverse health effects, the California Air Resource Board (CARB) has recently identified diesel particulate matter as a TAC. Regulation of TACs is achieved through federal and state controls on individual sources. The 1990 Clean Air Act (CAA) Amendments offer a comprehensive plan for achieving significant reduction in both mobile and stationary source emissions of certain designated Hazardous Air Pollutants (HAPs), with a goal of achieving the U.S. Environmental Protection Agency's (EPA) one in one million cancer risk from TACs. 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.

TAC impacts are assessed using a maximum individual cancer risk that estimates the probability of a potential maximally exposed individual 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 out of 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 or maximum available control technology 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. 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 greater than 750 cancer cases per 1 million people in 2001. This represents the lifetime risk that more than 750 people in 1 million may contract cancer from inhalation of toxic compounds at current ambient concentrations under a maximally exposed individual scenario.[2]

While toxic air contaminants are produced by many different sources, the largest contributor to inhalation cancer risk in California is diesel particulates. Diesel particulate matter, a particular type of $PM_{2.5}$, is emitted into the air via heavy-duty diesel trucks, buses, construction equipment, and passenger cars. According to CARB's Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, the existing average statewide potential cancer risk from diesel particulate matter is over 500 potential cancer cases per one million people. Based on the CARB data, the existing ambient TAC risk within the project area already exceeds the 10 cancer cases per 1 million people risk threshold. Levels of TACs are likely exacerbated by the fact that the portions of the project area are located along the Capital City Freeway to the southeast and that the Union Pacific rail line traverses the project area.[3]

Sensitive Receptors

Sensitive receptors include individuals as well as specific land uses. Some individuals are considered to be more "sensitive" than others to air pollutants. The reasons for greater sensitivity than average include health problems, proximity to the emission source, or duration of exposure to air pollutants. 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 receptors 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 the human respiratory function.

Sensitive receptors in the vicinity of the Swanston TVSP project area include residential uses within the project area and surrounding the project area, including the neighborhoods of Dixieanne (to the west), South Hagginwood (to the north), Ben Ali (to the north), and to a lesser extent Woodlake (to the southwest). Dixieanne Park at Dixieanne Avenue and Erickson Street on the west side of the Swanston TVSP project area is the only recreational facility within the project area. Northwood Elementary School in the South Hagginwood neighborhood, Dixieanne tot lot in the Dixieanne neighborhood, and Woodlake Elementary School in the Woodlake neighborhood are sensitive receptors outside the project area but nearby (within ¼ mile). The Swanston TVSP project would permit residential land uses in both the proposed Residential Mixed Use and Mixed Use land use designations for the project area that

[2] California Air Resources Board, Maps of Estimated Cancer Risk from Air Toxics, http://www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm, Accessed November 16, 2007.

[3] California Air Resources Board, Maps of Estimated Cancer Risk from Air Toxics, http://www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm, Accessed November 16, 2007.

could be affected by ROG, NO_x, PM_{10}, and CO emissions resulting from future development within and outside the project area.

Existing Emission Sources and Concentrations

There are many types of air pollutant sources in Sacramento County. These sources can be divided into two categories: mobile and stationary sources. The CARB maintains an emission inventory of air pollutants within the State's air basins and counties inside those air basins. Table 6.2-5 presents the latest emission inventory of reactive organic gases, nitrogen oxides, carbon monoxide, and particulate matter for Sacramento County. The "On-road Vehicles Mobile Sources" category of the inventory is the primary source of ROG, NO_x, and CO in Sacramento County. The "Miscellaneous Processes" category, which includes activities such as construction and farming operations, contributes almost all of the particulate matter generated in Sacramento County.

Table 6.2-5
2005 Estimated Annual Emissions for Sacramento (tons/day)

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**
Areawide 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
Grand Total	**77.5**	**390.9**	**85.1**	**43.5**	**15.9**

Source: California Air Resources Board, Almanac Emission Projection Data, http://www.arb.ca.gov/app/emsinv/emssumcat.php, Accessed June 22, 2007.

Applicable Plans and Policies

Air quality in the project area is regulated by the 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 governments.

Since many air pollution problems are regional in nature, the federal government sometimes designates multi-county areas or areas consisting of several different air districts as "Non-attainment Areas." The "Non-attainment Area" designation for areas comprising more than one district means that these individual local agencies must work together to solve regional air pollution problems. The Sacramento Ozone Non-attainment Area includes all of Sacramento County and parts of Yolo, Solano, Sutter, and Placer Counties.

Federal

U.S. Environmental Protection Agency. The 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 emissions 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 non-attainment 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 non-attainment areas, using a combination of performance standards and market-based programs.

Federal Clean Air Act. The Federal Clean Air Act (FCAA 42 USC 7401-7661), 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 FCAA requires that regional plans be prepared for non-attainment areas illustrating how the federal air quality standards will be met. The CARB approved the most recent plan in 1994 for the Sacramento ozone non-attainment area, and submitted it to the EPA. The plan was approved by the EPA in 1996. The SIP plan consists of a list of reactive organic gas and nitrogen oxide 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.

Federal Ozone Attainment Plan. Sacramento County is subject to a 1994 Federal Ozone Attainment Plan (the Sacramento Area Regional Ozone Attainment Plan). This plan was adopted by five air districts in the Sacramento area in order to build upon existing state and local air quality programs. The Plan contains adopted measures, implementation and adoption schedules for new measures, emission inventories, modeling results, contingency measures, and emissions reduction demonstrations that guide reduction of emissions in the Sacramento Region. Sacramento County needed to demonstrate attainment of federal ozone standards by 2005. In February 2006, the CARB approved the Sacramento Regional Non-attainment Area 8-Hour Ozone Rate of Progress Plan to update the previous plan with new emissions factors for attainment of the 1-Hour and 8-Hour federal ozone standards. The EPA has established year 2013 as the new attainment deadline for the Sacramento Region.

State

California Clean Air Act. The State of California air quality standards are generally more stringent than the corresponding federal standards for the criteria air pollutants. The California Clean Air Act (CCAA) requires non-attainment areas to plan for the eventual attainment of the standards. Areas have been designated as attainment or non-attainment with respect to the ambient air quality standards. The timeframe given to meet state air quality standards depends upon the severity of air quality problems. The California Health and Safety Code Section 40914(A) requires that air districts design a plan to achieve an annual reduction in district-wide emissions of five percent or more for each non-attainment criteria pollutant or its precursor, averaged every consecutive three-year period, beginning at base year 1987.[4]

California Air Resources Board. The CARB, a part of the California 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.

Toxic Air Contaminants. 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 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.

[4] Sacramento Metropolitan Air Quality Management District website: www.airquality.org/stateplan, March 17, 2005.

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 a health risk assessment 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 in their 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 diesel particulate matter as a TAC 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 the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. This plan identifies diesel particulate matter as the predominant TAC in California and proposes methods for reducing diesel emissions.

Particulate Matter. 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 PM_{10} 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 standards in the SVAB. 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 non-attainment area, maintain the region's portion of the SIP for ozone. The Sacramento Air Basin'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 Non-attainment Area's portion of the SIP is contained in the Sacramento Area Regional Ozone Attainment Plan. The most recent update of the Plan was adopted by the SMAQMD on January 26, 2006.

As of June 1, 2006, the SMAQMD established an updated mitigation fee rate of $14,300 per ton of emissions in excess of the SMAQMD NO_x threshold. 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 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 funding for early or extra emission reductions, for example, by accelerating the development and commercialization of advanced emission control technology, accelerating the turnover rate of old equipment to newer and cleaner equipment, or helping to reduce costs to the regulated community. Projects to reduce emissions from on-road heavy-duty vehicles, idle reduction technologies, off-road diesel equipment, transportation refrigeration units, off road spark-ignition equipment, marine vessels, locomotives, and agricultural engines are also eligible for grants.

For PM_{10}, 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. The SMAQMD Guide to Air Quality Assessment defines screening levels of significance and mitigation strategies for development projects. Appendix B would apply to the subsequent development that would occur in accordance with Swanston TVSP project. Specifically, Table B-1 from the Guide defines the appropriate level of mitigation for the amount of ground being disturbed at any given point for each development project within the project area. If a project proponent elects to disturb more than 15 acres on any given day (which would not be expected under the conservative assumptions for the Strategic Plan but could occur under the Long-Term Plan), the SMAQMD recommends that the proponent model the PM emissions with a PM modeling program.

The SMAQMD rules that relate to development within the Swanston TVSP project are 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 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 402 – Nuisance.** Prohibits a person from discharging, from any source whatsoever, such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property.

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

- **Rule 442 – Architectural Coatings.** Sets ROG 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 ROG from the application of products used for bonding two surfaces. Also regulates the storage and disposal of solvents associated with such applications.

City of Sacramento General Plan. The City of Sacramento General Plan does not contain an Air Quality Element and there are no specific goals or policies that pertain to air quality.

Arden Arcade and North Sacramento Community Plans. The portion of the Swanston TVSP project area east of the railroad tracks is located within the Arden Arcade Community Plan Area. While the Arden Arcade Community Plan has an established boundary and land use map, the plan area does not have its own planning document with policies specific to its location.

The portion of the project area west of the railroad tracks is within the North Sacramento Community Plan area. The purpose of the North Sacramento Community Plan is to serve as a development guide to be used by the public and private sector when planning physical improvements in North Sacramento. The following goals and policies from the North Sacramento Community Plan are applicable to the proposed Swanston TVSP project:

Transportation Element

Objective: Explore ways to promote and facilitate the use of alternative transportation modes which rely less on the private automobile to reduce traffic congestion and improve air quality.

Issues Not Addressed in the Impact Analysis

Toxic Air Contaminants

As previously stated, TACs become a health issue if humans are exposed for a long period of time. Therefore, this discussion of the potential TACs due to development within the Swanston TVSP area focuses solely on TACs emitted during operation of facilities, rather than construction. The Swanston TVSP project proposes the gradual development of the project area into one of mixed uses, intensifying residential uses around the light rail stations.

As development occurs in the Swanston TVSP project area, TACs could be generated from stationary sources (e.g., backup diesel generators, printing operations, dry cleaning operations, etc.) associated with the allowed land uses. A risk reduction and audit plan would be required and the business would have to comply with SMAQMD Rule 904 Air Toxics Control Measures. Both of these measures would ensure that potential risks from stationary TAC sources in or around the project area would be reduced to acceptable levels.

There is one stationary source close to the Swanston TVSP project area that reports its TAC emissions to the CARB, the Interstate Brands, Inc. facility at 1324 Arden Way, on the southeast corner of Arden Way and Harvard Street. Interstate Brands is located immediately adjacent to light industrial (M-1) and heavy industrial zones (M-2), general commercial with transit overlay zone, and office building zone on the southeastern portion of the project site. Sensitive land uses, such as residential uses, are currently located approximately 900 feet from the facility. According to the CARB, the facility has not exceeded the threshold that triggers preparation of a health risk assessment but is required to report its emissions.[5]

Automobiles and especially diesel-fueled trucks associated with future development in accordance with the Swanston TVSP project would generate TACs. However, the proposed Swanston TVSP project would result in more residential, office, and retail uses, and less commercial/industrial uses that are known to involve more truck-intensive (e.g., large commercial warehouses or distribution centers). The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005) cites several recent studies linking motor vehicle TAC emissions with health impacts. As a result of these findings, the CARB recommends that new sensitive land uses (including residential) not be sited within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or within 1000 feet of large commercial warehouses or distribution centers.[6]

A central portion of the project area borders the Capital City Freeway for about 600 feet, and the existing uses are retail and light industrial businesses. This stretch could experience a change in land use to a more residential character during development in Long-Term Plan area. If a parcel develops

[5] California Air Resources Board, Facility Search Tool, http://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php, Accessed November 21, 2007.

[6] California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005, pp. 8-15.

with residential uses in this area, site plans that would provide buffer zones as recommended by the CARB Handbook would be expected to reduce health impacts from freeway TAC sources to acceptable levels.

Impact Assessment 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 development that could occur under the proposed Swanston TVSP project. Development in the Strategic Plan area is anticipated to occur first, with buildout anticipated in year 2025. Development through buildout of the TVSP would occur in the Long-Term Plan area. As explained in Chapter 6.0, the evaluation is programmatic in nature, and considers general air quality impacts associated with the amount of development and the improvements that could occur in the two plan areas, but does not consider potential impacts of specific development projects.

In the Strategic Plan area, it is projected that approximately 23 acres (42 parcels), concentrated south of El Camino Avenue and between Erickson and Green Streets, could develop. Development in accordance with the Swanston TVSP project could total 366 new dwelling units and 70,000 square feet of commercial floor area. In addition, open space, landscaping, and circulation improvements identified for the Strategic Plan area are assumed to occur by the year 2025.

Development in the remainder of the Swanston TVSP project area (the Long-Term Plan area) is based on the capacity of the land to accommodate additional growth under the proposed zoning regulations. Excluding the area covered by the Strategic Plan area, the rest of the Swanston TVSP project area could accommodate about 2,230 new dwelling units and 435,515 square feet of commercial space. In addition, many of the proposed improvements to the circulation, open space, and utility networks recommended in the Swanston TVSP project would occur in this area.

Construction Emissions. Because the timing of construction and types of construction equipment are unknown at this time, default information provided by URBEMIS 2007 version 9.2.2 was used to estimate construction phasing and the type and number of construction equipment. Development within the Strategic Plan area is expected to occur by 2025, although this analysis conservatively assumes construction occurred in 2008 which results in higher construction vehicle emissions (URBEMIS assumes vehicle emission rates in 2025 would be lower than emission rates in 2008 due to improvements in vehicle efficiency). Please refer to Appendix B for URBEMIS modeling data. The same approach was used to analyze both the Strategic Plan and the Long-Term Plan, except that the Long-Term Plan was evaluated for the Year 2025.

Operational Emissions. Operational emissions are generated by the normal day-to-day activity of a particular land use. These activities include the heating and cooling of buildings, landscape maintenance, emissions from increased traffic, and the use of consumer products by employees. The largest contributor to operational emissions from the Swanston TVSP project would be mobile sources;

that is, vehicle trips associated with the future land uses in the project area. Operational emissions of criteria pollutants are estimated using the URBEMIS 2007 model (Version 9.2). The daily trip generation rates used in the proposed Swanston TVSP project traffic study were used as input to the URBEMIS model. Pollutant emission rates for mobile sources are expected to decrease with time as cleaner vehicles using the latest control technologies join the fleet. To assure worst-case estimates of project operational emissions, the URBEMIS model was run assuming buildout of the Strategic Plan area in the year 2008 and of Long-Term Plan area in the year 2025. Please refer to Appendix B for additional modeling assumptions and full results.

Localized CO 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. Please refer to Appendix B for model results.

CO concentration levels are highest near crowded or congested intersections where traffic is slow or idling. The Swanston TVSP project would allow future land uses that increase traffic volumes on surrounding roadways, which would degrade the existing level of service (LOS) and increase CO concentrations at nearby intersections. Normally, barring other environmental considerations, CO concentrations should be analyzed at intersections classified as LOS "E" or worse, which is usually considered to be "unacceptable" for traffic circulation.

The closest monitoring station to the project area is the Del Paso Manor Station at 2701 Avalon Drive. 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 – 2006 from the Del Paso Manor Station was used as the 8-hour background concentration.

Particulate Matter. Development that could occur in the Swanston TVSP project area would generate emissions of particulate matter, particularly through additional vehicular trips associated with people living and working in the project area. Particulate matter from fugitive dust is produced from earth-moving activities (e.g., grading and excavation activities) which is different from particulate matter produced as a by-product of combustion. Particulate matter from fugitive dust generating sources is primarily composed of PM_{10} with a relatively small fraction consisting of $PM_{2.5}$. Conversely, particulate matter from combustion sources is primarily composed of $PM_{2.5}$ with a small fraction consisting of PM_{10}. Future land uses that could occur in accordance with the Swanston TVSP project would create emissions of PM_{10} from construction and operational activities. This analysis focuses on the area of land that could reasonably be expected to be disturbed at any one time making conservative assumptions to ensure that the maximum emissions that could occur are acknowledged. In the Strategic Plan area, individual development projects would be submitted to the City in accordance with the Swanston TVSP project, if the proposed project is adopted. At this time, it is not possible to anticipate

whether some of the targeted development areas within the Strategic Plan area might be disaggregated to form smaller development sites or aggregated to create larger development sites. To identify the maximum particulate matter emissions for the entire Strategic Plan area, the estimated development acreage was treated as a single large-scale project. The default values in URBEMIS assume that one quarter of the acreage of a construction/development site could be graded on a maximum day, meaning that for the Strategic Plan area, about 5.65 acres.

Standards of Significance

A significant impact would occur if the Swanston TVSP project would:

- Increase nitrogen oxide (NO_x) levels above 85 pounds per day for short-term effects (construction);
- Increase either ozone precursors, nitrogen oxides (NO_x) or reactive organic gases (ROG), above 65 pounds per day for long-term effects (operation);
- Emit particulate matter (PM_{10}) that would cause local concentrations equal to, or greater than, 5 percent of the California Ambient Air Quality Standards (CAAQS) (50 micrograms/cubic meter for 24 hours) if there is an existing or projected CAAQS violation; however, if a project's NO_x emissions during construction or operation are below the NO_x thresholds stated above, it is assumed that the project's effects on local PM_{10} concentrations would be below the CAAQS thresholds stated above;
- Result in CO concentrations that exceed 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.

Environmental Analysis

In order to determine air quality impacts due to construction and operation of the proposed Swanston TVSP project, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant impacts to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section, AQ refers to Air Quality.

Strategic Plan Area – Year 2025

AQ-1. Development that could occur within the Strategic Plan area would generate construction-related emissions of NOx; however, the predicted amounts would be below the threshold of significance of 85 pounds per day. (LTS)

Development that could occur according to the Strategic Plan would generate emissions of ozone precursors. These activities could involve approximately 366 dwelling units, 70,000 square feet of commercial space, roadway and sidewalk improvements, open space improvements, and landscaping and utility upgrades within the Strategic Plan area. Since ozone can result in significant adverse health and environmental effects, it is important to

consider ozone precursors ROG and NO_x when addressing construction impacts. Construction in the Strategic Plan area could occur any time between approval of the Swanston TVSP project and approximately 2025. Conservative assumptions have been used to forecast NO_x emissions for the Strategic Plan area, as described earlier under "Methods of Analysis."

Based on these conservative assumptions, NO_x emissions for the development that could occur in the Strategic Plan area are shown in Table 6.2-6. Maximum construction-related NO_x emissions in the Strategic Plan area would occur during site grading and generates about 38 pounds per day, compared to the City's standard of significance of 85 pounds per day. As a result, construction equipment NO_x emissions would not exceed the standard of significance during any of the construction phases, and this temporary air quality impact would be less than significant.

Table 6.2-6
Construction Emissions of Strategic Plan (Peak Pounds per Day)

Construction Phases	NOx	PM_{10}
Mass Site Grading	37.80	131.04
Paving	22.27	1.68
Building Construction	28.10	1.95
Architectural Coating	0.28	0.04
Maximum Daily Emissions	**37.80**	**131.04**
Exceeds Threshold?	**No**	**Possibly**

Source: PBS&J, 2007.

Note:

Emissions are based on a hypothetical scenario that treats the Strategic Plan area as a single development project. URBEMIS 2007 default assumptions have been used to estimate how much grading could occur on the maximum day and to determine the mix of construction equipment that would be used. In reality, individual construction projects would occur between now and approximately year 2025 (when development of the Strategic Plan area is anticipated to be completed). Emissions further in the future (i.e., closer to 2025) would be less because construction equipment and vehicles would be more efficient. The individual construction projects would also be smaller than assumed in the model run; again, resulting in less emissions than reported in this table.

AQ-2. Development that could occur in the Strategic Plan area would generate construction-related emissions of particulate matter (PM_{10}) that could exceed SMAQMD standards. (PS)

Development that could occur in the Strategic Plan area could involve grading to accommodate the new land uses, improve the circulation and open space facilities, and upgrade local utilities. Grading activities can involve clearing and leveling the land using heavy equipment such as scrapers, bulldozers, and backhoes. Particulate matter (e.g., fugitive dust, PM_{10}, or $PM_{2.5}$) is generated during this construction-period activity as the ground is disturbed. The total amount of particulate matter generated is normally related to the size of the area being graded. The larger the area being graded at one time, the more particulate matter is created. Particulate

emissions would also occur during other construction phases as well, such as during paving, building construction, and architectural coating as shown in Table 6.2-6.

As shown in Table 6.2-6, emissions of particulate matter could reach a maximum of about 131 pounds per day during site grading. As explained earlier under the description of the methodology, this emissions estimate is based on a conservative assumption that a maximum of 5.65 acres, or 25 percent of the 23-acre Strategic Plan area, could be disturbed by grading activities at any one time. PM_{10} emissions from grading and other similar activities related to travel over unpaved ground and soil movement have the potential to cause violations of the PM_{10} CAAQS on and near construction sites. The SMAQMD recognizes this potential and recommends the implementation of standard dust control measures that become more stringent as the size of the active grading area increases. For active areas greater than 15 acres, the SMAQMD recommends that dispersion modeling be used to determine if the CAAQS would be violated and to assure the effectiveness of any additional control measures to avoid such violations.

During other construction phases, maintenance of the PM_{10} CAAQS would be assured by project compliance with the City's standard of significance (i.e., if construction emissions are below the SMAQMD NO_x emission threshold, the project will be below the PM_{10} concentration threshold as well). As shown under Impact AQ-1, the construction emissions from potential development in the Strategic Plan area would be below the NO_x threshold. Therefore, in accordance with the City's significance criteria, particulate matter emissions from non-grading construction activities within the Strategic Plan area would have a less-than-significant impact on local PM_{10} concentrations.

MITIGATION MEASURE. As development occurs in the Strategic Plan area, individual projects would be subject to Table B-1 of the SMAQMD's Guide. This table lists various acreages and applicable mitigation measures that can reduce PM_{10} emissions. For construction projects where the maximum ground disturbance is less than 15 acres, which would characterize all likely projects within the Strategic Plan area, these measures, along with the SMAQMD's Rule 403 on fugitive dust, would effectively reduce impacts of individual projects to less than significant. With the above-mentioned conservative estimate of 5.65 acres of disturbed land at any one time, grading in the Strategic Plan area would fall into the category of Level One Mitigation as listed in Table B.1 of the SMAQMD Guide. If the maximum acreage graded is above that assumed in this analysis, a higher level of mitigation would be necessary. Implementation of the recommended mitigation measure would ensure that impacts due to emissions of PM_{10} would be reduced to a less-than-significant level. (LTS)

AQ-2.1 *Particulate Matter Emission Reduction.* The project applicant/developer shall implement the following reduction measures, depending on the size of the proposed development. The project applicant/developer shall ensure that these measures are conducted by requiring that they be included in all construction contracts for all phases of construction and demolition activities.

a) If a project requires that the maximum disturbance for grading at any given time is 5 acres or less, no mitigation measures would be required unless the SMAQMD stipulates otherwise.

b) If a project requires that the maximum disturbance for grading at any given time is between 5.1 and 8 acres, Level One mitigation is required, as specified by the prevailing SMAQMD Guide at the time a particular development project is approved.

- During clearing, grading, earth-moving, or excavation operations, fugitive dust emissions shall be controlled by watering exposed soil two times per day; and
- Maintain two feet of freeboard space on haul trucks.

c) If a project requires that the maximum disturbance for grading at any given time is between 8.1 and 12 acres, Level Two mitigation is required, as specified by the prevailing SMAQMD Guide at the time a particular development project is approved.

- During clearing, grading, earth-moving, or excavation operations, fugitive dust emissions shall be controlled by watering exposed soil three times per day;
- Soil piles shall be watered three times daily; and
- Maintain two feet of freeboard space on haul trucks.

d) If a project requires that the maximum disturbance for grading at any given time is between 12.1 and 15 acres, Level Three mitigation is required, as specified by the prevailing SMAQMD Guide at the time a particular development project is approved.

- Water all exposed soil with sufficient frequency as to maintain soil moistness;
- Maintain two feet of freeboard space on haul trucks; and
- Use emulsified diesel or diesel catalysts on applicable heavy duty diesel construction equipment.

AQ-3. Development that could occur within the Strategic Plan area would contribute to operational emissions of ozone precursors; however, the net increase in emissions would not exceed SMAQMD thresholds. (LTS)

New development that could occur in the Strategic Plan area would generate a net increase in criteria pollutants associated with operation of new residential and commercial uses. ROG and NO_x are the primary criteria pollutants of concern in Sacramento County because they react to form O_3, which is considered a criteria pollutant. The County is currently in nonattainment of the federal and state ozone standards. PM_{10}, while an issue in Sacramento County, is not

typically produced in high amounts by project operation. The SMAQMD sets no emission thresholds for PM_{10} for the long-term operational phase of a project.

Future development of the Strategic Plan area would emit ozone precursors from two source types: (1) from stationary equipment/activities related to the future land uses (such as water heaters, boilers, paint and solvent use, etc.), and (2) from the increase in traffic associated with these land uses. The amount of ROG and NO_x from stationary and mobile sources that could be generated by development in the Strategic Plan area was calculated using the URBEMIS 2007 modeling program.

Based on the market study prepared for the Swanston TVSP project, the Strategic Plan area encompasses a mix of parcels that are largely vacant or underutilized. The projected development that could occur in the Strategic Plan area (potentially 366 dwelling units and 70,000 square feet of commercial space) would occupy vacant parcels; however, several parcels in the Strategic Plan area are occupied with retail and light industrial businesses. As a result, to accurately reflect the change in emissions from development that could occur in the Strategic Plan area, the emissions from existing uses that could be displaced are subtracted from the emissions attributable to the new uses. Accordingly, the emissions reported in Table 6.2-7 account for the increase in emissions from the new uses, as well as the reduction in emissions from uses that could be removed. Table 6.2-7 indicates that development that could occur under the Strategic Plan would not exceed the SMAQMD threshold of 65 pounds per day for ROG and NO_x.

The different emission sources identified in Table 6.2-7 reflect the output of the URBEMIS 2007 model. The table reveals that the largest source of emissions for both existing and proposed uses is related to emissions from traffic (motor vehicles), although consumer products (aerosols and solvents, for example, used in daily household activities) are also a major contributor to ROG emissions from the new uses that could be accommodated under the Strategic Plan. The net emissions of ROG (17.55 pound per day) and NO_x (0.45 pounds per day) would not exceed SMAQMD thresholds. Therefore, emissions of ozone precursors from development that could occur in the Strategic Plan area would be less than significant.

AQ-4. Development that could occur under the Strategic Plan would increase traffic volumes in some locations that, in turn, would contribute to increased CO concentrations near roadways and intersections; however, the resulting CO concentrations would not exceed the 1-hour state standard of 20.0 ppm or the 8-hour state standard of 9.0 ppm. (LTS)

Future development that could occur in the Strategic Plan area (estimated at 366 dwelling units and 70,000 square feet of commercial space) would add traffic to existing roadway segments and intersections in and around the Swanston TVSP project area. This additional traffic would emit CO. CO concentrations are highest at intersections where there is congestion and traffic is slow. A letter grading system is commonly used to describe the "level of service" (LOS) at intersections, with LOS A representing "free flow" and minimal delays and LOS F representing highly congested conditions where, for example, motorists may need to wait

Table 6.2-7
Operational Emissions Associated with Development of the Strategic Plan Area

	Emissions in Pounds per Day	
Emissions Source	**ROG**	**NOx**
Emissions from Proposed Land Uses		
Natural Gas	0.32	4.17
Landscape Maintenance	0.25	0.04
Consumer Products	16.52	0.00
Architectural Coatings	2.87	0.00
Motor Vehicles	27.00	20.21
Maximum Daily Emissions from New Land Uses	**46.96**	**24.42**
Emissions from Existing Land Uses Being Replaced by Proposed Land Uses		
Natural Gas	0.15	2.05
Landscape Maintenance	0.25	0.04
Consumer Products	0.00	0.00
Architectural Coatings	1.63	0.00
Motor Vehicles	27.38	21.88
Maximum Daily Emissions from Existing Uses to be Replaced	**29.41**	**23.97**
Net Operational Emissions (Proposed less Existing)	**17.55**	**0.45**
SMAQMD Thresholds (lb/day)	**65**	**65**
Significant Impact	**No**	**No**

Source: PBS&J, 2007. URBEMIS data provided in Appendix B.

Notes:

The emission sources are the primary sources of ozone precursors as identified in the URBEMIS 2007 model. The projection of natural gas, hearth, landscape maintenance, consumer products, and architectural coatings emissions reported above is based on the future land uses anticipated in the Strategic Plan area. For the URBEMIS 2007 model run new emissions are based on 366 dwelling units and 70,000 square feet of commercial space that could occur in the Strategic Plan area. Existing uses that are assumed to be displaced (and would, therefore, no longer emit ozone precursors) include approximately 131,000 square feet of retail space and 147,000 square feet of light industrial space. The projection of motor vehicle emissions reported above is also derived based on the future land uses and assumptions on trip generation and trip length.

through several signal cycles before traveling through the intersections. LOS "D" or worse results in traffic conditions that are no longer "free flow" and thus could elevate CO concentrations.

The traffic section (see Section 6.11, Transportation) identifies four intersections within or near the Swanston TVSP project area where LOS D, E, or F is reported for existing conditions during AM or PM peak hours. Future CO concentrations were estimated at these four intersections with the potential Strategic Plan development for year 2025; none of these intersections exceeded the federal or state 8-hour standards (see Table 6.2-8). All other roadway intersections in the Strategic Plan area would have levels of congestion and traffic less than the four modeled intersections. As a result, all roadways and intersections in the Swanston TVSP project area are expected to experience future CO concentrations in 2025

below the federal or state 1-hour and 8-hour standards. Thus, the Strategic Plan would have a less-than-significant impact with respect to CO.

Table 6.2-8
Maximum 8-Hour Carbon Monoxide Concentrations for the Strategic Plan Area - Year 2025

	CO Concentrations in Parts per Million[a]		
Intersection	**25 Feet**	**50 Feet**	**100 Feet**
El Camino Avenue and Evergreen Street	4.8	4.5	4.2
Arden Way and Del Paso Boulevard	5.0	4.7	4.3
Arden Way and Harvard Street	5.1	4.8	4.4
Auburn Boulevard/Van Ness Street and Frienza Avenue	4.3	4.1	3.9

Source: PBS&J, 2007. Calculation sheets are provided in Appendix B.

Note:

a. National 8-hour standard is 9.0 parts per million. State 8-hour standard is 9.0 parts per million.

Long-Term Plan Area – Buildout

AQ-5. Development that could occur under the Long-Term Plan would generate construction-related emissions of ozone precursors and particulate matter that could exceed SMAQMD standards. (PS)

Development that could occur in the Long-Term Plan area could add approximately 2,230 dwelling units and 435,515 square feet of commercial uses to the Swanston TVSP project area. Construction emissions of NO_x and PM_{10} were estimated for the potential development in the Long-Term Plan area using construction equipment and phasing defaults in the URBEMIS model. Conservative assumptions have been developed to estimate construction period emissions for the Long-Term Plan. Like the Strategic Plan assessment, the entire Long-Term Plan area is treated as a single development project and up to one quarter of this area could be actively graded on a given day. This assumption overstates the construction-period emissions, since the largest "block" identified for future development is 15.1 acres. However, it is possible that multiple development sites could be under construction over the same timeframe. To present the most conservative, worst-case scenario, this EIR consider the aggregate emissions from development from the entire Long-Term Plan area.

Table 6.2-9 shows that under this scenario future NO_x would be less than the City's significance standard of 85 pounds per day. In accordance with the City's standards, the PM_{10} concentrations would also be less than significant. Nevertheless, as noted for the Strategic Plan area, PM_{10} emissions from grading and other similar activities related to travel over unpaved ground and soil movement have the potential to cause violations of the PM_{10} CAAQS on and near construction sites. The SMAQMD recognizes this potential and recommends the implementation of standard dust control measures that become more stringent as the size of the active grading area increases. For active areas greater than 15 acres, the SMAQMD

recommends that dispersion modeling be used to determine if the CAAQS would be violated and to assure the effectiveness of any additional control measures to avoid such violations. During other construction phases, maintenance of the PM_{10} CAAQS would be assured by project compliance with the City's standard of significance (i.e., if construction emissions are below the SMAQMD NO_x emission threshold, the project will be below the PM_{10} concentration threshold as well).

Table 6.2-9
Construction Emissions of Long-Term Plan (Peak Pounds per Day)

Construction Phases	NO_x	PM_{10}
Mass Site Grading	34.91	647.06
Paving	15.54	1.15
Building Construction	22.86	2.87
Architectural coating	0.42	0.24
Maximum Daily Emissions	**34.91**	**647.06**
Exceeds SMAQMD Threshold?	**No**	**Possibly**

Source: PBS&J, 2007.

Notes:

Emissions are based on a hypothetical scenario that treats the Long-Term Plan area as a single development project. URBEMIS 2007 default assumptions have been used to estimate how much grading could occur in the maximum day and to determine the mix of construction equipment that would be used. In reality, individual construction projects would occur between approximately year 2025 (when development of the Strategic Plan area is anticipated to be completed) and buildout of the Long-Term Plan area. Emissions further in the future would be less because construction equipment and vehicles would be more efficient. The individual construction projects would also be smaller than assumed in the model run; again, resulting in less emissions than reported in this table.

In reviewing Table 6.2-9, it should be recognized that when the future development occurs, which would be over a much longer timeframe and in smaller individual construction projects than assumed in the model run, the resulting emissions would be less than represented in Table 6.2-9. This would be the case because construction equipment and the vehicle fleet will be subject to more stringent requirements and will generate less emissions in the future. As noted for the Strategic Plan, future development that could occur under the Long-Term Plan would continue to be subject to SMAQMD provisions for NO_x and PM_{10} emissions mitigation.

MITIGATION MEASURE. Implementation of Mitigation Measure AQ-2.1 (Particulate Matter Emission Reduction) during construction of individual developments under the Long-Term Plan would ensure that impacts due to emissions of PM_{10} during grading phases would be reduced to a less-than-significant level. (LTS)

AQ-6. Development that could occur under the Long-Term Plan would generate operational emissions of ozone precursors that may exceed SMAQMD standards. (PS)

As explained in Impact AQ-3, sources of future ozone precursor emissions would be stationary equipment (such as space and water heaters) and traffic associated with new land use development. The ROG and NO_x emissions that could be generated by development in accordance with the Long-Term Plan were calculated using the URBEMIS 2007 model. For this analysis of operational emissions, the Long-Term Plan was modeled assuming all development that could occur in the Long-Term Plan area would occur in year 2025. Although development would occur over time in response to market conditions, this scenario would represent the worst-case scenario in terms of ozone precursor emissions (because development further in the future would result in lesser emissions since stationary and mobile sources would be subject to more stringent requirements and would operate more efficiently).

The future ROG and NO_x emissions identified for the Long-Term Plan exceed the current SMAQMD standards. Table 6.2-10 shows emissions of 321.20 pounds per day of ROG and 254.34 pounds per day of NO_X, compared to the SMAQMD threshold of significance of 65 pounds per day for both ROG and NO_X. As noted for the Strategic Plan, future ozone precursor emissions are generated by stationary and mobile sources. 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.

As individual projects are considered pursuant to the Long-Term Plan, they will be subject to future CEQA review and compliance with the prevailing SMAQMD Guide to Air Quality Assessment. The SMAQMD recommends that lead agencies require projects to reduce their O_3 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 emission reduction measures are organized into the following categories: pedestrian/bicycle/transit, parking, site design, mixed use, building components, and transportation demand management measures.

The proposed Swanston TVSP project already embodies many of the measures that concern mixed use, pedestrian/bicycle/transit accessibility and availability, and site design. Accordingly, the Swanston TVSP project is consistent with the SMAQMD guidance and would reduce operational emissions of ROG and NO_x, compared to the project area's existing land use and circulation. In addition, Section 6.11, Transportation, explains that the change in land uses under the Strategic Plan and the Long-Term Plan would generate fewer daily and PM peak-hour vehicle trips than development under existing zoning. Based on these considerations, it is

Table 6.2-10
Operational Emissions Associated with Development of the Long-Term Plan Area

	Emissions in Pounds per Day	
Emissions Source	**ROG**	**NO_x**
Natural Gas	2.16	28.28
Landscape Maintenance	0.25	0.04
Consumer Products	111.23	0.00
Architectural Coatings	19.45	0.00
Motor Vehicles	187.31	140.77
Maximum Daily Emissions	**320.40**	**169.09**
SMAQMD Thresholds (lb/day)	65	65
Significant Impact	**Yes**	**Yes**

Source: PBS&J, 2007. URBEMIS data provided in Appendix B.

Note:

The emission sources identified in this table are the primary sources of ozone precursors as identified in the URBEMIS 2007 model. The projection of natural gas, landscape maintenance, consumer products, and architectural coatings emissions reported above is based on the future land uses anticipated in the Long-Term Plan area. For the URBEMIS 2007 model run, emissions are based on 2,230 dwelling units and 435,515 square feet of commercial space that could occur in the Long-Term Plan area. The projection of motor vehicle emissions reported above is also derived based on the future land uses and assumptions on trip generation and trip length.

anticipated that ozone precursor emissions would be less than under existing zoning conditions. However, compared to existing conditions, the emissions, while reduced by future CEQA review and compliance with SMAQMD guidance, would still be substantial and are therefore considered potentially significant.

MITIGATION MEASURES. The following measures are identified in SMAQMD's Guide in Table E-2 and represent strategies for reducing operational emissions. It is noteworthy that the Swanston TVSP project contains specific policies and guidelines that would implement a number of these measures (*italicized measures* below are already proposed by the proposed Swanston TVSP project) and would therefore reduce many of the potential operational air quality impacts that might otherwise occur. As future individual development projects occur, they could include other measures from this list, or new ones that may be identified in future updates to the SMAQMD's Guide. Nonetheless, even with the inclusion of the design features below, NO_x and ROG emissions associated with the Long-Term Plan would still exceed the SMAQMD threshold of 65 pounds per day. (SU)

Bicycle/Pedestrian/Transit Measures

1. Non-residential projects provide bicycle lockers and/or racks
2. Non-residential projects provide personal showers and lockers

3. Bicycle storage (Class I) at apartment complexes or condos without garages
4. *Entire project is located within ½ mile of an existing Class I or Class II bike lane and provides a comparable bikeway connection to that existing facility*
5. *The project provides for major pedestrian facilities and improvements such as overpasses and wider sidewalks*
6. Bus service provides headways of 15 minutes or less for stops within ¼ mile; project provides essential bus stop improvements (i.e., shelters, route, information, benches, and lighting)
7. *High density residential, mixed, or retail/commercial uses within ¼ mile of light existing transit, linking with activity centers and other planned infrastructure*

Parking Measures

8. Employee and/or customer paid parking system (no validations)
9. Provide minimum amount of parking required
10. Provide parking reduction: Office 25%, Medical office 8%, Commercial 5%, Industrial 10%. Additional 10-20% if located along transit station (special review of parking is required).
11. Provide grass paving or reflective surface for unshaded parking lot areas, driveways, or fire lanes that reduce standard paving by 10% or more
12. Increase parking lot shading by 20% over code
13. Provide electric vehicle charging facilities
14. *Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances*

Commercial Building Design Measures

15. Office floor area ratio is 0.75 or greater within ¼ mile of an existing transit stop.
16. Setback distance is minimized between development and existing transit, bicycle, or pedestrian corridor
17. Setback distance is minimized between development and planned transit, bicycle, or pedestrian corridor

Residential Development Measures

18. *Average residence density 7 d.u. per acre or greater*
19. *Multiple and direct street routing (grid style)*
20. Granny Flats – Have ancillary "granny units" (requires Special Development Permit but no Accessory Structure Use Permit)

Mixed Use Measures

21. *Development of projects predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site. A "single site" may include contiguous properties.*

22. *Separate, safe, and convenient bicycle and pedestrian paths connecting residential, commercial, and office uses.*

23. *The project provides a development pattern that eliminates physical barriers such as walls, berms, landscaping, and slopes between residential and non-residential uses that impede bicycle or pedestrian circulation.*

Building Component Measures

24. Install only natural gas fireplaces

25. Install Energy Star or ground source heat pumps.

26. Install ozone destruction catalyst on air conditioning systems in consultation with SMAQMD or local district

27. Install Energy Star labeled roof materials.

28. Install roof photovoltaic energy systems as a standard feature on new homes.

29. Exceed Title 24 energy standards for cooling energy by 25% or comply with SMUD Advantage (Tier II) energy standards.

30. Exceed Title 24 energy standards for cooling energy by 50%, or comply with SMUD Advantage Plus (Tier III) or EPA/DOE Energy Star Home energy standards.

31. Orient 75 or more percent of homes and/or buildings to face either north or south (within 30 degrees of N/S), and include shading master plan.

TDM and Miscellaneous Measures

32. Include permanent TMA membership and funding requirement. Funding to be provided by Community Facilities District or County Service Area or other nonrevocable funding mechanism.

33. Make physical development consistent with requirements for neighborhood electric vehicles.

34. Implement Clean Air Business Practices such as using low-emission delivery vehicles, contract with alternative-fuel waste hauling companies, etc., in consultation with SMAQMD.

35. Provide electric shuttle to transit stops.

36. Provide a complimentary cordless electric lawnmower to each residential buyer.

37. Transit pass subsidy (100%) and/or commute alternative allowance.

Innovative Strategies

38. Other proposed strategies in consultation with SMAQMD.

AQ-7. Development that could occur in the Long-Term Plan area could contribute to increased CO levels in the vicinity of the project area but would not exceed ambient air quality standards. (LTS)

Future development that could occur in the Long-Term Plan area includes approximately 2,230 dwelling units and 435,515 square feet of commercial space. The traffic section (see Section 6.11, Transportation) identifies six intersections that would operate at LOS D, E, or F at full development of the Swanston TVSP project (the combined development from the Strategic Plan and Long-Term Plan areas) during AM or PM peak hours. Future CO concentrations in Year 2025 were shown in Table 6.2-8 to be below the CAAQs by a relatively wide margin. The less-than-significant CO impacts are also expected for development that could occur in the Long-Term Plan area for the reasons described below.

CO concentrations from vehicular sources have dropped markedly with the increase in the energy efficiency of the vehicle fleet. Cleaner fuels and higher average miles per gallon have successfully lowered CO emissions and concentrations. Specifically, the introduction of higher "New Corporate Average Fuel Economy" standard and the State Oxygenated Fuel Program in 1992 have played a major role in the improving CO emissions. In 1989, there were 22 exceedances (22 days) of the CO standard. By 1994, the number of exceedances in Sacramento County had dropped to zero and has remained at no exceedances since 1994. As a result, Sacramento County was redesignated as an attainment area for CO by EPA in 1998. In recognition of these trends, the SMAQMD has noted in its Guide to Air Quality Assessment that background CO concentrations of 9 ppm in 2000 would drop to 3.96 ppm in 2010.[7]

According to the Guide, CO violations might occur only with large concentrations of vehicles. Section 6.11, Transportation, indicates that vehicular usage and trip generation is expected to be lower in the future as the Swanston Station Transit Village matures and as bicycle and pedestrian facilities in the Long-Term Plan area are installed. These trends are projected to continue and would result in less-than-significant CO impacts from development that could occur in the Long-Term Plan area.

Cumulative Analysis

Cumulative impacts on air quality are analyzed on a regional (SVAB-wide) level or in a more local context depending on the pollutant under consideration. For this analysis, buildout of the City's General Plan is assumed and the Sacramento Area Council of Governments regional Blueprint is also anticipated for operational emissions. As explained below, this cumulative analysis focuses only on ozone precursors.

[7] Sacramento Metropolitan Air Quality Management District, Guide to Air Quality Assessment, July 2004, Table 5.3.

Construction Emissions. Construction-related emissions in the context of a planning document, such as the Swanston TVSP project, are speculative given the uncertainty of when, where, and how individual projects may occur over the timeframe of the plan. In the case of the Swanston TVSP project, cumulative construction impacts are even less meaningful because development that could occur in either the Strategic Plan or Long-Term Plan areas would result in short-term project-related air emissions and impacts, especially NO_x emissions from diesel-powered equipment and PM_{10} emissions during grading phases, but there is no reasonable way to anticipate what other development projects might occur nearby in the same time whose short-term air quality emissions could cumulate with those of development projects occurring in accordance with the Swanston TVSP project. Accordingly, this cumulative assessment does not address construction-period impacts.

Operational Ozone Precursor Emissions. Ozone precursor emissions from project sources or from any other developments in the SVAB would have regional impacts in the entire SVAB. Consequently, all ozone precursors generated throughout the air basin, including the Swanston TVSP project, are part of the cumulative context for this analysis. Under SMAQMD guidelines, development projects are considered cumulatively significant if the project requires a change in the existing land use designation (i.e., general plan amendment, rezone), and projected ozone precursor emissions would be greater than the emissions under the existing land use designation.

Operational CO Emissions. Under SMAQMD guidelines, CO is not considered to be a regionally significant pollutant; in most cases, project CO emissions that are not shown to cause CO standard violations in the project-level analysis are not considered cumulatively significant. To confirm this, the CALINE model was run with development that could occur in the Strategic Plan area along with growth projected by SACOG and the SACMET data for the City. Six intersections identified as the most congested in the Swanston TVSP project area (see Section 6.11, Transportation) were modeled (see Appendix B). The highest CO concentration was 3.9 ppm, compared to the State 8-hour standard of 9 ppm. As a result, cumulative CO impacts are expected to be less than significant.

AQ-8. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would make a cumulatively considerable contribution to regional ozone precursor emissions and so in combination with emissions from other developments would have a significant cumulative impact on regional ozone levels. (S)

As discussed above, the SVAB is in non-attainment for O_3. As growth occurs in the SVAB, vehicle use and other activities will increase the amount of ozone precursors in the basin. Increases in air pollutants would further degrade air quality and make attainment of the AQMP more difficult. The Swanston TVSP 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 AQ-3 and Impact AQ-6, the proposed Swanston TVSP project would 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 Swanston TVSP 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, a rezoning) and if the projected O_3 precursor emissions from the new uses would be greater than the emissions anticipated for the site under the existing land use designation. The change in an existing land use designation would depart from assumptions used in the AQMP and could jeopardize regional attainment of the ozone standard. For these reasons, the project contribution to air quality degradation would be considerable and the cumulative impact would be significant. Therefore, the Swanston TVSP project contribution to long-term operational O_3 precursor emissions would be considered a significant impact.

MITIGATION MEASURE. Even with the inclusion of site planning, alternative travel modes, and design features recommended by the SMAQMD, the Swanston TVSP project would have considerable emissions of ROG and NO_x. Other foreseeable development in the SVAB would be expected to also comply with the SMAQMD recommendations; however, even if the 15 percent operational emissions reduction is achieved, the threshold of 65 pounds per day may still be exceeded. Accordingly, cumulative impacts of ozone precursor emissions would remain significant and unavoidable. (SU)

Climate Change

Introduction. Global climate change refers to the change in the average weather of the earth that may be measured by changes in ocean currents, wind patterns, storms, precipitation, and temperature. The climate in California is expected to become increasingly warmer during the 21st century due to the accumulation of Green House Gases (GHGs) in the atmosphere. The extent of change is linked to the rate of certain human activities, such as the burning of fossil fuels. The Intergovernmental Panel on Climate Change (IPCC) Special Report on Emissions Scenarios (SRES) has developed a set of possible future GHG emissions scenarios based on different assumptions about global development. There are three general SRES emissions scenarios for California: a higher emissions scenario, a medium-high emissions scenario, and a lower emissions scenario. The higher emissions scenario represents rapid fossil-fuel intensive economic growth, global population that peaks mid-century then declines, and the introduction of new and more efficient technologies toward the end of the 21st century. The medium-high emissions scenario is based on a projection of continuous population growth combined with slower economic growth and technological change than in the other scenarios. In contrast, the lower emissions scenario represents a world with population growth similar to the highest emissions scenarios, but with rapid changes towards a service and information economy with the introduction of clean and resource-efficient technologies. Under this scenario, despite a reduction in $C0_2$ emissions, the global $C0_2$ concentration would double, relative to its pre-industrial level, by the end of this century. It is important to note that even at the lower emissions scenario, increases in global temperature are predicted to be between 1.7 and 3.0 degrees Celsius (3 to 5.5 degrees Fahrenheit). In the medium-high emissions scenario and the higher emissions scenario, temperatures are predicted to increase between 3.1 and 4.3 degrees Celsius (5.5 to 8 degrees Fahrenheit) and 4.4 to 5.8 degrees Celsius (8 to 10.5 degrees Fahrenheit), respectively. According to these climate models, the temperature rise in California is expected to increase anywhere between 1.7 and 5.8 degrees Celsius. Among other

effects, projected climate changes would affect California's public health through changes in air quality.

GHG Emission Inventory and Emissions under the Proposed Swanston TVSP Project. To date, analysts have yet to define protocols for establishing the effect of a specific local development project on a cumulative global temperature increase. The IPCC notes that "difficulties remain in attributing temperature on smaller than continental scales and over time scales of less than 50 years. Attribution at these scales, with limited exceptions, has not yet been established." This following discussion focuses on the proposed Swanston TVSP project's cumulative contribution to the global climate change by quantifying GHG emissions and qualitatively discussing project GHG reductions, which would be consistent with the regulatory context presented below. The assessment focuses on the quantification of major greenhouse gases, carbon dioxide ($C0_2$), Nitrous oxide (N_20), and methane gas (CH_4), which contribute to global warming. Direct $C0_2$ emissions from transportation and natural gas combustion sources associated with the proposed Swanston TVSP project development, and indirect GHG emissions from the fossil fuel power plants that provide electricity for that development are quantified in Table 6.2-11.

Table 6.2-11
Estimated GHG Emissions associated with
Construction and Operation of the Swanston Station TVSP Project (Tons per Year)

	Construction[a]	Operational Mobile Sources[b]	Operational Natural Gas Combustion[c]	Operational Total
Direct CO_2 Emissions	3,560	76,733	17,095	93,828
Indirect GHG Emissions (Electricity Use)[d]	25,829	0.1	0.2	25,871

Source: URBEMIS 2007, Version 9.2.4; California Climate Change Action Registry (CCAR) General Reporting Protocol, 2007.

Notes:

a. Combined average annual emissions from construction in the Strategic Plan and Long-Term Plan areas, as estimated with URBEMIS 2007 (see Appendix B).

b. As estimated with URBEMIS 2007 (see Appendix B).

c. Emission factor from CCAR.

d. Emission factors from CCAR.

Strategies to Reduce GHG Emissions. No governmental agency has provided specific guidance on how to conduct GHG analysis for CEQA documents. The following qualitative approach for assessing the proposed Swanston Station Specific Plan's compliance with AB 32 and other climate change reduction strategies was developed in accordance with several approaches outlined in white papers and technical advisories provided by the Governor's Office of Planning and Research, the California Air Pollution Control Officers Association (CAPCOA, 2008), and the Association of Environmental Professionals (AEP, 2007).

The proposed Swanston TVSP project would result in high-density mixed-use development within an urbanized area of the City. The project area is within a relatively short distance (3 miles) to downtown Sacramento, which is a regional employment and retail center. Residential development in proximity to the downtown Sacramento area has been shown to reduce average commuting lengths, according to the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan, 2035. Given the high density and mixed use nature of the development that could occur in accordance with the proposed Swanston TVSP project, coupled with the proximity to existing employment centers and retail attractions in the City, the proposed Swanston TVSP project could reduce daily vehicle travel. This observation is consistent with the future daily trip forecasts that are presented in Section 6.11, Transportation, of this EIR. This reduction in daily vehicle travel would aid in California's goal to reduce GHG under AB 32. Furthermore, the City of Sacramento in its 2030 Draft General Plan has included goals and policies that would reduce GHG emission from future projects. These policies are described in the Environmental Resources, Air Quality, Mobility, Land Use and Urban Design, Economic Development, Public Health and Safety, Utilities, and Education, Recreation, and Culture Elements of the Draft General Plan.

As discussed under the regulatory context below, California's strategies and measures would result in a reduction of statewide emissions, including emissions resulting from development that could occur in accordance with the proposed Swanston TVSP project, to below current levels. Tables 6.2-12 and 6.2-14 show applicable strategies and early action measures, respectively. The other policies do not apply to the proposed Swanston Station Specific Plan, because they are directed to state agencies, such as CARB, or to particular industries (e.g., auto repair), or because they are planning-level measures. As shown in Tables 6.2-12 and 6.2-13, the proposed Swanston TVSP project would be in compliance with the applicable state climate change strategies and early action measures.

Table 6.2-12
Consistency with State Emissions Reduction Strategies

CAT Strategies	Project Consistency
Vehicle Climate Change Standards: AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the CARB in September 2004.	These are CARB enforced standards; vehicles that access the Swanston TVSP project area or result from development within the project area would be required to comply with the standards.
Diesel Anti-Idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	CARB adopted standard.
Transportation Refrigeration Units (TRU), Off-Road Electrification, Port Electrification: Strategies to reduce emission from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.	The commercial and industrial uses that could occur in accordance with the proposed Swanston TVSP project would include electrification of loading docks.

Table 6.2-12
Consistency with State Emissions Reduction Strategies

CAT Strategies	Project Consistency
Achieve 50 percent statewide Recycling Goal: Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed.	Solid waste services would be provided by the City of Sacramento, which are subject to the state's recycling requirements.
Water Use Efficiency: Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions	Use of water conservation facilities would reduce water consumption by development that could occur in accordance with the Swanston TVSP project, which would comply with current Title 24 Standards.
Building Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).	The development that could occur in accordance with the Swanston TVSP project would comply with current Title 24 Standards.
Appliance Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	The development that could occur in accordance with the Swanston TVSP project would utilize energy efficient appliances.
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. 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.	The proposed Swanston TVSP project is an infill mixed use project, which include retail and residential components, around two light rail stations, and promotes a high degree of pedestrian and bicyclist connectivity to activity centers within and around the project area. Providing residential units close to transportation and work reduces vehicle miles traveled by commuters. Providing retail in the same facility as residential units also reduces vehicle miles traveled.
Green Building Initiative: Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels.	The development that could occur in accordance with the Swanston TVSP project would comply with current building codes, which under EO S-20-04 would require the use of green building designs.

Table 6.2-12
Consistency with State Emissions Reduction Strategies

CAT Strategies	Project Consistency
California Solar Initiative: Installation of 1 million solar roofs or and equivalent 3,000 MW by 2017 on homes and businesses: increased use of solar thermal systems to offset the increasing demand for natural gas; use of advanced metering in solar applications; and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	Where feasible, the development that could occur in accordance with the Swanston TVSP project would implement the use of photo voltaic arrays.
Energy Efficient Appliance Standards: (Specific mention of lighting standards). CEC has the authority to regulate light bulb efficiency. The California Energy Commission is considering options for light bulb standards and anticipates adopting standards by January 1, 2010. The GHG emissions reductions from this strategy are still to be determined. (The GHG emissions reductions associated with other ongoing energy efficient appliance standards are expected to be 7 MMTC02E by 2020.)	The development that could occur in accordance with the Swanston TVSP project would utilize energy efficient appliances.
Tire Efficiency: Implementation of California's tire efficiency law, Chapter 8.7 Division 15 of the Public Resources Code. The CEC, in consultation with the California Integrated Waste Management Board, will implement a replacement tire efficiency program of statewide applicability for replacement tires for passenger cars and light-duty trucks, to ensure that replacement tires sold in the state are at least as energy efficient, on average, as the tires sold in the state as original equipment on these vehicles. This strategy is expected to result in GHG emissions reduction of <1 MMTC0_2E by 2020.	This would be a State mandated program; thus all vehicles arriving or leaving the Swanston TVSP project area would be subject to the program.
New Solar Homes Partnership: In late 2006, the Energy Commission approved implementation rules for new residential solar installations. Effective in January 2007, approved solar systems will receive incentive funds based on system performance above building standards. This program will result in 400 MW of new, emissions-free generating capacity. The GHG emissions reductions from this strategy are still to be determined.	Where feasible, the development that could occur in accordance with the Swanston TVSP project would implement the use of photovoltaic arrays.
Water Use Efficiency: DWR will adopt standards for projects and programs funded through water bonds that would require consideration of water use efficiency in construction and operation. This strategy is expected to result in GHG emissions reduction of 1 MMTC0_2E by 2020.	Use of water conservation facilities would reduce water consumption by development that could occur in accordance with the Swanston TVSP project, which would comply with current Title 24 Standards.

Source: CARB, 2007; Climate Action Team, 2006

Note: AB= Assembly Bill; CARB= California Air Resource Board

Table 6.2-13
Consistency with CARB State Emissions Reduction Strategies

California Air Resource Board Early Action Measures	Project Consistency
Smart Way truck efficiency: Requirement of existing trucks/trailers to be retrofitted with the best available fuel efficiency and /or CARB approved Technology.	This would be a State mandated program; thus, all trucks arriving or leaving the Swanston TVSP project area would be subject to the program. The program would reduce fuel use in trucks.
Low Carbon Fuel Standard (LCFS): The goal of LCFS; is to reduce the carbon intensity of California s vehicle fuel by at least 10 percent by 2020.	This would be a State mandated program; thus, reducing carbon emissions from all vehicles arriving and leaving the Swanston TVSP project area.
Anti-Idling enforcement: Reduce GHG emissions though enhanced monitoring of vehicles and current anti-idling regulations.	CARB adopted standard.
Tire inflation program: Require all vehicle service facilities, such as, dealerships, maintenance garages, and smog check stations, to check and inflate tires.	This would be a State mandated program; thus, all vehicles arriving or leaving the Swanston TVSP project area would be subject to the program.
Strengthen light-duty vehicle standards: Adopt new standards to phase in beginning in the 2017 model year (following up on the existing mid-term standards that reach maximum stringency in 2016).	This would be a State mandated program; thus, all vehicles arriving and leaving the Swanston TVSP project area would be subject to the program. The program would reduce light-duty vehicles emission.

Source: CARB, 2007; Climate Action Team, 2006

Note: AB= Assembly Bill; CARB= California Air Resource Board

Applicable Plans and Policies. California is a leader among the states in outlining and aggressively implementing a comprehensive climate change strategy designed to result in a substantial reduction in future total statewide GHG emissions. California's climate change strategy is multifaceted and involves a number of State and local agencies. The following policies, ordinances, and regulations form a part of the State and local regulatory and policy framework that is currently addressing the global warming issue. It is not a complete list; however, it provides examples of the primary regulations and policies enacted/adopted to reduce greenhouse gas emissions and would apply to the proposed Swanston TVSP project.

California Code of Regulations (CCR) Title 24, Part 6 (1978). The CCR, Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, were first established, in response to a legislative mandate to reduce California's energy consumption. Energy efficient buildings require less electricity, and electricity production by fossil fuels results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

California Assembly Bill 1493 (2002). This AB requires the CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks. 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 state and federal governments continue to wrestle with the issue.

Executive Order S-3-05. California Governor Schwarzenegger signed Executive Order (EO) S-3-05 in June 2005 in recognition of the risks associated with climate change. The EO established statewide greenhouse gas 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 EO also directed the preparation of a report for the Governor and Legislature to define actions necessary to meet the targets.

California Assembly Bill 32, the California Global Warming Solutions Act (2006). AB 32 requires the CARB, the State agency charged with regulating Statewide air quality, to adopt rules and regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with the program. The rules and regulations are required to reduce greenhouse gas emissions to the extent maximally technologically feasible and cost effective to the statewide levels existing in 1990, by 2020. AB 32 focuses on reducing GHG emissions from stationary sources in California.

Executive Order S-01-07 (2007). This EO requires that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 and requires that a Low Carbon Fuel Standard for transportation fuels be established for the State.

Senate Bill 97 (SB 97). Signed by the governor on August 24, 2007, SB 97 requires that no later than July 1, 2009, the state Office of Planning and Research (OPR) prepare CEQA guidelines for evaluating the effects of GHG emissions and for mitigating such effects. The Resources Agency is required to certify and adopt these guidelines by January 1, 2010. It is anticipated that this guidance would establish standardized significance criteria for the purposes of assessing project impacts pursuant to CEQA. In the absence of specific guidelines, OPR has referred CEQA document authors to existing general guidelines, examples of impact analyses in existing CEQA documents (which OPR acknowledges ranges greatly from little analysis due to the speculative nature of climate change impact analysis to the calculation of GHG emissions and the inclusion of mitigation), and to a variety of white papers on the subject of GHG impact analysis, including one prepared by the Association of Environmental Professionals (AEP, 2007).

Governor's Office of Planning and Research – Technical Advisory. OPR released a Technical Advisory on June 19, 2008, titled CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review. The Technical Advisory provides informal, interim

guidance for analyzing climate change impacts in advance of comprehensive amendments to the CEQA Guidelines to be prepared pursuant to SB 97, and scheduled for release on or before January 1, 2010. The Technical Advisory provides the following guidance when providing climate change analyses in a CEQA document:

- Each lead agency needs to develop its own approach to performing climate change analyses;
- Lead agencies should determine whether GHGs are generated by the project and, if they are, they must be quantified;
- A project's impact can either be cumulatively or individually significant, but climate change is "ultimately a cumulative issue";
- A lead agency must provide mitigation measures to avoid, reduce, or otherwise mitigate the impacts of GHG emissions;
- There is no standard format for including the analysis in a CEQA document;
- A less-than-significant impact can be presented using mitigation measures; and
- The Technical Advisory outlines mitigation measures.

Senate Bill 1368. Senate Bill (SB) 1368 (2006) is the companion bill to AB 32 and addresses the problem arising from current law not addressing the GHG emissions associated with long-term financial commitments for the procurement of energy by California-based utilities and electricity providers.

Senate Bill 1078. SB 1078 addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators to provide a minimum 20-percent of their supply from renewable sources by 2017. SB 107 changed the target date to 2010.

City of Sacramento Resolution 2001-805 (2001), Smart Growth Principles. In part to address deteriorating air quality issues, the City Council adopted Smart Growth Principles into the General Plan in 2001. Smart Growth changes development patterns by supporting projects that incorporate land uses, transportation management, and infrastructure that discourage urban sprawl and promote infill development, reduce vehicle emissions, and improve air quality.

These principles are, or will be, implemented through a variety of City and regional plans, policies and procedures, to include the City's 2025 General Plan Update, the 2005 Downtown Redevelopment Strategy, the Joint City/County Planning Principles for Natomas, the Parks Master Plan, Air Quality/Transportation Collaborative, the Metropolitan Transportation Plan, the Pedestrian Master Plan, the Transit Village Initiative, Cool Communities, and the Comprehensive Infill Strategy. The Smart Growth Principles call for future development to:

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
15. Policies adopted by regional decision-making bodies should discourage urban sprawl, promote infill development and the concentration of development in the urban core of the region, and promote the equitable distribution of affordable housing and social services.

City of Sacramento Comprehensive Infill Strategy. The City's Infill Program adopts numerical and qualitative infill development goals, targets specific types of infill development, and offers focused procedural and financial incentives to help achieve infill development goals.

Sustainability Master Plan (2007). As part of the Sustainability Master Plan, the City will integrate environmentally sustainable practices into City policies, procedures, and operations that will provide tools for measuring the City's progress towards sustainability. The foundation for the Sustainability Master Plan is the United Nations Environmental Accords, a set of 21 actions that the United Nations asked city governments to adopt and implement over a seven-year period. The City will incorporate the pertinent goals and targets identified in the Plan into the new update of the City's General Plan. The goals and targets will serve as a policy framework for the City to ensure that sustainability concerns are incorporated into the City's decision-making processes.

LEED Green Building Rating System. The City's Building Department is currently working on an ordinance to adopt the Leadership in Energy and Environmental Design (LEED) Green Building Rating System at the Silver certification standards for new buildings in the City. LEED is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings and promotes a whole-building approach to sustainability by recognizing performance in five key areas: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. To earn certification, a building project must meet certain prerequisites and performance credits within each category. Projects are awarded Certified, Silver, Gold, or Platinum certification depending on the number of credits they achieve. LEED Silver is awarded to projects that

achieve at least 50 percent of the core credits available. Points are earned for certain efficiencies in categories such as Indoor Environmental Quality, Building Materials and Resources, and Energy and Atmosphere.

Metropolitan Transportation Plan. The City is a member of SACOG, which covers a six-county area. SACOG adopted a Metropolitan Transportation Plan to provide a regional vision for all modes of surface transportation and a guide for regional transportation investments. The Metropolitan Transportation Plan uses federal and state funds for programs designed to meet goals such as clean air; design of communities to encourage local pedestrian, bicycle, and transit travel; and for improvements to main routes that serve longer distance travel around the region - specifically freeways, rail lines, and major roadways and streets that serve regional traffic.

Impact Assessment. In light of projected GHG emissions that could be associated with the development that could occur in accordance with the Swanston TVSP project, and the rapidly emerging statutory framework, the impact of the proposed Swanston TVSP project is discussed below.

AQ-9. The proposed Swanston TVSP project's incremental contribution to greenhouse gas emissions would not be cumulatively considerable and thus potential cumulative impacts related to greenhouse gas emissions is considered less than significant. (LTS)

URBEMIS 2007, which is emissions modeling software approved by EPA and CARB, was used to estimate construction and operational emissions. Table 6.2-11 shows the estimated construction and operational emissions from the Swanston TVSP project. An annual average of approximately 3,560 tons of CO_2 would be emitted during construction that could occur in the Strategic Plan and Long-Term Plan areas. Once construction is completed, 93,828 tons per year of CO_2 would be emitted directly from mobile and natural gas combustion sources associated with development that could occur under the proposed Swanston TVSP project. Indirect emissions from power plants supplying electricity to development that could occur in the Swanston TVSP project area were estimated to be about 25,871 tons per year CO_2e. Total operational CO_2e emissions at buildout of both the Strategic Plan and the Long-Term Plan areas would be 119,699 tons per year, which is 0.03 percent of California's 2004 emissions (i.e., 478.7 million tons).

The proposed Swanston TVSP project would promote high-density mixed-use development within an urbanized area of the City adjacent to a major transportation hub. Residential development in proximity to the downtown Sacramento area has been shown to reduce average commuting lengths, according to the SACOG Metropolitan Transportation Plan, 2035. Given the high density and mixed use nature of the proposed development coupled with the proximity to existing employment centers and retail attractions in the City, the proposed Swanston TVSP project would most likely reduce vehicle miles traveled. This reduction in automobile trips would assist in reaching California's goal to reduce statewide GHG emission under AB 32.

As discussed above, statewide emission reduction strategies and measures would result in a substantial decrease in statewide emissions to levels far below current background levels. Of

the approximately 228 strategies and measures currently under consideration that would ensure a statewide reduction in GHG emissions, 19 would apply to the proposed Swanston TVSP project and are shown in Tables 6.2-12 and 6.2-13. The other policies are not applicable to the proposed Swanston TVSP project because they are directed to state entities (e.g., CARB), to particular industries (e.g., auto repair), or are planning-level measures (e.g., general plans). As shown in Tables 6.2-12 (CAT Strategies) and 6.2-13 (CARB Early Action Measures), the proposed Swanston TVSP project would be in compliance with each of the 19 applicable state climate change strategies.

The proposed Swanston Station Specific Plan also supports the intent of the recently passed SB 375, which requires municipalities to adopt a Sustainable Communities Strategy (SCS). An SCS is an enhanced land use element that sets forth a regional growth strategy designed to achieve GHG emissions reductions. SB 375 provides for a streamlined CEQA process for residential and/or mixed-use projects consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in an SCS. Eligible projects would not be required to reference, describe, or discuss growth-inducing impacts or project-specific or cumulative impacts from cars and light-duty truck trips on global climate change.

There is no current consensus on identification of a quantitative threshold of significance for GHG emissions for public or private development projects. Active discussions at the CARB may lead to such a standard, or a scientific consensus may emerge from the ongoing debate. Given the information available at this time, the City does not believe that basing impact significance on an arbitrary emission level would contribute to a meaningful analysis of GHG emissions or climate change in the CEQA context.

Recognizing the importance of the issue, the City is currently working with CARB, SMAQMD, and the State Attorney General to develop a comprehensive approach for identifying, assessing, and reducing impacts associated with GHG emissions. State legislation requires action by the OPR within the next year establishing regulations for the evaluation of greenhouse gases, and the City reasonably expects that agreement on methodology and procedures will occur within that time period.

In the absence of a specific quantitative threshold, expressed in terms of metric tons per year for example, the City evaluates projects on a project-by-project basis to reach a conclusion regarding the significance of the GHG emissions that would result. One measure of significance is the extent to which the project complies with directly applicable emission reduction measures that would support the State's efforts to significantly reduce its cumulative contribution to global climate change and the associated impacts. These would include each of the project-applicable strategies currently identified by CARB or CAT to comply with Executive Order S-3-05 or AB 32. As shown in Tables 6.2-12 and 6.2-13 above, the proposed Swanston TVSP project would be in compliance with all state climate change strategies.

An overall evaluation of the impacts of the project, while subjective, is relevant. While the development that could occur in accordance with the Swanston TVSP project would emit greenhouse gases during construction and operations, these would occur in the context of a smart-growth project that has been intentionally designed to support the City's land use policies that call for infill development and support for transit. The location of the project area and the planning and design guidelines contained in the proposed Swanston Station Specific Plan are, in many cases, self-mitigating and help to minimize the project's direct impact to the physical environmental. The project area is at the confluence of several residential neighborhoods, near major commercial and employment centers, and is adjacent to or surrounds the Royal Oaks and Swanston Light Rail Stations. The juxtaposition of the proposed land uses and the Regional Transit light rail stations and future transit center is recognized as a substantial opportunity to promote transit use and decrease miles traveled in personal automobiles. The proposed Swanston TVSP project appears to fully comply with the intent of SB 375 and thus makes a beneficial contribution to the City's overall efforts to plan for a sustainable future.

An evaluation of the proposed Swanston TVSP project based on these considerations supports the conclusion that the incremental effect of the potential development in the Strategic Plan and Long-Term Plan areas would not be cumulatively considerable, as defined in CEQA Guidelines 15065(a)(3). As stated in CEQA Guidelines Section 15130, "where a Lead Agency is examining a project with an incremental effect that is not 'cumulatively considerable,' a Lead Agency need not consider that effect significant."

THIS PAGE INTENTIONALLY LEFT BLANK

6.3 BIOLOGICAL RESOURCES

Introduction

This section examines the potential impacts of the proposed Swanston TVSP project on biological resources. Existing plans and policies relevant to biological resource issues associated with implementation of the proposed Swanston TVSP project are presented below. The impact assessment is based on a biological field survey of the site, queries of the California Department of Fish and Game's (CDFG) Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) list and the U.S. Fish and Wildlife Service's (USFWS) electronic species list as well as review of the project plans, the City's General Plan, and other relevant data sources as identified throughout this section. Where appropriate, mitigation measures intended to reduce impacts on biological resources are described.

Setting

Field Survey and Results

The biological field survey was conducted in February 2006 to locate evidence of listed special-status species or their potential habitats. Field surveys focused on potential suitable habitat for special-status species that could potentially occur in the Swanston TVSP project area. Field surveys concentrated on the presence of blue elderberry (*Sambucus mexicana*) shrubs, habitat for the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), seasonal wetland habitat for vernal pool crustaceans, foraging and/or nesting habitat for burrowing owl (*Athene cunicularia*), foraging and nesting habitat for purple martin (*Progne subis*), white-tailed kite (*Elanus leucurus*), and other raptor species. There are several large trees in the Swanston TVSP project area that could qualify as heritage trees as defined in the City of Sacramento's Tree Ordinance.

The only recorded occurrence of a special-status species within Swanston TVSP project area is purple martin, a bird that nests under the El Camino Avenue overcrossing. Other sensitive natural community types, plants, and wildlife identified from database queries were not observed within the Swanston TVSP project area.

Vegetation and Land Cover Types

The Swanston TVSP project area is composed primarily of urban and ruderal habitats. These habitats commonly exist within developed areas where pre-development vegetation has been removed and new species of plants introduced, intentionally (ornamental species) or inadvertently (weeds). Generally, no natural habitats that support sensitive biotic resources, including listed sensitive plant or wildlife communities are found in these developed communities. The exception in this case could be an isolated drainage feature, mentioned under "Potential Wetlands and Other Waters of the U.S." below.

Urban Habitat. Urbanized habitats comprise the majority of the Swanston TVSP project area, with landscape plantings of ornamental trees, shrubs, herbaceous groundcovers, and mown sod lawns around residential, municipal, and commercial properties.

Ruderal Habitat. Ruderal habitats are characterized by plant species adapted to continuous disturbance (e.g., mowing, discing, and spraying) and typically include a high percentage of non-native annual and biennial herbaceous species. Ruderal habitats dominate the open space areas associated with the railroad rights-of-way and undeveloped urban lots throughout the Swanston TVSP project area. These areas are populated primarily with herbaceous vascular plant species; trees are infrequent within these areas and are largely restricted along the Union Pacific right-of-way. Non-native grass species observed included rip-gut brome (*Bromus diandrus*), wild oat (*Avena fatua*), Bermuda grass (*Cynodon dactylon*), Johnson grass (*Sorghum halapense*), and Italian rye grass (*Lolium multiflorum*). Native and non-native broad-leaved plant species observed included red-stem filaree (*Erodium cicutarium*), yellow star-thistle (*Centaurea solstitialis*), tumbleweed (*Amaranthus albus*), vetch (*Vicia villosa* and *V. sativa*), wild radish (*Raphanus sativus*), chicory (*Cichorium intybus*), horseweed (*Conyza canadensis*), pitgland tarweed (*Holocarpha virgata* ssp. *virgata*), black mustard (*Brassica nigra*), telegraph weed (*Heterotheca grandiflora*), annual fireweed (*Epilobium brachycarpum*), turkey mullein (*Croton setigerus*), prickly lettuce (*Lactuca serriola*), and rose clover (*Trifolium hirtum*).

Potential Wetlands and "Other Waters" of the U.S. While there are no wetland features, vernal pools, or other seasonal wetlands within the Swanston TVSP project area, there are a few topographic depressions within the Union Pacific railroad right-of-way. Generally, these features are wheel ruts from maintenance trucks driving the railroad alignment during the winter months. These features do not exhibit a significant nexus (notable biological, chemical, or physical connection) to any nearby "waters of the U.S.;" therefore, in all likelihood, they do not fall under the regulatory authority of the U.S. Army Corps of Engineers (Corps). Also, there is one small drainage feature, approximately 200 feet in length and 12 feet wide (0.05 acres) near the intersection of Calvados Avenue and Green Street within the Swanston TVSP project area (see Figure 6.3-1). It appears to intercept runoff from surrounding residential streets and discharges into a storm drain that runs under Calvados Avenue. A mix of upland and wetland vegetation was observed within this feature. Plant species observed include Bermuda grass, Italian rye grass, Johnson grass, wild oat, wild radish, red-stem filaree, black mustard, California burclover (*Medicago polymorpha*), English plantain (*Plantago lanceolata*), common spikeweed (*Centromadia pungens),* and curly dock (*Rumex Crispus)*. Woody species were infrequent and included Fremont's cottonwood (*Populus fremontii*) and Himalayan blackberry (*Rubus discolor)*. In addition, information and guidance for implementing the June 19, 2006 U.S. Supreme Court opinions resulting from *Rapanos v. United States* and *Carabell v. United States* (Rapanos) states the Corps will maintain jurisdiction over traditional navigable waters, "relatively permanent water," and have a significant nexus to the biological, chemical, and physical characteristics of a traditional navigable water or relatively permanent water. Due to the isolated nature of this feature and the lack of significant nexus, it is not likely to be considered a jurisdictional wetland. Nevertheless, determination of whether this is a jurisdictional wetland is the responsibility of the Corps and a survey would need to be submitted at the time of an application to develop the site.

Source: Google Eart Pro, 2005; Navteq, 2006.

FIGURE **6.3-1**

Drainage Feature at Calvados Avenue and Green Street

07075 | JCS | 08

Wildlife Resources

The fragmented nature of available habitat extremely limits the use of these areas by wildlife populations. However, common wildlife species best adapted to urban environments were observed during the field survey and included, either by direct observation or sign (e.g., tracks, scat, burrows), raccoon (*Procyon lotor*), domestic dog (*Canis familiaris*), feral cat (*Felis domesticus*), black-tailed hare (*Lepus californicus*), California ground squirrel (*Spermophilus beechyi*), American robin (*Turdus migratorius*), red-winged blackbird (*Agelaius phoeniceus*), rock dove (*Columba livia*), and turkey vulture (*Cathartes aura*). Pacific tree frog tadpoles (*Hyla regilla*) were observed in some of the drainage ditches and topographic depressions along the Union Pacific right-of-way which were inundated during the time of the survey.

Special Status Species and Sensitive Biological Resources

The following section addresses special-status biological resources observed, reported, or having the potential to occur in the Swanston TVSP project area. These resources include plant and wildlife species and habitats that have been afforded special status and/or recognition by federal and state resource agencies, or private conservation organizations and special interest groups, such as the CNPS. In general, the principal reason an individual taxon (species, subspecies, or variety) is given such recognition is the documented or expected decline or limitation of its population size, geographical extent, and/or distribution.

Information on sensitive species and habitats occurring within and in the vicinity of the Swanston TVSP project area was obtained from the CNDDB (information dated October 2007) for the U.S. Geological Survey's (USGS) 7.5-minute Sacramento East, Elk Grove, Florin, Sacramento West, Taylor Monument, Clarksburg, Carmichael, Citrus Heights, and Rio Linda 7.5 minute topographic quadrangle maps (Appendix C); and the CNPS's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2006), and the USFWS. Review of these databases indicates that there are 47 species reported within approximately five miles of the Swanston TVSP project area. In addition, the CNDDB also generates a list of ecologically sensitive and/or threatened natural communities within the state of California. The CNDDB query for the Swanston TVSP project area reported six sensitive natural community types: Elderberry Savanna, Great Valley Cottonwood Riparian Forest, Great Valley Oak Riparian Forest, Northern Claypan Vernal Pool, Northern Hardpan Vernal Pool, and Northern Volcanic Mud Flow Vernal Pool. Information on those species that occur, or have a moderate to high potential to occur, is discussed below and in Table 6.3-1. All other species that do not occur or do not have the potential to occur are not discussed further.

Table 6.3-1
Special Status Species Potentially Occurring within
Swanston Station Transit Village Specific Plan Area

Common Name	Scientific Name	Status Fed/CA/CNPS	Habitat	Likelihood of Occurrence Within the Swanston TVSP Project Area
Birds				
Burrowing owl	*Athene cunicularia*	FSC/CSC/none	Grasslands, open areas near human habitation; nests in old burrows of ground squirrels or other small mammals.	**Low.** The Swanston TVSP project area provides potential foraging habitat for this species, and ground squirrel burrows provide suitable nesting habitat.
Cooper's hawk	*Accipiter cooperi*	none/CSC/ none	Dense stands of live oak and riparian deciduous forest, frequently near water; nest in deciduous trees along riparian areas near streams.	**Low.** The Swanston TVSP project area does not provide suitable nesting habitat for this species. However, the Swanston TVSP project area does provide potential foraging habitat.
Swainson's hawk	*Buteo swainsoni*	none/ST/none	Grasslands and cultivated lands with scattered trees; nests in large trees or open riparian forest.	**Low (nesting)**. Suitable nest trees are present along the street trees in the Swanston TVSP project area. Vacant lots in the Swanston TVSP project area provide potential foraging habitat for this species.
White-tailed kite	*Elanus leucurus*	none/none/CFP	Forages in grasslands and croplands. Nests in large trees adjacent to foraging habitat.	**Moderate (nesting)**. Suitable nest trees are present along the street trees in the Swanston TVSP project area. Vacant lots in the Swanston TVSP project area provide potential foraging habitat for this species.
Purple martin	*Progne subis*	none/CSC/ none	Nest in cavities in trees, under bridges and other human-made structures	**Known**. There is a CNDDB record for this species in the Swanston TVSP project area.
Mammals				
Pallid bat	*Antrozous pallidus*	none/CSC/none	Found in deserts, grasslands, shrublands, woodlands and forests, although it would utilize available roosting areas in crevices of buildings and bridges. Most common in open, dry habitats with rocky areas for roosting.	**Low.** Although potential roosting habitat is present, there are no CNDDB recorded occurrences within five miles of the Swanston TVSP project area.

Table 6.3-1
Special Status Species Potentially Occurring within
Swanston Station Transit Village Specific Plan Area

Common Name	Scientific Name	Status Fed/CA/CNPS	Habitat	Likelihood of Occurrence Within the Swanston TVSP Project Area
Hoary bat	*Lasiurus cinereus*	none/CSC/none	Roosts in dense foliage of medium to large trees. Preferred sites are hidden from above, with few branches below, and have ground cover of low reflectivity. Females and young tend to roost at higher sites in trees.	**Low.** Potential roost trees are present along the street trees in the Swanston TVSP project area but no bats were observed during the field surveys.

Source: CDFG CNDDB, 2007.

Notes:

Special Status Species: Animals that were included in this table have a ranking of CSC or higher. Special-status plants that were included in this table have a ranking of List 2 or higher.

Status:

Federal

FE-Federally listed as Endangered

FT-Federally listed as Threatened

FC-Federal Candidate

BCC-Birds of Conservation Concern

State

SE-State listed as Endangered

ST-State listed as Threatened

CFP-CDFG designated "Fully Protected" or "Protected" – Permit required for "take."

CSC-CDFG designated "Species of Special Concern"

SAL-CDFG Special Animals List

Other

1B – CNPS Ranking. Defined as plants that are rare, threatened, or endangered in California and elsewhere.

2 – CNPS Ranking. Defined as plants that are rare, threatened, or endangered in California, but more common elsewhere.

Likelihood of occurrence evaluations:

A rating of "**Known**" indicates that the species has been observed in the Swanston TVSP project area.

A rating of "**High**" indicates that the species has not been observed, but sufficient information is available to indicate suitable habitat and conditions are present on-site and the species is expected to occur in the Swanston TVSP project area.

A rating of "**Moderate**" indicates that it is not known if the species is present, but suitable habitat exists in the Swanston TVSP project area.

A rating of "**Low**" indicates that species was not found during biological surveys conducted to date in the Swanston TVSP project area and may not be expected given the species' known regional distribution or the quality of habitats located in the Swanston TVSP project area.

Burrowing Owl. Burrowing owls (*Athene cunicularia*) are currently considered a State Species of Concern, because large amounts of formerly suitable habitat have been lost, and populations of burrowing owls have declined throughout the state of California. These owls are year-long residents in generally flat, open, dry grasslands, pastures, deserts, and shrub lands, and in grass, forbs and open-shrub stages of pinyon-juniper and ponderosa pine habitats. They use communal ground squirrel and other small mammal burrows for nesting and cover, as well as artificial structures such as roadside embankments, levees, and berms. They can exhibit high site fidelity, often reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of a pair of burrowing owls during their breeding season (March to August) or, alternatively, by the presence of molted feathers, cast pellets, prey remains (rodents, small reptiles, and large insects), eggshell fragments, or whitewash (guano), at or near a burrow. Burrowing owls are fairly tolerant of human activity near their nest burrows as long as suitable foraging habitat exists nearby. Given the presence of undeveloped lots within the Swanston TVSP project area, there is a low potential for this species to occur.

Cooper's Hawk. Cooper's hawk (*Accipiter cooperii*) is a CDFG Species of Special Concern that breeds throughout most of the wooded portion of the state - from sea level to above 2700 m (0-9000 ft) – and most frequently inhabits dense stands of live oak, riparian deciduous, or other forest habitats near water. While there is no suitable nesting habitat in the Swanston TVSP project area, there is suitable foraging habitat for this species, which has been recorded approximately three miles from the project area. However, given the discontinuous patches of ruderal vegetation within the undeveloped lots, their small size (less than approximately two acres), and the high level of urban disturbance, the Swanston TVSP project area does not provide significant foraging habitat for this species.

Swainson's Hawk. The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species under the California ESA. 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 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 18 miles from the nest, but nests are generally more successful if suitable foraging habitat is present within an approximate 10-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). The greatest concentration of nesting records for Swainson's hawks within the region occurs along the Sacramento River. Although no nesting Swainson's hawks have been observed within the Swanston TVSP project area, the area is within the foraging range of approximately 10 Swainson's hawk nests. However, given the discontinuous patches of ruderal vegetation within the undeveloped lots, their small size (less than approximately two acres), and the high level of urban disturbance, the Swanston TVSP project area does not provide significant foraging or nesting habitat for this species.

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. Although, kites build solitary nests, they 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. No white-tailed kites were observed during the biological survey in February 2006, but suitable nesting habitat can be situated in semi-urban environments within the Swanston TVSP project area.

Purple Martin. The purple martin (*Progne subis*) is a CDFG Species of Special Concern and can be found throughout nearly the entire United States east of the Rocky Mountains. Although declining in many western states, it is also found in isolated areas of Canada, Oregon, Washington, California, Utah, Colorado, Arizona, New Mexico, and Mexico. It is an early spring migrant from its wintering grounds in South America. Generally, purple martins inhabit open areas with an open water source nearby. Martins adapt well in and around people, but are out-competed by starlings and sparrows in urban areas. Purple martins are colonial cavity nesters in abandoned woodpecker holes, human-made nest boxes, or cavities in other structures such as bridges and overpasses. Once established at a nest location, martins usually come back to the same site every year. There is a colony of purple martins that is known to use the underside of the El Camino Avenue overcrossing within the Swanston TVSP project area. This area has been used by purple martins since 2002 and at least 20 pairs were observed in a 2007 survey (Dan Airola, 2007).

Special-Status Bats. Special-status bat species with the potential to occur within the Swanston TVSP project area include the pallid bat (*Antrozous pallida*) and Hoary Bat (*Lasiurus cinereus*); both are CDFG species of special concern. These species use hollow trees, caves, and rock crevices for roosting, and also use artificial structures such as mines, old buildings, and bridges, if suitable structure and seclusion are available. Field surveys did not reveal the presence or any evidence of bats using the El Camino Avenue overcrossing bridge.

Heritage Trees

The Swanston TVSP project area contains many trees. Due to their sizes and types, it is likely that some of the trees within the Swanston TVSP project area meet the City of Sacramento's requirements for designation as "Heritage Trees," based on interpretation of aerial photographs and windshield surveys through the project area.

Applicable Plans and Policies

Federal

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 Swanston TVSP project area such as the American robin (*Turdus migratorius*), red-winged blackbird (*Agelaius phoeniceus*), and northern mockingbird (*Mimus polyglottos*).

Section 404 of the Clean Water Act. Section 404 of the CWA requires that a permit be obtained from the Corps prior to the discharge of dredged or fill materials into any "waters of the United States or wetlands." Waters of the United States are broadly defined in the Corps's regulations (33 CFR 328) to include navigable waterways, their tributaries, lakes, ponds, and wetlands. Wetlands are defined as: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (Federal Register 1982). Wetlands that are not specifically exempt from Section 404 regulations (such as drainage channels excavated on dry land) are considered to be "jurisdictional wetlands." The Corps is required to consult with the USFWS, Environmental Protection Agency, Regional Water Quality Control Board (RWQCB), and CDFG (among other agencies) in carrying out its discretionary authority under Section 404. Low-lying depressions along the railroad tracks and the drainage feature near Calvados Avenue and Green Street have wetland features that could be subject to the Section 404 regulations.

Section 401 of the Clean Water Act. This section of the Act requires a state-issued Water Quality Certification for all projects regulated under Section 404. In California, the RWQCB issues Water Quality Certifications with jurisdiction over a project area. The RWQCB—Sacramento would issue Section 401 Water Quality Certifications for development in the Swanston TVSP project area. If the Corps exercises jurisdiction over wetland features then Section 401 of the Clean Water Act would be applicable for development on those sites.

State

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), (c) and (d) 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 would include those species identified as *endangered, rare, or threatened* as defined in Section 15380(b) of the State CEQA Guidelines.

1) "Endangered" when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors; or

2) "Rare" when either:

   (A) Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environmental worsens; or

(B) The species is likely to become endangered within the foreseeable future throughout all or significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.

Under Section 15380(c) of the State CEQA Guidelines, "a species of animal or plant shall be presumed to be endangered, rare or threatened, if it is listed in:

1) Sections 670.2 or 670.5, Title 14, California Code of Regulations [otherwise known as the California Endangered Species Act, CESA]; or

2) Title 50, Code of Federal Regulations Section 17.11 or 17.12 pursuant to the Federal Endangered Species Act [FESA] as rare, threatened, or endangered."

Under Section 15380(d) of the State CEQA Guidelines, "A species not included in any listing identified in subdivision (c) shall nevertheless be considered to be endangered, rare or threatened, if the species can be shown to meet the following criteria:

- When its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including the loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors; or

- Although not presently threatened with extinction, the species is existing in such small numbers through all or a significant portion of its range that it may become endangered if its environment worsens; or

- The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as the term is used in the FESA."

Two other sources for sensitive species are the California Species of Special Concern and Fully Protected Species lists; and the CNPS "RARE" listings. The status "State Species of Special Concern" and "Fully Protected Species" apply to animals not listed under the CESA and FESA, but which nonetheless either: (1) are declining at a rate that could result in listing; or (2) historically occurred in low numbers and known threats to their persistence currently exist. The CNPS Inventory of Rare and Endangered Vascular Plants of California is sanctioned by CDFG, and serves as a Species of Special Concern list for plants. For purposes of CEQA review, observed plant and wildlife Species of Special Concern, and plants with a CNPS designation of 1a, 1b, and 2, are considered sensitive species, as well as any others that meet the requirements under the State CEQA Guidelines Section 15380(b). No special status plant species were observed and the Swanston TVSP project area does not support habitat that could support special-status plant species.

The significance of impacts on a species under CEQA must be based on analyzing actual rarity and threat of extinction despite legal status or lack thereof.

California Fish and Game Code. Fish and Game Code Section 3503 states that it is "unlawful to take, posses, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Section 3513 states that it is unlawful to take or

possess any migratory nongame bird as designated in the MBTA. Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "take."

California Endangered Species Act. 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 California Code of Regulations Sections 783.4 (a) and (b). No Section 2081(b) permit may authorize the take of "fully protected" species and "specified birds." If a project is planned in an 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.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act charges the State Water Resources Control Board (SWRCB) and the nine RWQCBs statewide with protecting water quality throughout California. Typically, the SWRCB and RWQCB act in concert with the Corps under Section 401 of the CWA in relation to permitting fill of federally jurisdictional waters. The U.S. Supreme Court recently acted to limit the regulatory jurisdiction of the Corps under Section 404 of the CWA (USSC, 2001). This action did not limit the state's regulatory jurisdiction over Waters of the State (Guzy and Porter, 2001). Waters of the state are defined in Section 13050(e) of the Porter-Cologne Water Quality Control Act as "…any surface water or groundwater, including saline waters, within the boundaries of the state." Currently, an applicant would delineate the wetlands on their property utilizing methodology presented in the 1987 Corps Wetland Delineation Manual (Environmental Laboratory 1987) and the delineation would be verified by the Corps. In cases where an area meets the criteria to be considered a wetland, but the Corps does not have jurisdiction, the applicant is referred to the appropriate RWQCB. For the Swanston TVSP project area, the Central Valley Regional Water Quality Control Board (CVRWQCB) could exercise its jurisdiction over wetlands where a project does not require a federal permit, but involves removal or placement of material into waters of the State.

Wetlands Resources Policy. This policy provides for the protection, preservation, restoration, enhancement, and expansion of wetland habitats in California. The administering agencies for this authority are the CDFG, the California Environmental Protection Agency (Cal-EPA), and the CVRWQCB.

Local

City of Sacramento 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. This strategy focuses on areas of the City that have the highest potential to support biological resources, including North Natomas, South Sacramento, and open space areas along the American and Sacramento rivers. As such, there are no City of Sacramento General Plan policies relative to the Swanston TVSP project area.

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 Urban Forest Services reviews project plans and works with City of Sacramento Development Services Department to minimize impacts on street trees from construction and development activities. The Sacramento City Code includes the following provisions to protect City trees:

12.57.020 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.

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 Section 45.01.002).

12.57.60.1 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 12.57.070. (Prior Code Section 45.01.006).

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).

Throughout the Swanston TVSP project area, there are hundreds of trees that could come under the protection of the City of Sacramento Tree Preservation Ordinance and removal of these trees could require a city permit.

Impact Assessment and Mitigation Measures

Methods of Analysis

The biological setting of the Swanston TVSP project area was prepared by reviewing available information on special-status species known to occur in the project vicinity, and on wetlands or their habitat and "other waters of the U.S." This review was supplemented with field surveys conducted in February 2006, to determine which of these species occurs or has potential habitat in the Swanston TVSP project area. The information review included a query of the CNDDB, USFWS, and CNPS species list databases for the Sacramento East, Elk Grove, Florin, Sacramento West, Taylor Monument, Clarksburg, Carmichael, Citrus Heights, and Rio Linda 7.5 minute USGS quadrangles; and review of the habitat requirements of the special-status species determined to have potential to occur in the Swanston TVSP project area through the above queries.

As stated above, results of the CNDDB, USFWS, and CNPS queries are provided in Appendix C. A list of species likely to occur in and/or be affected by the proposed Swanston TVSP project was derived from the CNDDB and USFWS database queries, and is provided in Table 6.3-1. The proposed Swanston TVSP project is evaluated in relation to the sensitive biological resources that could occur in the Swanston TVSP project area.

Standards of Significance

A significant impact would occur if the proposed Swanston TVSP project would:

- Create a potential health hazard, or involve the use, production or disposal of materials that pose a hazard to plant or animal populations in the affected area;
- Result in the substantial degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of threatened or endangered species of plant or animal;
- Affect other species of special concern to agencies or natural resource organizations (such as regulatory waters and wetlands); or
- Violate the Heritage Tree Ordinance (City Code 12.64.040).

Environmental Analysis

It is the location of the future development and improvements that determine potential impacts; i.e., biological impacts are "footprint" impacts and are a concern only when development would occur in areas with biological resources. The only recorded occurrence of a special-status species within the Swanston TVSP project area is purple martin. Other sensitive natural community types, plants, and wildlife were not observed within the Swanston TVSP project area. As a result, development that could occur within the Strategic Plan area would not disturb sensitive biological resources, except for possible jurisdictional wetlands, nesting birds, and potential heritage trees, since development within the Strategic Plan area does not propose development or improvements near the El Camino Avenue overcrossing where the purple martin is known to exist. Development that could occur within the Long-Term Plan area could affect the purple martin as well as nesting birds, potential heritage trees, and jurisdictional wetlands.

In order to determine impacts, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant impacts to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section, BIO refers to Biological Resources.

BIO-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not create a potential health hazard, or involve the use, production or disposal of materials that pose a hazard to plant or animal populations in the Swanston TVSP project area. (LTS)

The Swanston TVSP project area is highly urbanized with limited plant and animal populations and their corresponding natural habitats. As noted in the setting information, there are some areas potentially containing protected plant and animal species within the Long-Term Plan area. There are no known such species in the Swanston TVSP project area.

Parcels in both the Strategic Plan and the Long-Term Plan areas would be zoned for manufacturing, residential mixed use, and open space land uses. These land uses could result in the creation or involvement of materials hazardous to protected or unprotected plant or animal populations. However, as noted in Chapter 6.6, Hazardous Materials, of this EIR, the creation and use of such materials are highly regulated by federal and State law.

The types of development and businesses, especially on the parcels zoned for manufacturing uses, allowed by the City would not result in the creation or use of unregulated hazardous materials. In addition, the allowed types of land uses in the Swanston TVSP project area would not generate outdoor features, such as tailings ponds, that could be harmful to plant or animal populations.

Although the active development of the parcels and construction of structures in accordance with the proposed Swanson TVSP project would involve small amounts of materials considered hazardous, such as degreasers and diesel fuel, these materials would be highly regulated during all phases of construction, both for their use and disposal.

For these reasons, the potential impacts to plant and animal populations in the Strategic Plan and Long-Term Plan areas, due to hazardous materials, would be less than significant.

BIO-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not result in substantial degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of threatened or endangered species of plant or animal. Development could, however, impact nesting birds protected under state and federal regulations. (PS)

Development in the Swanston TVSP project area would have no effect on species identified as a listed rare, threatened, or endangered species and covered by the state and federal Endangered Species Act, since none is known to occur in the vicinity. However, there could be nesting birds that are protected by the Fish and Game Code and the Migratory Bird Treaty Act. The removal of trees that provide nesting habitat for these bird species could be a significant effect when development occurs in both the Strategic Plan and Long-Term Plan areas.

A biological field survey was conducted in February 2006 to locate evidence of listed special-status species or their potential habitats. The survey focused on the potential occurrence of blue elderberry (*Sambucus mexicana*), savanna, habitat for the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), suitable foraging and/or nesting habitat for burrowing owl (*Athene cunicularia*), white-tailed kite (*Elanus leucurus*) and other raptor

species, purple martin (*Progne subis*), and potential seasonal habitat for vernal pool crustaceans. No special-status plant or wildlife species were observed or evidence of their occupancy within the Swanston TVSP project area. In particular, there was no evidence encountered during the field surveys that bats were using the El Camino Avenue bridge overcrossing. In addition, none of the sensitive natural community types identified from the database queries were found within the Swanston TVSP project area.

The Swanston TVSP project area is highly urbanized; therefore, the development of land within the Swanston TVSP project area would not interrupt any wildlife migratory corridors. Field survey and aerial photograph interpretation did not reveal the presence of significant connections to open space lands or river corridors that would be used by native wildlife. There are no wildlife nursery sites adjacent to the Swanston TVSP project area that would be used by local wildlife populations; therefore, there would be no connection to the Swanston TVSP project area. As a result, there would be no impacts associated with development in the Swanston TVSP project area interfering with the movement of native fish or wildlife species.

Tree and vegetation removal during construction activities within the Swanston TVSP project area could result in a "take" caused by the direct mortality of adult or young birds, nest destruction, or disturbance of nesting native bird species (including migratory birds and other special-status species) resulting in nest abandonment and/or the loss of reproductive effort. Migratory bird species are protected by both state (CDFG Code Sections 3503 and 3513) and federal (MBTA of 1918) laws. Disruption of nesting birds within the Swanston TVSP project area, resulting in the abandonment of active nests, or the loss of active nests through structure removal would be a potentially significant impact.

MITIGATION MEASURES. Implementation of the following mitigation measures throughout the entire Swanston TVSP project area would reduce this impact to a less-than-significant level. If any migratory nesting birds are identified, compliance with this mitigation measure would ensure that the birds would not be disturbed during the nesting season. The mitigation measure calls for the creation of a buffer zone (no construction area) that is expected to protect the nest site such that there would be no take and no violation of CDFG Code and/or MBTA. (LTS)

BIO-2.1 Preconstruction Surveys and Protection Measures for Nesting Birds. If trees are removed outside the nesting season (typically March 15 to August 30), there would be no effect on nesting birds and no mitigation is required. Construction activities shall be timed to avoid tree removal during the nesting season. If this cannot be accomplished, then a qualified biologist shall conduct a preconstruction nesting survey no more than one week prior to tree removal to determine if nesting birds are present. If nesting birds are present, an appropriate buffer zone (no construction area) shall be developed by the biologist and in consultation with CDFG, and construction activities shall be suspended in the buffer zone until future surveys indicate that the chicks have fully fledged (left the nest). Completion of preconstruction surveys and avoidance of bird nests would result in no impacts to nesting birds. Survey results shall be valid for a period of 21 days from the date of

the survey. Should vegetation or building removal fail to be conducted within this time frame, a second survey shall be undertaken.

A report shall be submitted to the City of Sacramento, following the completion of the bird nesting survey that includes, at a minimum, the following information:

- A description of methodology including dates of field visits, the names of survey personnel with resumes, and a list of references cited and persons contacted.
- A map showing the location(s) of any bird nests observed on the Swanston TVSP project area.

BIO-3. Development that could occur in the Strategic Plan area would have no effect on species of special concern. However, development that could occur in the Long-Term Plan area could affect the purple martin. (PS)

Based on the field surveys and review of aerial photographs, development that could occur within the Strategic Plan area would not affect special species of concern other than those bird species identified above in Impact BIO-2, because such species are not present in the Strategic Plan area.

However, development that could occur in the Long-Term Plan area could disturb nesting purple martins that are protected by state and federal regulations. A colony of purple martins nests under the El Camino Avenue overcrossing. A 2007 survey revealed that there were 20 nesting pairs under the bridge. This is a significant amount of nesting pairs in the Sacramento region. The Swanston TVSP project proposes sidewalk and landscaping improvements along El Camino Avenue, upsizing pipelines along El Camino Avenue, and changes to land uses, including a new park at the east end of the overcrossing that would result in construction activities that could disturb the purple martins. In addition, purple martins depend heavily upon the area within 300 feet of their nest site for the collection of nesting material. Therefore, construction activities within 300 feet of a nest site under the El Camino Avenue overcrossing could result in the martins not being able to collect nesting material. Loss or disturbance of nesting purple martins would be a significant impact.

MITIGATION MEASURE. The following mitigation measure would reduce potential disturbance to the purple martin to a less-than-significant level. If purple martins are nesting under the bridge, compliance with this mitigation measure would ensure that the birds' access to nesting materials would not be disturbed during the nesting season. (LTS)

BIO-3.1 Construction Limits Around the Purple Martin Nests. Although purple martins are tolerant of human activities, if active nests are present, no construction shall be conducted within 120 feet of the edge of the purple martin colony (determined by the closest active nest hole to the construction activity) during the beginning of the purple martin breeding season from March 15 to May 15. The buffer area shall be avoided to prevent destruction or disturbance of the nest(s) until it is no longer active. The

size of the buffer area may be adjusted if a qualified biologist experienced with purple martin biology and/or CDFG determines it would not be likely to have adverse effects on the martins. The site characteristics used to determine the size of the modified buffer should include a) topographic screening; b) distance from disturbance to nest; c) the size and quality of foraging habitat surrounding the nest; and d) sensitivity of the species to nest disturbances to specific construction activities. No project activity shall commence within the buffer area until a qualified biologist experienced with purple martin biology confirms that nests are no longer active. In addition, no equipment taller than 9 feet in height shall be parked or stored beneath the El Camino Avenue overcrossing within 100 horizontal feet of nest holes from April 15 to July 31.

BIO-4. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) could affect wetlands, waters of the US, or waters of the State. (PS)

Based on the field surveys and review of aerial photographs, development that could occur within the Strategic Plan area would not affect wetlands, waters of the US, or waters of the State, because such resources are not present within the Strategic Plan area. The one small area within the Strategic Plan area containing an open drainage ditch is currently undeveloped and zoned M-1. Under the proposed Swanston TVSP project, the area would be rezoned to C-2-TO. Based on current guidance from the Corps, there is little reason to regard this ditch as a jurisdictional wetland or other waters of the U.S. Nevertheless, the ultimate decision on this determination lies with the Corps and future development of this site in the Strategic Plan area should consult the Corps and applicable State resource agencies (i.e., the CVRWQCB and the CDFG).

Development that could occur in the Long-Term Plan area could affect a series of small isolated topographic depressions and small ditches along the Union Pacific right-of-way. Development of utility improvements (wastewater collection and storm drainage facilities) recommended by the proposed Swanston TVSP project for the Long-Term Plan area could encroach into the Union Pacific right-of-way. However, as noted in the "Setting" section, the ditch and topographic depressions, like the drainage ditch in the Strategic Plan area, would not likely come under the regulatory authority of the Corps because they lack a significant nexus, and are not permanent bodies of water or connected to a navigable water of the U.S. Accordingly, future development that could occur in the Long-Term Plan area would most likely not result in significant impacts on wetlands and other waters of the U.S. However, if the Corps were to determine that the ditch and/or these depressions were under their regulatory authority, and they were to be disturbed, future development of these areas would need to be permitted by the Corps.

Mitigation would need to occur to offset any impacts to wetlands or waters of the U.S., under Corps authority, in the Strategic Plan and Long-Term Plan areas. If the potential impacts are less than 0.5 acres, future development in these areas could qualify for a Corps Nationwide

Permit; if the affected acreage exceeds 0.5 acres, a Corps Individual Permit could be necessary.

MITIGATION MEASURE. Before construction occurs within portions of the Swanston TVSP project area that could support potentially jurisdictional wetlands and other waters of the U.S. (i.e., the drainage ditch on the undeveloped parcel at the northwest corner of Green Street and Calvados Avenue and topographic depressions identified along the UP tracks within the UP right-of-way), a wetland delineation shall be conducted and verified by the Corps. Implementation of Mitigation Measure BIO-4.1 would ensure that no net loss of the function or value of wetlands would occur. Compliance with this measure would mitigate potential impacts on wetland habitats or other waters of the U.S. to a less-than-significant level. If avoidance is not possible, then the conditions and mitigation requirements established by the Corps 404 permit shall apply and be implemented by the project applicant seeking to fill the wetland or other waters of the U.S. (LTS)

BIO-4.1 Avoidance of Wetlands. The City of Sacramento shall ensure no-net loss of the function or value of all jurisdictional wetlands. This can be achieved through avoidance measures to avoid direct impacts on preserved wetland habitat or other jurisdictional "waters of the U.S." These measures shall include, but are not limited to, the following:

- A four-foot-tall, brightly colored (usually orange or yellow) synthetic mesh material fence (or an approved equivalent) shall be installed a minimum of 50 feet outside the edge of any wetland habitats in the immediate vicinity of proposed construction areas. In addition to the orange construction fencing, silt fencing shall be placed next to the orange fence to further protect the wetland from runoff or other potential pollutants. Prior to initiation of construction activities, a qualified biologist shall inspect the protective fencing to ensure that all wetland features have been appropriately fenced. During construction, no encroachment into fenced areas shall be permitted and the fence shall remain in place until all construction activities have been completed.

- Staging areas shall be located a minimum of 100 feet away from wetland habitats. Temporary stockpiling of excavated or imported material shall occur only in project approved construction staging areas. Excess excavated soil shall be disposed of at a regional landfill or at another approved and/or properly permitted location. Stockpiles that are to remain on the site throughout the wet season shall be protected to prevent erosion.

- The wetlands not directly affected by construction activities shall be protected using Best Management Practices erosion control techniques.

BIO-5. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) could result in the loss of heritage trees; however, compliance with the City's Heritage Tree Ordinance (City Code 12.64.040) would afford protection to, or replacement of, heritage trees. (LTS)

The City of Sacramento has adopted a Tree Preservation Ordinance to protect trees as a significant resource to the community. Development associated with the implementation of the proposed Swanston TVSP project (in both the Strategic Plan and Long-Term Plan areas) would result in disturbance or loss of protected trees. Protected trees could be removed or affected during staging, trimming for equipment access, and other construction-related activities, as well as for site development. As part of the proposed Swanston TVSP project, sidewalk improvements, infrastructure upgrades, construction of plazas and promenades, and traffic calming techniques all have the potential to remove street trees. In addition, development of parcels in accordance with the proposed Swanston TVSP project could necessitate the removal of trees. Some of these trees could meet the City of Sacramento's requirements for designation as "Heritage Trees." Development in the Swanston TVSP project area would be required to comply with the City's Tree Ordinance and implement tree-protection measures prior to and during project construction. To the maximum extent feasible, the project design must avoid loss of protected trees. As part of project design, project applicants must retain a certified arborist to survey trees in the proposed development area, including potential construction staging areas, and identify and evaluate trees that will be removed. If the arborist's survey does not identify any protected trees that would be removed or damaged as a result of development within the Swanston TVSP project area, no further mitigation is necessary.

If protected trees (or their canopy) are identified within the area of disturbance, measures must be taken to avoid impacts on protected trees, as detailed in the City's Tree Ordinance. Protected trees that are lost as a result of the project would be required to be replaced according to the provisions of the ordinance (Section 12.64.040), which generally requires a 1-inch-diameter replacement for each inch lost. Tree replacement would occur after project construction and shall be monitored by qualified arborists as outlined in the City Code. Compliance with the City's tree ordinance would ensure that this impact would be less than significant.

Cumulative Analysis

Cumulative impacts on biological resources are analyzed on either a regional (Central Valley), county-wide, or city-wide level, depending on the resource under discussion. For this analysis, buildout of the City's General Plan is assumed and the Sacramento Area Council of Governments regional Blueprint is also anticipated. The cumulative context for complying with local policies and/or ordinances protecting biological resources is the City Sacramento.

BIO-6. Development that could under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development, could result in a cumulative loss of biological resources. (PS)

The primary effects of the proposed Swanston TVSP project, when considered with other projects in the region, could be the cumulative loss of nesting purple martins. In addition, development under the proposed Swanston TVSP project in combination with other projects could have potential impacts related to the cumulative loss of potential nesting habitat for birds protected under the MBTA, potential wetlands and "other waters of the U.S.," and potential "Heritage Trees." However, the same protective laws and regulations that apply to development in the Swanston TVSP project area also apply elsewhere in the City and would reduce the potential disturbance to resources and habitats that might otherwise occur. In addition, the CDFG Code and MBTA regulations protecting nesting and migratory birds would apply throughout the state and reduce the contribution of individual projects to less than cumulative considerably.

MITIGATION MEASURES. Implementation of Mitigation Measures BIO-2.1 and BIO-3.1 would reduce potential direct effects on migratory bird species by identifying occupied nests, delaying construction if necessary, and providing a buffer zone (no construction area) around occupied nests to ensure that no take or destruction of nests or eggs occurs. Because these mitigation measures reduce impacts to nesting birds, their young and eggs, the proposed Swanston TVSP project would not contribute to other losses locally or regionally; therefore, the impact of the proposed Swanston TVSP project would not be cumulatively considerable. In addition, protection of migratory bird species is required by state and federal laws, so that other projects in the City and region would also have to implement measures to reduce their individual impacts.

Implementation of Mitigation Measure BIO-4.1 would reduce the impacts of the Swanston TVSP project on potential wetlands and other waters of the U.S. and also reduce the contribution of the proposed Swanston TVSP project to the cumulative impact on biological resources to a level that is less than considerable. Section 404 of the Clean Water Act would similarly apply to other projects that could disturb wetlands, so that cumulative impacts on wetlands and other waters of the U.S. would be less than significant. Under the Nationwide and Individual Permits issued pursuant to Section 404, project applicants are required to mitigate for wetland loss; mitigation can be required to replace wetland acreage at greater than a 1 to 1 ratio, meaning that more wetland acreage can be created than is lost. The net result is a no net loss of wetland habitat.

THIS PAGE INTENTIONALLY LEFT BLANK

6.4 CULTURAL RESOURCES

Introduction

This section of the EIR assesses potential effects to cultural resources that could result from development of the proposed Swanston TVSP project. Cultural resources are defined as prehistoric or historic-period archeological resources and historic-period buildings and structures. This section briefly describes the cultural setting of the Swanston TVSP project area and discusses known cultural resources on or within the Swanston TVSP project area. Applicable state, federal, and local regulations are identified, followed by impact analysis and mitigation measures, where available, to reduce adverse impacts on cultural resources.

This section is based on the *Sacramento Regional Transit District Northeast Corridor Facilities Enhancement Initial Study/Environmental Assessment: Cultural Resources Assessment* prepared by Historic Environment Consultants and Cultural Resources Unlimited in 2001; a records search conducted by the North Central Information Center (NCIC) in August 2007; the Preservation Element of City of Sacramento General Plan; the Sacramento Register of Historic and Cultural Resources; and a project-level survey of the Strategic Plan area by PBS&J cultural resources staff.

One comment concerning cultural resources was received during the NOP comment period. The NAHC submitted a letter that included its recommendations for assessing project-related impacts on cultural resources. The recommendations included requesting a records search from the appropriate CHRIS information center, conducting an archaeology survey of the project site if warranted by the results of the records search, requesting the NAHC to search the Sacred Lands File, contacting the NAHC-provided list of Native American contacts to obtain their input on the project, and including in the EIR procedures for the identification and treatment of accidentally discovered archeological resources and human remains. With the exception of an archeological survey of the project site, which was not conducted due to the urbanized nature of the project site, all of the NAHC recommendations were followed in the cultural resource investigation conducted for the proposed Swanston TVSP project that is documented in this section of the EIR.

Setting

Early Sacramento

Native American settlement in Sacramento County began 12,000 years ago. The Nisenan were attracted to the area by its year-round water supply and the food sources it provided, including game, fish, seeds, and nuts. Their hunting and gathering culture survived longer than other California tribes because of their relative isolation from the Spanish mission system along the coast. Significant contact with non-natives eventually came in the early nineteenth century as Spanish, Mexican, and American explorers began to investigate the Sacramento Valley. Those who were not killed by the diseases carried by the Europeans were forced away from their lands. American trappers and settlers arrived

around what became Sacramento in the 1830s, encouraged by the fur trade and Mexican government land grants. John A. Sutter arrived in 1839 and established a fort and trading post, forming the core of the settlement that became Sacramento. The Gold Rush of 1849 and the 1850s attracted fortune-seeking emigrants to California. Sacramento's location near the goldfields led to it becoming a primary supply point for the influx of gold seekers. The Sacramento River allowed the City to serve as the main port for shipping gold bound for San Francisco.

As the small settlement grew, Sacramento's citizens began to address the problem of flood management. Major floods of the American River and Sacramento River destroyed much of the City several times between 1850 and 1880. To combat this threat, the City's citizens redirected the American River in 1862 to eliminate a curve in its course through the City. The redirected route created the west end of the American River that passes to the north of the downtown core. Levees were also built to reduce the risk of flooding, allowing the land south of the American River to be developed, including agricultural uses.

The climate, soil conditions, and ample supply of irrigation water that developed around Sacramento during the late nineteenth century, as well as its location as a river and railroad transportation hub, led to the area's importance as one of California's leading agricultural regions. With successful diversification of produce, technical innovations, and growing national and international demand for California-grown fruits and vegetables, Sacramento flourished and canning became one of the region's most important industries, ensuring distribution of the area's agricultural products and employing thousands of workers through much of the early to mid-twentieth century.

Swanston Station Transit Village Specific Plan Area History

Historically, the area surrounding around Swanston Station was almost entirely devoted to agriculture. In the 1880s, James Haggin, a prominent lawyer and businessman, ran a 44,800-acre horse-breeding ranch in the area, considered to have been the largest of its time. Haggin's prize-winning horses live on in the names of local area streets, such as "Ben Ali," "Calvados," and "Dixieanne." The area was largely undeveloped until 1915 when George Swanston, the area's namesake, opened the Swanston & Son meatpacking plant. Located adjacent to what is now Swanston Station, Mr. Swanston used refrigerated rail cars to distribute his goods throughout California and the greater United States.

By 1930, the City of North Sacramento was recognized as a center for light and heavy industrial businesses, many of which were clustered around the area's railroad lines. Many of these factories and plants, including the Swanston Meat Packing Company, the Essex Lumber Company, and the Sacramento Wool Company brought the area national recognition. The 1930s also marked the establishment of Del Paso Boulevard, located to the west of the Swanston TVSP project area, as the main commercial and retail strip of North Sacramento.

In 1964, the City of North Sacramento merged with the City of Sacramento. According to the Del Paso Boulevard Streetscape Master Plan, the idea of consolidation originated in the City of North Sacramento in 1929 by residents who believed that "flood protection could be more easily achieved if

the two cities joined forces." With this merger, the City of Sacramento gained an area that was approximately 6.5 square miles with an estimated population of 15,000.

Throughout the latter half of the 20th century, many of the area's heavy industrial land uses gave way to additional commercial and retail development. During the 1970s and 1980s, much of North Sacramento began to decline and struggle financially. The area's economic downslide can be traced to the construction of the North Sacramento Freeway (Highway 160) in 1955, which physically and physiologically isolated North Sacramento from the region.

By 1992, Regional Transit, Sacramento's transit provider, had begun light rail service at Swanston Station. The 18.3-mile system linked the region's northeastern (Interstate 80) and eastern (Highway 50) corridors with Downtown Sacramento. The early 1990s also marked the rebirth of Del Paso Boulevard as an arts and cultural district. In 1992, the City began the Phantom Galleries program, in which property owners lend their vacant spaces to local artists to create temporary gallery and performing art spaces, on the second Saturday of each month. Today, the area features several permanent art galleries, unique retail stores, and local restaurants.

Since the early 1990s, the Swanston area has been the focus of several planning studies. Portions of the Swanston TVSP project area are within the North Sacramento Redevelopment Project Area that was adopted by the Sacramento Housing and Redevelopment Authority in 1992. The study area also includes the Del Paso Boulevard Special Planning District, which was established in 1994 and covers the area along and adjacent to Del Paso Boulevard.

Historical Resources

The Preservation Element of the City of Sacramento General Plan aims to protect and preserve historic and cultural resources through the designation of historic structures, landmarks, and historic districts. None of the City of Sacramento's 27 designated Historic Districts and two Special Planning Districts are within the Swanston TVSP project area according the City of Sacramento's Register of Historic and Cultural Resources (2005). In addition, no buildings within the Swanston TVSP project area are currently designated as a local, state, or national historic resources according to the aforementioned survey.

The *Cultural Resources Assessment* prepared by Historic Environment Consultants and Cultural Resources Unlimited in 2001 evaluated a total of 20 properties that included structures. Of the 20 properties, only the building at 880 Arden Way lies within the Swanston TVSP project area (within the Long-Term Plan area). An initial evaluation of the building at 880 Arden Way in the *Cultural Resources Assessment* reports that it possesses limited architectural and historic value due to physical alterations from a recent remodel.

Three residences within the Swanston TVSP project area that were previously evaluated appear to date from the 1920s or 1930s. However, according to the *Cultural Resources Assessment,* they do not appear on their current sites until 1940 or the mid-1950s, indicating that they were probably moved to their present sites. Later evaluations of historic buildings performed by the City of Sacramento have

not identified these or any other buildings in the Swanston TVSP project area as being eligible for listing on the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR).

PBS&J cultural resources staff conducted a survey of the Strategic Plan area on February 4, 2009. Based on building construction date information provided by the Sacramento County Office of the Assessor, a PBS&J architectural historian and historian conducted an exterior visual inspection of all buildings in the Strategic Plan area that are 45 years old or older. Photographs and assessments of physical integrity for each of the buildings were forwarded to the City of Sacramento Preservation Director, who determined that five of the historic-age buildings in the Strategic Plan area could possess sufficient integrity to qualify as historical resources pursuant to CEQA Guidelines Section 15064.5 (see *State Regulations* below) pending further historical research. These include 2295 Evergreen Street, 2418 Evergreen Street, 948 Arden Way, and 973 Arden Way:

- The building at 2295 Evergreen Street is single-story brick building that appears to retain significant physical integrity (e.g., exposed brick, potentially original windows, simple design).
- The three buildings at 2418 Evergreen Street are industrial buildings.
- The building at 948 Arden Way currently houses the Del Monte Meat Co. Del Monte purchased the building in the 1970s; previous owners include Minimax Wholesale Food Buying Service and Capital Meat Co., which was founded by Harry B. Fong in 1940.[1]
- The two buildings of interest at 973 Arden Way include the single-story brick building on the corner of Arden Way and Evergreen Street that currently houses California Doors and the wood-frame building at the corner of Arden Way and Erickson Street that currently houses Lewis Deli Corner.

In addition, during the survey, PBS&J cultural resources staff observed and photographed a segment of the Union Pacific rail line that runs through the Swanston TVSP project area, but outside of the Strategic Plan area (see Figure 2-2 in Chapter 2, Project Description). The segment is a recorded portion of the First Transcontinental Railroad, portions of which are part of California State Historical Landmark #780-8. While the segment that runs through the Swanston TVSP project area was recorded as part of the First Transcontinental Railroad, it is not listed as a contributing element to California State Historical Landmark #780-8. The original tracks have been replaced and the modern commercial and industrial uses that surround the segment substantially diminish the integrity of the historical setting that would be required to make the segment a contributing element to the overall resource. Therefore, the segment of the former Central/Southern Pacific Railroad (now Union Pacific) that runs through the Swanston TVSP project area does not appear to qualify as an historical resource pursuant to CEQA Guidelines Section 15064.5 (see State Regulations below).

[1] Historic Environment Consultants, *Northeast Corridor Service and Facilities Enhancement: Cultural Resources Study*, 2001, page 18.

Archaeological Resources

The NCIC records search did not identify any recorded prehistoric or historic-period archeological sites in the project area or within a ¼-mile radius and concluded that "there is a low potential for prehistoric or ethno-historic period Native American sites in the project area."[2]

Paleontological Resources

The geologic setting of the Swanston TVSP project area consists of alluvial soils that have developed on old river plains and terraces. These soils are relatively shallow and are underlain by claypan, hardpan or semi-consolidated sandy silty clay. Based on soil maps reviewed for the proposed Swanston TVSP project, the area has "no fossil potential."[3] There are no formally recorded paleontological resources in the study area; however, the area has not been thoroughly studied and the presence or absence of such resources cannot be absolutely determined.

Applicable Plans and Policies

Federal, state, and local governments have developed laws and regulations designed to protect significant cultural resources that may be affected by actions they undertake or regulate. The National Historic Preservation Act (NHPA) and CEQA are the basic federal and state laws governing the preservation of historic and archeological resources of national, regional, state and/or local significance.

Federal

Federal regulations for cultural resources are primarily governed by Section 106 of the National Historic Preservation Act of 1966, which applies to actions taken by federal agencies. The goal of the Section 106 review process is to offer a measure of protection to sites that are determined eligible for listing on the NRHP. Since federal action is not anticipated as part of the proposed Swanston TVSP project, Section 106 would not apply. However, in the future, if subsequent actions in accordance with the proposed Swanston TVSP project involve federal agency participation, such as for housing, roadways, or transit improvements, Section 106 may become applicable.

The American Indian Religious Freedom Act, Title 42 United States Code, Section 1996, protects Native American religious practices, ethnic heritage sites, and land uses.

State

Under CEQA, public agencies must consider the effects of their actions on both "historical resources" and "unique archeological resources." Pursuant to Public Resources Code, Section 21084.1, a

[2] North Central Information Center, *Records Search Results for Swanston Station Specific Plan Project*, August 20, 2007.

[3] Jennings, C. W., 1977, Geologic Map of California, 1:750,000, California Division of Mines and Geology, Sacramento.

"project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment."

"Historical resource" is a term with a defined statutory meaning (see Public Resources Code, Section 21084.1 and CEQA Guidelines Section 15064.5(a) and (b)). The term embraces any resource listed in or determined to be eligible for listing in the CRHR. The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be "historical resources" for the purposes of CEQA unless a preponderance of evidence indicates otherwise (Public Resources Code, Section 5024.1; California Code of Regulations, Title 14, Section 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

In addition to assessing whether historical resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project's impacts on historical resources (Public Resources Code, Section 21084.1; CEQA Guidelines, Section 15064.5(a)(3)). In general, an historical resource, under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that:

a) is historically or archeologically significant; or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and

b) meets any of the following criteria:

    1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

    2. is associated with the lives of persons important in our past;

    3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

    4. has yielded, or may be likely to yield, information important in prehistory or history.

For historic structures, CEQA Guidelines Section 15064.5(b)(3) indicates that a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), shall mitigate impacts to a level of less than significant.

As noted above, CEQA also requires lead agencies to consider whether projects will impact "unique archeological resources." Public Resources Code, Section 21083.2(g) states that "unique archeological resource" means an archeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person" (Public Resources Code, Section 21083.2(g)).

Treatment options under Section 21083.2 of the Public Resources Code include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a "unique archeological resource").

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

Section 7050.5(b) of the California Health and Safety Code specifies protocol when human remains are discovered. The code states:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

CEQA Guidelines Section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, the lead agency is required to consult with the appropriate Native Americans as identified by the NAHC and directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Local

City of Sacramento General Plan. The following goals and policies from the City of Sacramento General Plan are applicable to the proposed Swanston TVSP project:

Preservation of Natural Resources

Goal D: Work with the County of Sacramento to identify, protect, and enhance physical features and settings that are unique to the area to the maximum extent feasible.

Policy 2: Work with all interested parties to protect ancient burial grounds threatened by development activity and preserve their artifacts, either on-site or at a suitable relocation, to the extent feasible. Ancient Indian tribes used various locations within the City limits and influence area for burial grounds. These burial grounds are a unique heritage. When threatened by development, these sites should evaluate for their content and uniqueness. The sites should either be preserved or their contents removed and preserved at a new location depending upon an analysis of the site and the development factors involved.

Resource Preservation

Goal B: To protect and preserve important historic and cultural resources that serve as significant, visible reminders of the City's social and architectural history.

Historic Preservation Ordinance. The City of Sacramento's historic preservation program began in 1975 with the enactment of the City's first Historic Preservation Ordinance. The current Historic Preservation Ordinance (No. 2006-063) was enacted in October 2006. The purpose of the Historic Preservation Ordinance is to identify, protect, and encourage the preservation of significant resources; maintain an inventory and ensure the preservation of these resources; encourage maintenance and rehabilitation of the resources; encourage retention, preservation, and re-use of the resources; safeguard City resources; provide consistency with state and federal regulations; protect and enhance the City's attraction to tourists; foster civic pride in the City's resources; and encourage new development to be aesthetically compatible.

Of note for future development under the proposed Swanston TVSP project is Article VIII of the Historic Preservation Ordinance. In particular, if a permit is sought to demolish or relocate a building or structure that was constructed at least 50 years prior to the date of application for demolition or

relocation, and that building or structure is not currently on the official register, is not the subject of a pending nomination, has not been nominated for placement on the official register or reviewed pursuant to this section within the past three years, the permit application shall be referred to the Preservation Director to allow the director to make a preliminary determination whether the structure should be nominated for placement on the official register.

*Preservation Commission***.** The Historic Preservation Ordinance establishes a Preservation Commission. The Preservation Commission's primary responsibility is to develop and recommend to the City Council preservation policies appropriate for inclusion in the General Plan and other regulatory plans and programs of the City and to provide oversight relative to the maintenance and integrity of the Sacramento Register of Historical and Cultural Resources. The Preservation Commission reviews, nominates, and makes recommendations to the City Council on properties eligible for listing in the Sacramento Register as landmarks, historic districts, and contributing resources as set forth in City Code Chapter 17.134, Historic Preservation.

Sacramento Register. The Historic Preservation Chapter of the City Code provides for the designation of Landmarks, Contributing Resources, and Historic Districts into the Sacramento Register of Historic and Cultural Resources (Sacramento Register). The Sacramento Register includes all listed historic resources in the City of Sacramento. This includes a listing of all individually designated City Landmarks and of the City designated Historic Districts. The Sacramento Register also includes listings or maps of the properties within two of the City's Special Planning Districts that have been afforded preservation protection by ordinance. Also included are all the properties within the City that are currently listed in the NRHP and the CRHR and properties listed in the State of California's Historical Properties Directory.

There are five factors to be considered in determining whether to place a nominated resource on the Sacramento Register as a landmark. These factors, as stated in the Historic Preservation Ordinance (17.134.170 A.1), are:

a. It is associated with events that have made a significance contribution to the broad patterns of the history of the city, region, state or nation;

b. It is associated with the lives of persons significant in the city's past;

c. It embodies the distinctive characteristics of a type, period or method of construction;

d. It represents the work of an important creative individual or master;

e. It possess high artistic values; or

f. It has yielded, or may be likely to yield, information important in the prehistory or history of the city, the region, the state or the nation

Impact Assessment and Mitigation Measures

Standards of Significance

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if the proposed Swanston TVSP project would:

- Cause a substantial change in the significance of an historical or archeological resource as defined in CEQA Guidelines Section 15064.5; or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Environmental Analysis

The following impact analysis and recommendations for mitigation measures would apply to construction and development activities in both the Strategic Plan area as well as at other sites or locations in the Long-Term Plan area. In order to determine impacts for each resource, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant impacts to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section, CR refers to Cultural Resources.

CR-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not cause a substantial change in the significance of an historical resource. (LTS)

None of the City of Sacramento's 27 designated Historic Districts and two Special Planning Districts are within the Swanston TVSP project area according the City of Sacramento's Register of Historic and Cultural Resources (2005). In addition, no buildings within the Swanston TVSP project area are currently designated as a local, state, or national historic resources.

The *Cultural Resources Assessment* prepared by Historic Environment Consultants and Cultural Resources Unlimited in 2001 evaluated a total of 20 properties that included structures. Of the 20 properties, only the building at 880 Arden Way is within the Long-Term Plan area. An initial evaluation of the building at 880 Arden Way in the *Cultural Resources Assessment* reports that it possesses limited architectural and historic value due to physical alterations from a recent remodel.

Three residences within the Long-Term Plan area that were previously evaluated appear to date from the 1920s or 1930s. However, according to the *Cultural Resources Assessment*, they do not appear on their current sites until 1940 or the mid-1950s, indicating that they were probably moved to their present sites. Later evaluations of historic buildings performed by the

City of Sacramento have not identified these or any other buildings in the Swanston TVSP project area as being eligible for listing on the NRHP or the CRHR.

PBS&J cultural resources staff conducted a survey of the Strategic Plan area on February 4, 2009. Based on building construction date information provided by the Sacramento County Office of the Assessor, a PBS&J architectural historian and historian conducted an exterior visual inspection of all buildings in the Strategic Plan area that area 45 years old or older. Photographs and assessments of physical integrity for each of the buildings were forwarded to the City of Sacramento Preservation Director, who determined that five of the historic-age buildings in the Strategic Plan area could possesses sufficient integrity to qualify as historical resources pursuant to CEQA Guidelines Section 15064.5, pending further historical research. These resources include 2295 Evergreen Street, 2418 Evergreen Street, 948 Arden Way, and two building at 973 Arden Way, as described earlier in this section.

During the survey, PBS&J cultural resources staff also observed and photographed a rail segment that runs through the Swanston TVSP project area, but outside of the Strategic Plan area (see Figure 2-2 in Chapter 2, Project Description). The segment is a recorded portion of the First Transcontinental Railroad, portions of which are part of California State Historical Landmark #780-8. However, it is not a contributing element to California State Historical Landmark #780-8. As noted earlier, the original tracks have been replaced and the modern commercial and industrial uses that surround the segment substantially diminish the integrity of the historical setting that would be required to make the segment a contributing element to the overall resource. Therefore, the segment of the Central/Southern Pacific Railroad that runs through the Swanston TVSP project area does not appear to qualify as an historical resource pursuant to CEQA Guidelines Section 15064.5.

No buildings, structures, or railroad features are proposed to be demolished, removed, or altered in the Swanston TVSP project area directly as a result of the proposed Swanston TVSP project. However, the change in land use and zoning designations could facilitate new development. Such development or revitalization could involve the demolition or alteration of existing buildings or street and utility improvements that could result in significant impacts on historical resources in the Long-Term Plan area, which was not surveyed at the project level by PBS&J cultural resources staff. In addition, buildings, structures, and objects 50 years old or older meet the age criterion to potentially qualify as historical resources pursuant to CEQA. Resources within the Strategic Plan area and Long-Term Plan area that currently do not meet the aforementioned age criterion could meet the age criterion over the period of development within the Swanston TVSP project area.

Development that could occur within the Swanston TVSP project area would be required to undergo project-level City review as well as review in accordance with Article VIII of the Historic Preservation Chapter of the City Code (17.134.430), which requires that permit applications to demolish or relocate and buildings or structures constructed at least 50 years prior to the date of application shall be referred to the Preservation Director to allow the director to make a preliminary determination as to whether the structure should be nominated

for placement on the Sacramento Register. Because development within the Swanston TVSP project area would be required to undergo project-level review by the Preservation Director, impacts to historical and potentially historical resources are considered less than significant.

CR-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not be expected to cause a substantial change in the significance of an archeological or paleontological resource because such development would be subject to the City's Historic Preservation Ordinance. Nevertheless there may be unknown resources encountered that could be adversely affected by future development. (PS)

The cultural resources records search prepared for the proposed Swanston TVSP project revealed no recorded prehistoric or historic-period archeological sites in the Swanston TVSP project area. Three prehistoric archeological sites have been recorded within a ¼-mile radius of the Swanston TVSP project area and 12 records of archeological studies have been conducted within a ¼ mile of the Swanston TVSP project area. The records search concludes that, given the environmental setting of the Swanston TVSP project area (developed, urbanized), there is a low potential for locating additional prehistoric or ethnohistoric-period resources within the Swanston TVSP project area. Based on review of soil maps, the Swanston TVSP project area has "no fossil potential."[4] However, there is a possibility that previously undiscovered resources exist in the Swanston TVSP project area that could be uncovered during grading, excavation, and other earth-moving activities during construction. If encountered during construction such resources could be damaged or destroyed. This would be considered a potentially significant impact.

MITIGATION MEASURES. The following mitigation measures provide discovery and evaluation procedures for any previously unknown archeological or paleontological resources in the Swanston TVSP project area and requires that a professional employ data recovery or other methods that meet the Secretary of the Interior's Standards to reduce impacts on unique archeological and paleontolgical resources. Implementation of these measures would reduce this impact to a less-than-significant level. (LTS)

CR-2.1 Treatment of Unexpected Archaeological Resources. In the event that any prehistoric or historic-period subsurface archeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, animal bone, obsidian, and/or mortar are discovered during demolition/ construction-related earth-moving activities, all ground-disturbing activity within 100 feet of the resources shall be halted immediately, and the City of Sacramento Development Services Department and the City's Preservation Director shall be notified within 24 hours. The project applicant shall retain an archeologist who meets the Secretary of the Interior's professional qualifications for Archeology. The City Preservation Director shall consult with the archeologist to assess the

[4] Jennings, C. W., 1977, Geologic Map of California, 1:750,000, California Division of Mines and Geology, Sacramento.

significance of the find. Impacts to any significant resources shall be mitigated to a less-than-significant level through data recovery or other methods determined adequate by the City Preservation Director and that are consistent with the Secretary of the Interior's Standards for Archeological Documentation.

If Native American archeological, ethnographic, or spiritual resources are discovered, all identification and treatment of the resources shall be conducted by a qualified archaeologist and Native American representatives who are approved by the local Native American community as scholars of the cultural traditions. In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted. When historic archeological sites or historic architectural features are involved, all identification and treatment is to be carried out by historical archaeologists or architectural historians who meet the Secretary of the Interior's professional qualifications for Archaeology and/or Architectural History.

CR-2.2 *Cessation of Construction if Human Remains Encountered.* If human remains are discovered during any demolition/construction activities, all ground-disturbing activity within 50 feet of the remains shall be halted immediately, and the Sacramento County coroner shall be notified immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The project applicant shall also retain a professional archeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City of Sacramento Development Services Department shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in CEQA Guidelines Section 15064.5(e) and Public Resources Code Section 5097.98. The project applicant shall implement approved mitigation, to be verified by the City of Sacramento Development Services Department, before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.

CR-2.3 *Treatment of Unexpected Paleontological Resources.* Should paleontological resources be identified at any project construction sites during any phase of construction, the project manager shall cease operation at the site of the discovery and immediately notify the City of Sacramento Development Services Department. The project applicant shall retain a qualified paleontologist to provide an evaluation

of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the City of Sacramento Development Services Department shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, specific plan policies and land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.

Cumulative Analysis

The cumulative context for the cultural resources analysis varies depending on the type of resource. The cumulative context for prehistoric resources, those associated with Native American peoples, would include the geographic area that was inhabited by that population. In this case, it would include portions of six counties, Sacramento, Sutter, Placer, Yuba, El Dorado, and Nevada. The cumulative context for the historical resources is the City of Sacramento.

CR-3. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development in the Central Valley, could cause a substantial change in the significance of a historical or archeological resource as defined in CEQA Guidelines Section 15064.5. (PS)

Because all significant resources are unique and non-renewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one site or resource affects all others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The boundaries of an archeologically important site extend beyond the site boundaries and many historic properties are best understood in the context of their surroundings in conjunction with other properties.

As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on project or parcel boundaries. The cultural system is represented archeologically by the total inventory of all sites and other cultural remains in the region. Proper planning and appropriate mitigation can help to capture and preserve knowledge of such resources and can provide opportunities for increasing an understanding of the past environmental conditions and cultures by recording data about sites discovered and preserving artifacts found. Federal, state, and local laws are also in place, as discussed above, that protect these resources in most instances. For example, because development within the Swanston TVSP project area would be required to undergo project-level review by the Preservation Director, impacts on historcial resources are considered less than significant. Nonetheless, the proposed Swanston TVSP project has the potential to adversely affect significant archeological resources that are unique and non-renewable members of finite classes, the proposed Swanston TVSP project's incremental contribution to these

cumulative effects would itself be potentially cumulatively considerable; therefore, this is a potentially significant cumulative impact.

MITIGATION MEASURES. Implementation of Mitigation Measures CR-2.1 and CR-2.2 provides for the treatment and protection of previously unknown archaeolgical resources discovered during the course of construction and would therefore reduce the project's contribution to the cumulative loss of archeological resources to a less-than-significant level.

CR-4. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development in the Central Valley, could cause a substantial change in the significance of a paleontological resource or site or unique geologic feature. (PS)

Because all significant paleontological resources are unique and non-renewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one paleontological site affects all others in a region because these resources are best understood in the context of the entirety of the ancient ecologic system of which they formed a part. A meaningful approach to preserving and managing paleontological resources must focus on the likely distribution of those resources, rather than on project or parcel boundaries. The ancient ecologic system is represented paleontologically by the total inventory of all sites and other fossil remains. Federal, State, and local laws are in place, as discussed above, that protect these resources. However, the proposed Swanston TVSP project's incremental contribution to these significant cumulative impacts would itself be potentially cumulatively considerable, and thus potentially significant.

MITIGATION MEASURES. Implementation of Mitigation Measures CR-2.3 provides for the treatment and protection of previously unknown paleontological resources discovered during the course of construction and would therefore reduce the project's contribution to the cumulative loss of paleontological resources to a less-than-significant level.

THIS PAGE INTENTIONALLY LEFT BLANK

6.5 GEOLOGY, SOILS, AND SEISMICITY

Introduction

This section describes the existing geology, soils, and seismic conditions in the vicinity and within the Swanston TVSP project area. It presents a discussion of existing geologic conditions in a regional and site-specific context, evaluates geotechnical problems that could affect development that could occur within the Swanston TVSP project area, and analyzes the potential physical environmental effects related to seismic hazards and erosion. Geologic conditions described include topography, stratigraphy, faulting and seismicity. Particular emphasis is placed on features/conditions that potentially could pose engineering problems or hazards for future development or redevelopment of property within the Swanston TVSP project area. Examples of these hazards include ground shaking, liquefaction, settlement, lateral-spreading, lurching and expansive soil, all of which can cause long-term concerns about the structural integrity of future construction of buildings, roadways, pedestrian crossings, and utility improvements proposed by the proposed Swanston TVSP project.

No comments were received during circulation of the NOP regarding hazards from geotechnical, seismic, or soils conditions in the Swanston TVSP project area.

Setting

Geology

The Swanston TVSP project area is located in the City of Sacramento, which is centrally located in the Sacramento Valley in northern California. The Sacramento Valley extends from the Stockton-Tracy area on the south to the Klamath Mountains on the north.

There are hundreds of faults throughout northern California that have been categorized by the California Geological Survey (CGS) as active, potentially active, or inactive. A fault is considered active by the state if it has caused surface displacement (movement) during the Holocene epoch (during the last 11,000 years) or if it is included in an Alquist-Priolo Earthquake Fault Zone (as established by the CGS). If a fault has experienced displacement activity during the Quaternary period (the last 1.6 million years), it is considered potentially active by the CGS. Faults that have not moved in the last 1.6 million years are considered inactive by the CGS and are not considered sources for future earthquakes.

In 1972 the State of California began delineating special studies zones (called Earthquake Fault Zones since January 1994) around active and potentially active faults in the state. No structures for human occupancy may be built across an identified active fault trace. An area of 50 feet on either side of an active fault trace is assumed to be underlain by the fault, unless proven otherwise. No known active faults occur in or adjacent to the City of Sacramento. During the past 150 years, there has been no documented movement on faults mapped in Sacramento County. Nonetheless, the region has

experienced numerous instances of groundshaking originating from faults in the San Andreas Fault Zone, west of the County, and the Foothills Fault System, east of the County.[1]

Seismicity relates to the earthquake activity within a particular area. Compared with other portions of California, the southern Sacramento Valley region has had moderately low seismic activity, based on historical records spanning almost 200 years. In 2001, an earthquake search was performed by España Geotechnical Consulting to identify previous earthquakes with a Moment Magnitude between 4.0 and 9.0, and lying within a radius of approximately 62 miles from the Swanston TVSP project area.[2]

The search produced a record of 75 earthquakes within 62 miles of the center of the Swanston TVSP project area. The maximum magnitude earthquake was the Vacaville-Winters earthquake of 1892, with an approximate Richter magnitude of 6.4 and an epicenter located approximately 26 miles west of central Sacramento. The closest recorded earthquake (estimated Richter magnitude 4.3) occurred in 1850, approximately 24 miles south of Sacramento.

Soils

General Soil Characteristics. The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) mapped Sacramento County's soils in 1993.[3] With the exception of urbanized areas where soils typically consist of engineered fill, the NRCS soil characteristics describe native, undisturbed soils. The soil behavior characteristics identified by the NRCS that have the potential to affect development that could occur in the Swanston TVSP project area are as follows:

- Permeability – the ability of a soil to transmit water or air. Permeability is considered in the design and construction of soil drainage systems, where the rate of water movement under saturated conditions affects behavior.
- Available water capacity – the quantity of water that the soil is capable of storing for use by plants.
- Runoff – the amount of water that runs off the surface of the land.
- Erosion –the susceptibility of a soil to water and/or wind erosion.
- Shrink-swell potential – the potential for volume change in a soil with a loss or gain in moisture. If the shrink-swell potential is rated moderate to high, damage to buildings, roads, and other structures can occur.

---

1 City of Sacramento, 2005, General Plan Update Technical Background Report Chapter 7, Public Health and Safety, pp. 7.1-1 through 7.1-6.

2 Sacramento Regional Transit District Northeast Corridor Service and Facilities Enhancement Project IS/EA, January 2002, pp. 3.7-8 – 3.7-10.

3 US Department of Agriculture, Soil Conservation Service, in cooperation with Regents of the University of California (Agricultural Experiment Station), *Soil Survey of Sacramento County California*, April 1993.

Soil characteristics can affect the suitability for accommodating uses such as those with shallow excavations or basements, for roads and streets, and for lawns and landscaping. Soil limitations to development are classified as slight, moderate, or severe.

- Slight if soil properties and site features generally are favorable for the indicated use and limitations are minor and easily overcome.
- Moderate if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or reduce the limitations.
- Severe if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are necessary.

Soils in the Project Area. The NRCS mapped three soil units within the Swanston TVSP project area: San Joaquin-Urban land complex, 0 to 3 percent slopes; Xerarents-Urban land-San Joaquin complex, 0 to 5 percent slopes; and Urban Land.

- **San Joaquin-Urban land complex, 0 to 3 percent slopes**. This unit is made up of about 65 percent San Joaquin soil, which is moderately deep and moderately well-drained, and about 25 percent Urban Land, with small amounts of other soils making up the remaining 10 percent. Permeability is very slow in the San Joaquin soil, with water remaining above the clay pan for short periods after heavy rainfall or irrigation. Also, the shrink-swell potential for San Joaquin soil is high and runoff is slow to very slow. The hazard of water erosion is slight. This soil unit is found in the northern portion of the Swanston TVSP project area, specifically in the area where El Camino Avenue crosses the railroad tracks.
- **Xerarents-Urban land-San Joaquin complex, 0 to 5 percent slopes**. This unit is made up of about 45 percent Xerarents, which are moderately deep to very deep and well-drained, 25 percent Urban Land, and 15 percent San Joaquin soil (with other soils making up the remaining 15 percent). It makes up the majority of the Swanston TVSP project area. The unit consists of about 60 percent Columbia soil and 30 percent Urban Land. Xerarents are formed in fill material (derived from nearby soils of dominantly granite origin) mixed during grading and excavation activities. The permeability of Xerarents ranges from moderate to very slow, and the available water capacity is moderate or high. Furthermore, shrink-swell potential ranges from low to high and runoff is very slow or slow. Like San Joaquin soil, Xerarents have a slight hazard of water erosion. This soil unit is in the central portion of the Swanston TVSP project area, primarily east of the railroad tracks.
- **Urban Land.** This unit consists of areas covered up to 90 percent by impervious surfaces. The soil material under these impervious surfaces may have been altered during construction, and generally are similar to nearby soil units. The majority of the Swanston TVSP project area is Urban Land.

Soil Hazards in the Project Area. The soils in the Swanston TVSP project area do not present severe limitations for future development; however, there is a possibility for two concerns noted below.

- **Compressible Soils.** Although not expected within the Swanston TVSP project area, it is possible that localized areas of soft/loose soils may be encountered which may be susceptible to settlement caused by compression from loading due to structures and/or embankments.

- **Corrosive Soils.** Most of the near surface soils throughout the Swanston TVSP project area consist of differing thicknesses of silt with varying amounts of clay. Fine-grained soil (silt and clay) is often corrosive to buried metal and deleterious to concrete, particularly when saturated. The potential for corrosive, near-surface soil is considered to be moderate to high within the Swanston TVSP project area.[4]

Groundwater

Groundwater conditions can vary considerably within the Swanston TVSP project area due to the season, amount of precipitation, well extraction, etc. Shallow groundwater can be cause for concern because foundations that include below-ground elements (basements, parking structures, etc.) can be damaged. Furthermore, shallow groundwater can lead to liquefaction (which could destabilize the soils, which in turn could compromise foundation stability) in certain conditions. Conversely, the lack of water pressure caused by withdrawal of water during dryer periods can cause the soil to collapse.

Based on a review of historical groundwater data from 1965 to 2000,[5] groundwater levels in the project vicinity ranged between approximately 36 to 55 feet below the existing ground surface. Based on well records, the level of groundwater in the City of Sacramento declined for many years until readings between 1997 and 2004 showed a rebound of approximately 5 feet. Recent groundwater measurements show a cone of depression of approximately 30 feet below mean sea level that includes the Swanston TVSP project area.[6]

Mineral Resources

The California Department of Conservation classifies land based on its potential to yield significant mineral resource. These "Mineral Resource Zones" (MRZ) are typically delineated in a community's general plan. The Swanston TVSP project area is designated as MRZ-1,[7] meaning that there are little significant deposits of commercial-grade aggregate. A small area to the north of the Swanston TVSP project area (north of El Camino Avenue) is classified as MRZ-3. Areas classified as MRZ-3 are those containing aggregate deposits, the significance of which has not been determined based on the available data. Because the entire Swanston TVSP project area is covered by these two classifications, the potential for significant mineral deposits, other than minor amounts of sand and gravel, within the Swanston TVSP project area is considered to be low.

---

4 USDA, *Soil Survey of Sacramento County, California,* United States Department of Agriculture, April 1993.

5 California Department of Water Resources, 2001, Sacramento County, California, Historical Groundwater Elevations, 1965 to 2000.

6 Sacramento Groundwater Authority, *Basin Management Report 2004-2005*, May 2006.

7 California Department of Conservation, Division of Mines and Geology, Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Sacramento-Fairfield Production-Consumption Region, 1985.

Applicable Plans and Policies

Regulations and standards related to geology, soils, and seismicity, as well as mineral resources, in the City of Sacramento are included in state regulations, county ordinances, and plans adopted to protect public safety and to conserve open space. Because of the minimal risk to life and property from geoseismic hazards in the Swanston TVSP project area, there are no standards or policies in the Swanston TVSP project regarding these hazards. Instead, future development would comply with relevant policies and implementation actions contained in the City's General Plan, as well at the following regulatory context under which geology and soils and hazards are managed. Agencies with responsibility for protecting people and property in the Swanston TVSP project area from damage associated with soil conditions and geologic hazards are described below.

State

Structural Design. The State of California provides minimum standards for structural design and site development through the California Building Standards Code (California Code of Regulations (CCR), Title 24). The California Building Code (CBC) is based on the Uniform Building Code, which is used widely throughout United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for California conditions with numerous more detailed and/or more stringent regulations. The CBC regulations are further modified by regulations set by the Sacramento General Plan. These regulations regarding site-specific investigations are identified in "Local Regulations" below.

Underground Utilities. Installation of underground utility lines must comply with industry standards specific to the type of utility (e.g., National Clay Pipe Institute for sewers and American Water Works Association for water lines). These standards contain specifications for installation and design to reflect site-specific geologic and soils conditions.

Erosion/Sedimentation During Construction. State regulations pertaining to the management of erosion/sedimentation and protection of water quality are described in Section 6.7, Hydrology and Water Quality, of this EIR. Such regulations include, but are not limited to, the National Pollutant Discharge Elimination System (NPDES) program for management of construction and municipal stormwater runoff, which is part of the federal Clean Water Act and is implemented at the State and local level through issuance of permits and preparation of site-specific pollution protection plans. The primary purpose of these regulations and standards is the protection of surface water resources from the effects of land development. Among other measures included in such regulations and standards are the requirements to reduce the potential for sedimentation caused by erosion.

Local

City of Sacramento General Plan. The following goal and policy from the Health and Safety Element are applicable to the proposed Swanston TVSP project:

Goal A: Protect lives and property from unacceptable risk of hazards due to seismic and geologic activity to the maximum extent feasible.

Policy 2: Continue to require soils reports and geological investigations for determining liquefaction, expansive soils and subsidence problems on sites for new subdivision and/or multiple-story buildings in the City of Sacramento.

Site-Specific Geotechnical/Soils Investigation. In accordance with City Code 16.24.020, prior to approval for a tentative map for a subdivision of five or more parcels within the City, including the Swanston TVSP project area, the applicant must present a preliminary soil investigation and geological reconnaissance report by a registered civil engineer specializing and recognized in soil mechanics and foundation engineering for every subdivision for which a final map is required. Submission of this preliminary report may be waived by the city manager's designee if soil conditions in the proposed subdivision are known to him or her. The investigation must include soil borings to collect samples and laboratory testing to determine the appropriate design parameters for use for structural fill, roadbed fill, and landscaping fill, along with the fill placement requirements. The various soils may be tested for corrosivity to allow for proper infrastructure and foundation design.

The evaluation must provide grading and design recommendations to address slope, channel-wall, and foundation instability; groundwater level and need for dewatering; erosion control; expansive soils; and differential settlement. The investigation must evaluate the soil types, test for shrink-swell potential, and determine preliminary load-bearing and strength characteristics. The geotechnical evaluation must be provided to the City as part of the City's building permit process. The City must review the geotechnical report along with project design to confirm that the recommendations in the geotechnical report are reflected in project design.

The City requires design of engineered fills to be addressed in the geotechnical investigation by assessing the structural properties of any soils in the project site proposed for use as backfill. Such investigations would address specific portions of the project site to be developed. The designs would be required to account for various structures and roadway proposals. In addition to evaluation for engineered fills, specific geotechnical evaluation of engineered slopes (for foundation drainage, landscaping, channel walls, etc.) must be included in the geotechnical evaluation. All proposed cut and/or fill slopes, including temporary slopes and excavations, must be evaluated for proper design to reduce the hazard of over-steeping and/or removal of lateral support, both of which could lead to slope instability, soil creep, and/or structural failure. If necessary, slopes must be designed with additional lateral support, such as buttressing or shoring, and fill slopes must be keyed properly into competent formation-support materials. Slopes along the proposed channel must be designed with proper protection to prevent soil erosion and channel-bank undercutting. Excavation, grading, and fill placement must be monitored and compaction testing performed to ensure proper placement of all fill types (structural, non-structural, and roadbed). Soils with low strength and/or high shrink-swell potential must be controlled using such techniques as over-excavation and replacement, wet compaction, or by covering with a sufficient amount of granular soils (as determined by the geotechnical investigation). Untreated expansive soils must not be used for structural fill.

In addition to the geotechnical study, a grading permit must be prepared prior to grading activities. The applicant must submit, for review and approval, Improvement and/or Grading Plans along with a site-specific erosion and sedimentation control plan.

Site Development and Construction. The City's Building Division of the Development Services Department (Public Works) regulates construction at the local level. Specifically, Public Works issues permits for, regulates, and inspects grading, erosion control, stormwater drainage. The reader is also directed to Section 6.6, Hydrology and Water Quality for regulations and impacts regarding water quality protection. The Department of Public Works issues or has major responsibility for the following types of permits:

- Grading permits,
- Construction permits, and
- California State Water Resources Control Board General Permit for Discharges of Storm Water Runoff associated with Construction Activity (General Construction Permit).

Impact Assessment and Mitigation Measures

Methods of Analysis

The geotechnical characteristics of a Swanston TVSP project area determine its potential for structural and safety hazards that could occur during construction and/or operation of a proposed project. An Initial Study was prepared in January 2002 for the enhancement of the Sacramento Regional Transit District's Northeast Corridor Facilities; the study also included a geotechnical investigation prepared by España Geotechnical Consulting.[8] The study area for that environmental document and supporting technical report included the proposed Swanston TVSP project area and, thus, many of the conclusions regarding geology, soils, and seismicity that were reported in that earlier document are applicable for land development that could occur in accordance with the proposed Swanston TVSP project.

The analysis that follows assumes the design-controllable aspects of building foundation support, protection from seismic ground motion, and soil or slope instability are governed by existing regulations of the State of California and/or the City of Sacramento. While these regulations do not eliminate potential risk from geoseismic hazards, they reduce them to a level that is considered acceptable given application of best available engineering practices and design standards. These regulations therefore reduce potential adverse geology, seismicity, and soils effects to less-than-significant levels. Compliance with these regulations by individual property owners and developers is required, not optional. Compliance must be demonstrated by the project applicant before permits for project construction would be issued. As a result, future land development that could occur in both the Strategic Plan and Long-Term Plan areas would not be expected to result in significant geotechnical, seismic, or soil impacts.

[8] Sacramento Regional Transit District Northeast Corridor Service and Facilities Enhancement Project IS/EA, January 2002, Section 3.7.

Standards of Significance

A significant impact would occur if the proposed Swanston TVSP project would:

- Introduce either geologic or seismic hazards by allowing the construction of the project on a site without protection against those hazards.

Adverse impacts would be considered unavoidable significant effects of the project, if they could not be (a) reduced to an acceptable level of risk, (b) eliminated, or (c) avoided through compliance with adopted regulations and implementation of design and construction methods generally recognized by geotechnical consultants in California to be applicable and feasible for geologic conditions in the region.

Environmental Analysis

The geologic and soil conditions throughout the Swanston TVSP project area are similar, except where there are distinct soil types. As a result, the potential hazards from development that could occur within the Strategic Plan area would be essentially the same as in the Long-Term Plan area. Consequently, the following impact analyses and recommendations for mitigation measures apply to construction and development activities in both the Strategic Plan and the Long-Term Plan areas.

In order to determine impacts for each resource, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant impact to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section, GE refers to Geology, Soils, and Seismicity.

GE-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not expose people or structures to fault rupture hazards. (NI)

No known or mapped Holocene (active) faults project toward or directly through the Swanston TVSP project area. The Swanston TVSP project area is not located near an Alquist-Priolo Earthquake Fault Zone. No known Holocene/Late Quaternary faults pass near or cross the Swanston TVSP project area.[9] Therefore, development that could occur under the proposed Swanston TVSP project within either the Strategic Plan or Long-Term Plan areas would not expose people or structures to fault rupture hazards.

GE-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would expose people and structures to moderate or strong seismic groundshaking. This effect would be less than significant, because seismic-resistant design is

[9] Sacramento Regional Transit District, Northeast Corridor Service and Facilities Enhancement Project IS/EA, January 2002, p. 3.7-8.

required by the City of Sacramento and would reduce risks to life and property to a level that is considered acceptable given site condition, building standards, and costs. (LTS)

From a review of regional and local geoseismic conditions, the City of Sacramento would be subjected to at least one major earthquake during the life of the proposed project.[10] The highest intensity of groundshaking predicted for the Swanston TVSP project area would be caused by a M_w 6.75 earthquake on the Healdsburg-Rogers Creek fault or a M_w 6.25 earthquake on the Coast Range – Sierran Block Boundary Zone fault, which is the closest fault to the Swanston TVSP project area. The projected groundshaking would be equal to VI or VII on the modified Mercalli Intensity (MMI) scale. Potential damage in both the Strategic Plan and the Long-Term Plan areas associated with MMI VI include windows and glass breaking, cracks appearing in plaster walls, and items falling off shelves and walls. MMI VII groundshaking makes it difficult to stand or drive a vehicle, causes damage to masonry and furniture, and results in weak chimneys and loose bricks fall. These effects could be expected to cause damage to buildings, roads, and infrastructure, and could cause ground failures such as liquefaction or settlement in loose alluvium and/or poorly compacted fill throughout the Swanston TVSP project area.

The Swanston TVSP project area is underlain by artificial fill and alluvial deposits that, in their present state, could respond poorly during seismic ground motion. The risks to foundations and structures from seismically induced groundshaking depend on the location and type of subsurface materials. In Sacramento, commercial, institutional, and large residential buildings and all associated infrastructure are required to reduce the exposure to potentially damaging seismic vibrations through seismic resistant design, in conformance with Chapter 16, Structural Design Requirements, Division IV, Earthquake Design, of the California Building Code.

Adherence to the Building Code, as required by state and City law, would ensure maximum practicable protection available for buildings and associated infrastructure. Adherence would include:

- the use of CBC Seismic Zone 3 Standards as the minimum seismic-resistant design for all proposed facilities (Ch. 16 Div. IV Section 1630);
- seismic-resistant earthwork and construction design criteria, based on the site-specific recommendations of California Certified Engineering Geologist and California-registered geotechnical and structural engineers (Ch. 16 Div. I Section 1610);
- an engineering analyses that demonstrates satisfactory performance of alluvium or fill where either forms part or all of the support, especially where the possible occurrence of liquefiable soils exists (Ch. 18 Section 1809);

[10] Working Group on California Earthquake Probabilities, 2003. The United States Geological Survey projected a 27 percent chance of at least one earthquake equal to or greater than MW 6.7 on the Hayward fault and a 21 percent chance on the San Andreas fault between 2003 and 2032.

- an analysis of soil expansion potential and appropriate remediation (compaction, removal/replacement, etc.) prior to using any expansive soils for foundation support (Ch. 18 Section 1803), and

Compliance with these design standards would not eliminate risks from groundshaking, but would reduce them to a level considered acceptable, given application of best available engineering practices and design standards. As a result, potential groundshaking effects to new development under the proposed Swanston TVSP project under both the Strategic Plan and Long-Term Plan areas are considered less than significant.

GE-3. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not expose people or structures to landslide or other slope failure hazards, because there are no landslides or steep slopes in the Swanston TVSP project area. (NI)

The Swanston TVSP project area is nearly flat; therefore, the potential for hazardous landslides due to inherent slope instability, intense rainfall, or seismic events would be negligible. Accordingly, development that could occur under the proposed Swanston TVSP project in both the Strategic Plan and Long-Term Plan areas would have no impact associated with exposing people or structures to hazardous landslide or slope conditions.

GE-4. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) could expose people and structures to seismic-related ground failure, including liquefaction. This impact would be less than significant because seismic-resistant design is required by the City of Sacramento. (LTS)

Secondary groundshaking hazards such as liquefaction are associated with unstable soil conditions. Liquefaction results when cohesionless granular materials, such as fine-grained sands, are changed into a fluid-like state as a result of increased pore-water pressure usually associated with seismic groundshaking events. The Swanston TVSP project area is underlain predominantly by relatively older alluvial deposits. These alluvial deposits have been generally described as silty sand and gravelly sand with silt, and are underlain by compact silt, fine sand, and gravelly to cobbly sand. These soils are typically not susceptible to liquefaction. Groundwater can be encountered at depths as shallow as 30 feet below mean sea level in the Swanston TVSP project area.[11] Based on the anticipated geologic and groundwater conditions, the general potential for liquefaction in the Swanston TVSP project area is estimated to be moderate to low. As noted above, adherence to the State Building Code would require an engineering analysis that demonstrates satisfactory performance of alluvium or fill where either forms part or all of the support, especially where the possible occurrence of liquefiable soils exists (Ch. 18 Section 1809). Compliance with these code requirements would reduce potential

[11] Sacramento Regional Transit District, Northeast Corridor Service and Facilities Enhancement Project IS/EA, January 2002, p. 3.10-11.

liquefaction impacts that development could experience in both the Strategic Plan and Long-Term Plan areas of the proposed Swanston TVSP project to less than significant.

GE-5. Construction of future development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) on expansive, compressive or corrosive soils could result in damage to foundations, structures, roadways, and other near surface improvements. However, this impact would be less than significant because of development regulations of the City of Sacramento. (LTS)

Portions of the Swanston TVSP project area are underlain by clay, clay loam, and silty clay loam, which have been described by the US Department of Agriculture,[12] as having a moderate to high shrink/swell potential. These expansive soils tend to shrink and swell due to changes in moisture content. Repeated shrinking and swelling can cause damage to pavement and structures resulting in a potentially significant impact. Also, compression of soft soil may result from loading from permanent structures. Although it is not expected within the Swanston TVSP project area, younger alluvial materials within the soils have a moderate potential for compressibility. This susceptibility to compression and subsequent settlement may cause structural damage to permanent structures. In addition, fine-grained, potentially corrosive soil conditions can be encountered throughout the Swanston TVSP project area, particularly in installing the new neighborhood and pocket parks, improving curbs and gutters on local streets, and placing upgraded utilities within many of the Swanston TVSP project area streets. The design of foundation and excavation-wall support must conform to the analysis and implementation criteria described in the City's Building Code, Chapters 16, 18, 33, and the appendix to Chapter 33. Adherence to the City's codes and policies would ensure the maximum practicable protection available for users of buildings and infrastructure and their associated trenches, slopes, and foundations. Thus, future development that could occur within both the Strategic Plan and Long-Term Plan areas of the proposed Swanston TVSP project would have a less-than-significant impact due to exposing people or property to soil hazards.

Cumulative Analysis

The geographic context for the analysis of impacts resulting from geologic hazards generally is site-specific, rather than areawide or regional in nature, because each development site has unique geologic and soils characteristics that would be subject to uniform site development and construction standards imposed by the City of Sacramento. Restrictions on development would be applied in the event that geologic or soil conditions posed a risk to safety exceeding the standards required by the Building Code or similarly applicable guidelines.

GE-6 The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development in the area, could expose an increased number of people and structures to geoseismic and soil hazards. However, this risk would be a less-than-

[12] USDA, *Soil Survey of Sacramento County, California,* United States Department of Agriculture, April, 1993.

significant cumulative impact because existing state and local regulations would reduce the potential hazards to an acceptable level. (LTS)

The proposed Swanston TVSP project along with other foreseeable development would increase the number of people and structures that could be exposed to potential effects related to unstable soil conditions, such as changes in topography, variable soil densities, settlement and subsidence caused by dewatering activities, or other soil constraints that could affect structural integrity. Potentially adverse environmental effects associated with these effects are usually site-specific and generally would not combine with similar effects that could occur with other projects in the City.

In addition, future development projects within the City would be subject to applicable state and local laws and regulations to ensure an acceptable level of risk, based on sound engineering practices and standards, from unstable soil conditions at each site. These laws and regulations require that site-specific soil evaluations and geological investigations be performed. These evaluations would recommend measures to reduce potential risks from geologic seismic, and/or soil hazards to acceptable levels consistency with best engineering practices and design standards. Because each development project would comply with these laws and regulations and with the recommendations from its site-specific geotechnical investigation, the cumulative impact resulting from poor geologic or soil conditions in the City would be less than significant.

6.6 HAZARDOUS MATERIALS

Introduction

This section describes the types of environmental hazards that would be associated with the adoption and implementation of the proposed Swanston TVSP project. Hazards evaluated are those associated with existing identified or suspected contaminated sites; potential exposure to hazardous materials used, generated, stored, or transported during project construction and operation; and effects on emergency response or evacuation routes due to roadway modifications. Included in this section is a summary of applicable hazardous materials and public safety laws and regulations and agencies responsible for implementation.

Information used to prepare this section includes the Phase 1 Environmental Site Assessment (ESA) for the Northeast Corridor Facility Enhancement Project prepared by España Geotechnical Consulting in August 2001 for the Swanston TVSP project area, and published technical information available through various websites and documents, which are referenced within this section. The Phase 1 ESA was prepared to document past land uses and identify recognized environmental conditions that could have resulted in release of hazardous materials to soil or groundwater.

The term "hazardous materials" is defined in different ways for different regulatory programs. For purposes of this EIR, the definition of "hazardous materials" is that from the California Health and Safety Code, Section 25501, where "…because of their quantity, concentration, or physical or chemical characteristics, (they) pose a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment."

"Hazardous waste" is a subset of hazardous materials. For the purposes of this EIR, the definition of "hazardous waste" is that from the California Health and Safety Code, Section 25517, and the California Code of Regulations (CCR), Title 22, Section 66261.2, where "…because of their quantity, concentration, or physical, chemical, or infectious characteristics, (they) may either cause, or significantly contribute to, an increase in mortality or serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed."

Setting

Historic Uses

In the España Phase 1 ESA, historic photographs and maps of the Swanston TVSP project area dating as far back as 1961, and federal, state and local databases were reviewed in order to determine potential sources of hazardous materials. Based on this review, potential sources of environmental contamination in or near the Swanston TVSP project area include past and present railroad operations,

and hazardous material storage and use within the industrial facilities within, and adjacent to, the Swanston TVSP project area.[1]

In addition, a previous environmental assessment conducted by España Geotechnical Consulting in preparation for the Northeast Corridor Enhancement Project listed the underground storage tanks (included below) at the Automatic Merchandising Company and the Lumberjack store (now closed), both in the 900 block of Arden Way, as potential sources of volatile organic compounds (VOCs) and petroleum hydrocarbons (gas or diesel).[2] The España assessment includes mitigation measures requiring a remediation plan to remove contaminated soil due to these sources to reduce their impact to less than significant.

Existing Hazards

Environmental Contamination from Current or Past Land Uses. Hazardous materials/wastes conditions that may affect future development that could occur within the Swanston TVSP project area include:

- Leaking Underground Storage Tank (LUST) Sites;
- Petroleum hydrocarbons, lubricants, etc., associated with railroad operations along existing Union Pacific Railroad (UP) (formerly the Southern Pacific Railroad) rights-of-way;
- Soil stockpiles near the northeast side of the Arden Way Overcrossing along the UP alignment;
- Sanitary sewer pipelines or other unknown or abandoned pipelines that may exist within or cross beneath the Swanston TVSP project area; and
- Overhead electrical transformers within and adjacent to the Lumberjack Curve segment.

Along with the España report, the following databases were reviewed for potential sources of hazardous materials in the Swanston TVSP project area: the leaking underground storage tanks quarterly report by the Central Valley Regional Water Quality Control Board (CVRWQCB) and the Envirostor Database of the California Department of Toxic Substances Control (DTSC). Sites that are being evaluated for remediation, sites whose hazardous materials status is unknown, sites in remediation or whose remediation status has not been finalized, and others that have the potential to affect the Swanston TVSP project area are shown in Table 6.6-1. These sites are within ¼ mile of the Swanston TVSP project area.

Hazards in Building Materials. Asbestos, lead, mercury and PCBs may also present health hazards in the Swanston TVSP project area. Asbestos is a naturally occurring fibrous material which was used as a fireproofing and insulating agent in building construction before such uses were banned by the EPA in the 1970s. Because it was widely used prior to the discovery of its health effects, asbestos may be found in a variety of building materials and components including sprayed-on acoustic ceiling

[1] Sacramento Regional Transit District, Northeast Corridor Service and Facilities Enhancement Project, IS/EA, January 2002, pp. 3.7-8 – 3.7-10.

[2] Sacramento Regional Transit District, Northeast Corridor Service and Facilities Enhancement Project, IS/EA, January 2002, p. 3.12-10.

Table 6.6-1
Hazardous Materials/Waste Sites Potentially Affecting the Swanston Station Transit Village Specific Plan Area

Site	Reference/ Agency Listing	Potential Contaminant(s)
Automatic Merchandising Company - 935 Arden Way	LUFT	Gasoline
Fred Cullincini Trust - 973 Arden Way	LUFT	Hydrocarbons
Knudsen Corporation - 975 Calvados Avenue	LUFT	Diesel, Gasoline
Orowheat Inc. - 1251 El Camino	LUFT	Gasoline
Overhead Electrical Transformers	Visual	PCBs
Shell – 2400 Del Paso Blvd	LUFT	Gasoline
Auto Wrecking Yard – 1417, 1435 Auburn Boulevard	SLIC	Chromium, Perchloroethylene
Soil Stockpiles - NW Side of Arden Way Overcrossing over UP tracks	Visual	Unknown
Union Pacific Railroad (UP, formerly SPRR) Right-of-Way	Visual	Petroleum Hydrocarbons, Lubricants

Source: España Geotechnical Consulting, 2001; SWRCB quarterly report, July 2007; Envirostor Database accessed November 2007 and November 2008.

Notes:

Data Source Abbreviations:

LUFT - Leaking Underground Fuel Tank database

SLIC - Spills, Leaks, Investigation, and Cleanups database

Visual - Noted during site reconnaissance

materials, thermal insulation, walls and ceiling texture, floor tiles and pipe insulation. Friable (easily crumbled) materials are particularly hazardous because inhalation of airborne fibers is the primary mode of asbestos entry into the body. Asbestos-related health problems include lung cancer and asbestosis. Non-friable asbestos does not pose substantial health risks.

Lead can be found in paint, water pipes, solder in plumbing systems, and soils around buildings painted with lead paint. Excessive exposure to lead (even low levels) can result in its accumulation in blood, soft tissues and bones. Children are particularly susceptible to potential lead-related health problems because it is easily absorbed into developing systems and organs.

Spent fluorescent light tubes, thermostats and other electrical equipment contain heavy metals such as mercury. Elemental mercury can also be found in many electrical switches. Due to accidental spills and disposal practices before the adoption of more stringent disposal regulations, it is possible that elemental mercury may be present in hospital, medical office, or laboratory sink traps and plumbing. Mercury liquid evaporates slowly in air, and at certain levels of exposure mercury vapors are toxic and can cause kidney and liver damage.

Polychlorinated biphenyls (PCB) are organic chemicals, usually in the form of oil, that were used historically in electrical equipment. PCBs are most commonly associated with pole-mounted electrical transformers, but they were also used in insulators and capacitors in building electrical equipment. PCBs are deemed to be hazardous waste when concentrations exceed 5 parts per million (ppm) in liquids or 50 ppm in non-liquids. Fluorescent light ballasts may contain PCBs and, if so, are regulated as hazardous waste and must be transported and disposed of as hazardous waste. Ballasts manufactured after January 1, 1978 should not contain PCBs and are required to have a label clearly stating that PCBs are not present. PCBs are highly persistent in the environment, and exposure can cause serious liver, dermal, and reproductive system damage. PCBs are also a suspected carcinogen.

Because many of the buildings and developed land in the Swanston TVSP project area were constructed prior to the 1970s, they could contain these hazardous building materials. Although demolition is not a part of the proposed Swanston TVSP project, possible future demolition of buildings associated with development projects within the Swanston TVSP project area could expose people to asbestos, lead, mercury, and PCBs.

Dry cleaning operations, service stations, automotive and equipment repair shops, maintenance yards, light and heavy industrial facilities, construction companies and metal fabrication shops, etc. which only store or use hazardous material, or which had reported spills but were noted as no further action required or were limited to soil-only contamination, were not included in Table 6.6-1 because they are no longer considered potential sources of hazardous materials.

Applicable Plans and Policies

A number of federal, state and local laws serve to regulate the management of hazardous materials and wastes. Implementation of these laws and the management of hazardous materials are regulated independently of the CEQA process through programs administered by various agencies at the federal, state, and local levels. Investigation and remediation activities that would involve potential disturbance or release of hazardous materials must comply with applicable federal, state, and local hazardous materials laws and regulations. At any time during construction or occupancy, the project applicant and contractors are responsible for knowledge of and complying with applicable hazardous materials management regulations.

Federal

Federal agencies with responsibility for regulating hazardous materials include the US Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the Department of Transportation (DOT). Applicable federal regulations and guidelines are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR); lead exposure guidelines are available from the U.S. Department of Housing and Urban Development (HUD).

The primary regulatory framework for governing the use, storage, and disposal of hazardous materials include:

- Resources Conservation and Recovery Act (RCRA) - hazardous waste management;
- Hazardous and Solid Waste Amendments Act (HSWA) - hazardous waste management;
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - cleanup of contamination;
- Emergency Planning and Community Right-to-Know (SARA Title III) – business inventories and emergency response planning;
- Toxic Substances Control Act (TSCA) – tracks and screens industrial chemicals; and
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) – controls pesticide distribution, sale, and use.

The US EPA has authorized the California DTSC to enforce hazardous waste laws and regulations in California. Requirements place "cradle-to-grave" responsibility for hazardous waste disposal on the shoulders of hazardous waste generators. Generators must ensure that their wastes are disposed of properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills).

Title 29, Part 1910 of the CFR describes the Hazard Communication Standard, which requires that workers, including construction workers, be informed of the hazards associated with the materials they handle. Training in chemical work practices must include methods in the safe handling of hazardous materials, use of emergency response equipment, and an explanation of the building emergency response plan and procedures. Material Safety Data Sheets (MSDS) must be available in the workplace, and containers must be appropriately labeled.

Several federal laws and regulations have been created to control the use, removal, and disposal of asbestos-containing materials. Such laws and regulations include the Toxic Substance Control Act (15 USC Section 2601 et seq.), Clean Air Act (42 USC Section 7401 et seq.), and CFR Title 40, Part 763 and 61.

State

The California Environmental Protection Agency (Cal EPA) has overall authority governing the use of hazardous materials in the State. Within Cal EPA, the DTSC has primary regulatory responsibility for hazardous waste management and cleanup. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Law.

State regulations applicable to hazardous materials are contained in the CCR. Title 22 and 26 of the CCR pertain to hazardous materials and the management of hazardous materials. Title 8 contains Construction Safety Orders pertaining to asbestos and lead.

In January 1996, Cal EPA adopted regulations implementing a "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program). The six program elements of the Unified Program are hazardous waste generators and hazardous waste on-site treatment, underground storage tanks, above-ground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency – the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction. The Sacramento County Environmental Management Department (SCEMD) is the CUPA for Sacramento County.

Asbestos-Containing Materials and Lead-Based Paint. Asbestos is regulated as a hazardous air pollutant under the Clean Air Act and is also regulated as a potential worker safety hazard under the authority of OSHA. Several regulations and guidelines pertain to abatement of and protection from exposure to asbestos-containing materials (ACM) and lead-based paint. These include Construction Safety Orders 1529 (pertaining to ACM) and 1532.1 (pertaining to lead-based paint) from Title 8 of the CCR, Part 61, Subpart M of the CFR (pertaining to ACM), and lead-based paint exposure guidelines provided by HUD. These rules and regulations prohibit emissions of asbestos from asbestos-related demolition or construction activities, require medical examinations and monitoring of employees engaged in activities that could disturb asbestos, specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers, and require notice to federal and local government agencies prior to beginning renovation or demolition that could disturb asbestos.

In California, ACM and lead-based paint abatement must be performed and monitored by contractors with appropriate certification from the California Department of Health Services.

Soil and Groundwater Contamination Investigation and Remediation. The oversight of hazardous materials release sites often involves several different agencies that may have overlapping authority and jurisdiction. The DTSC and Regional Water Quality Control Board (RWQCB) are the two primary state agencies responsible for issues pertaining to hazardous materials release sites.

In 1981, the California Legislature enacted legislation to establish a regulatory process to address the release of hazardous substances that may be harmful to public health and the environment. This process, which is consistent with federal regulations, requires responsible parties to clean up contamination. The regulatory guidelines, standards, and methods established as part of that process seek to evaluate potential risks and identify the need for remedial action at contaminated sites.

Local Regulations

City of Sacramento General Plan. The following goal and policy from the Health and Safety Element are applicable to the proposed Swanston TVSP project:

> **Goal A:** Provide for the health and safety of the citizens of Sacramento and for the protection of the environment by reducing exposure to hazardous materials and waste.

Policy 8: Ensure that areas where hazardous materials have been found are remediated, before development of new areas, to the extent necessary to protect the health and safety of all possible users and adjacent properties, consistent with applicable laws and regulations.

Sacramento City Code. The City of Sacramento has adopted the following regulation pertaining to hazards and hazardous materials within the City:

> The City has adopted a hazardous materials disclosure code requiring handlers of hazardous materials file a disclosure form within fifteen (15) days of a significant change to the handling, use, and/ or location of hazardous materials (Sacramento City Code 8.64.040).

Sacramento City Fire Department. The Sacramento City Fire Department, a first-responder to emergency calls, maintains a Hazardous Materials Response Team (HMRT). Through contractual agreement, the HRMT provides emergency response to hazardous materials incidents within the City of Sacramento. The Sacramento City Fire Department also maintains updated records of the emergency response or evacuation routes for the City.

Sacramento County Environmental Management Department (SCEMD). The SCEMD is responsible for promoting a safe and healthy environment in the County. As the local Certified Unified Program Agency responsible for coordinating permitting, inspections, and enforcement activities related to hazardous materials and emergency response, the SCEMD monitors the proper use, storage and clean up of hazardous materials, monitoring wells, removal of leaky underground storage tanks, and permits for the collection, transport, use or disposal of refuse.

Area Plan for Emergency Response to Hazardous Materials Incidents in Sacramento County. The Area Plan for Emergency Response to Hazardous Materials Incidents (Area Plan), developed by SCEMD, provides information for agencies involved in hazardous material response within Sacramento County. The local agencies that may be called upon during an emergency are SCEMD, Sacramento County Sheriff's Department, and the Sacramento City Fire Department. Other agencies, such as the State Office of Emergency Services, Sacramento County Health Department, Public Works, and the California Highway Patrol, may be called upon if additional resources are necessary to respond to a hazardous materials incident. If a hazardous materials emergency were to occur at the site or at a location off-site that could affect project occupants, the Area Plan ensures emergency response would be available.

Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD works with local, state and federal government agencies, the business community, and private citizens to achieve and maintain healthy air quality for Sacramento County. SMAQMD regulates both criteria air pollutants and toxic air contaminants under the provisions of various federal and State air laws and regulations. Volatiles and any toxic air contaminants generated by excavation or remediation of contaminated soil are subject to applicable SMAQMD rules, regulations, and permitting requirements. Particulate matter emissions from construction activities are also regulated by the SMAQMD (see Section 6.3, Air Quality).

SMAQMD has rules that pertain to the abatement of asbestos and related fees:

- Rule 902 implements the U.S. EPA's National Emission Standard for Hazardous Air Pollutants for Asbestos (40 C.F.R. § 61.140 et seq.), which is intended to limit the emission of asbestos to the atmosphere.
- Rule 304 charges a fee to emission sources to cover the estimated reasonable costs of evaluation plans required by law, rule or regulation. A fee schedule is listed within this rule specifically for asbestos renovation and demolition projects that are subject to Rule 902.

Impact Assessment and Mitigation Measures

Standards of Significance

A significant impact would occur if the proposed Swanston TVSP project would:

- Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated soil during construction activities;
- Expose people (e.g., residents, pedestrians, construction workers) to asbestos-containing materials; or
- Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated groundwater during construction or dewatering activities.

Environmental Analysis

The potential environmental contamination conditions throughout the Swanston TVSP project area are largely localized and related to leaking underground storage tanks that have been remediated or are under remediation. Older buildings that may have hazardous building components are found throughout the Swanston TVSP project area. As a result, the following impact analyses and recommendations for mitigation measures apply to construction and development activities in both the Strategic Plan and Long-Term Plan areas.

In order to describe impacts, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If mitigation measures would not diminish potentially significant or significant impacts to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section, HM refers to Hazardous Materials.

HM-1. Construction and development that could occur within the Swanston TVSP project area (Strategic Plan area and Long-Term Plan area) could expose people to previously unidentified sources of potential health hazards, such as soil or groundwater contamination, from historic on or off-site uses. (PS)

A Phase 1 ESA by España for the Sacramento RT Northeast Corridor project and a review of the DTSC's hazardous materials database identified a number of sites potentially resulting in environmental contamination within the Swanston TVSP project area. Most of the sites had leaking underground storage tanks (LUST) in various locations in and around the Swanston

TVSP project area. However, according to the quarterly report provided by the RWQCB, these sites have been remediated or are in the process of remediation. Further, information from DTSC staff confirms solvent contamination of groundwater underneath the Swanston TVSP project area, but that no studies have been done to delineate the extent and source of contamination in the area.[3] Given the uncertainty of the location and extent of this contamination, this assessment assumes that development that could occur within both the Strategic Plan and Long-Term Plan areas could equally be exposed, a potentially significant public health impact.

The Phase 1 ESA also stated that groundwater contamination may exist because of abandoned or unknown pipelines that could cross the Swanston TVSP project area. In addition, portions of the Swanston TVSP project area are occupied by heavy service commercial and industrial uses that involve use, storage, and disposal of hazardous materials. Dry cleaning operations, service stations, automotive and equipment repair shops, maintenance yards, and metal fabrication shops, for example, are all present in the Swanston TVSP project area and are typical sources for chemicals and hazardous materials that accidentally enter nearby soils and groundwater. With future development that could occur within the Swanston TVSP project area, construction workers during excavation, grading, and other ground-disturbing activities could be exposed to contaminated soil or groundwater. Potential sites for sources of contamination listed in Table 6.6-1 are currently being remediated or monitored for movement or natural attenuation of contaminated soil and/or groundwater. Due to construction activities that would disturb soils during development within the Swanston TVSP project area, there is the possibility that previously unidentified soil or groundwater contamination could be encountered. Development that could occur within the Strategic Plan area, including street and utility upgrades along Evergreen Street, Dixieanne Avenue, and Calvados Avenue, would disturb soils and involve excavation. Similarly, grading activities associated with future developments, the surface detention basins, and landscaping could likewise affect contaminated soils or groundwater if present. In the Long-Term Plan area, development and improvements would be more widespread and affect a larger geographic area. In addition, the larger-scale buildings around the light rail station would require deeper and more extensive foundations to support the greater load of these buildings. As a result, additional ground work and soil disturbance would be anticipated. Development at all of these sites in both the Strategic Plan and Long-Term Plan areas could expose workers and the public to potential hazardous wastes and result in potentially significant impacts.

MITIGATION MEASURE. Implementation of the following mitigation measures for the Swanston TVSP project would reduce impacts related to exposure to contaminated soils or groundwater to a less-than-significant level. (LTS)

HM-1.1 *Remediation Plan for Contaminated Soils or Groundwater and Site Health and Safety Plan*. In the event that previously unidentified underground storage tanks or other features or materials that could present a threat to human health or the

[3] State Department of Toxic Substances Control, Sam Martinez, personal communication, January 8, 2008.

environment are discovered during excavation and grading, construction in that immediate area shall cease immediately, a State Registered Environmental Assessor shall evaluate the type and extent of the hazardous materials contamination and make appropriate recommendations, including if necessary, the preparation of a site remediation plan.

In the event that site inspections find evidence of contamination, waste discharges, underground storage tanks, abandoned drums, or other environmental impairments, the Sacramento County Environmental Management Department (SCEMD) shall be notified. A site remediation plan shall be prepared that (1) specifies measures to be taken to protect workers and the public from exposure to potential site hazards, and (2) certifies that the proposed remediation measures would clean up the contaminants, dispose of the wastes, and protect public health in accordance with federal, state, and local requirements. In the event contaminated groundwater is identified, any discharges to the sewer shall be in accordance with the City Department of Utilities Engineering Services Policy No. 0001, adopted as Resolution No. 92-439 by the Sacramento City Council.

In addition, a site health and safety plan, which meets the intent of OSHA hazardous materials worker requirements (CCR Title 8), shall be prepared by a qualified professional and in place prior to commencement of site-disturbing activities associated with the investigation and/or remediation. The project applicant, through the project contractor, shall ensure proper implementation of the health and safety plan.

Commencement of work in the areas of potential hazards shall not proceed until all identified hazards are managed to the satisfaction of the City and SCEMD and the SCEMD allows work to commence.

HM-2. Construction and/or operation of development that could occur within the Swanston TVSP project area (Strategic Plan area and Long-Term Plan area) could expose workers, the public, and the environment to potential health hazards from lead-based paint, asbestos, and/or PCBs. (PS)

The proposed Swanston TVSP project provides a roadmap for the future revitalization and transformation of the Swanston TVSP project area. While the proposed Swanston TVSP project itself would not require removal of an existing use or building, it does suggest the appropriate use and development regulations when market conditions or the property owner decides such change is appropriate. As buildings in the Swanston TVSP project area are renovated or demolished, there is a potential to release lead-based paints, asbestos, and/or PCBs or to expose nearby populations to these health hazards. Construction workers would be most directly affected by potential exposure to these materials. For individuals not involved in demolition/construction activities, the greatest potential source of exposure to contaminants would be airborne emissions, primarily through construction-generated dust from demolition or

grading. Other potential pathways, such as direct contact with contaminated materials would not pose as great a risk to the public because such exposure scenarios would typically be confined to the demolition/construction zones. This assumption is based on implementation of site-specific risk management controls and compliance with applicable laws and regulations pertaining to site cleanup and hazardous materials management at locations in the areas surrounding the Swanston TVSP project area. Given the age of some of the buildings in the Swanston TVSP project area, lead-based paint and ACM would likely be present. If these hazardous materials are present, fugitive dust containing lead or paint fragments could be released into the environment during demolition/redevelopment activities. As a result, construction workers, the public, and the environment could be exposed to hazardous building materials during development activities within either the Strategic Plan or Long-Term Plan areas.

MITIGATION MEASURE. Implementation of the following mitigation measure during development within either the Strategic Plan or Long-Term Plan areas would reduce impacts related to exposure to hazardous materials to a less-than-significant level. (LTS)

HM-2.1 *Investigation of Buildings for Lead, ACM, or PCBs*. Prior to demolition of any structure in the Swanston TVSP project area, the project applicant shall ensure that each structure to be demolished has been investigated for the presence of lead-based paint, ACM, or PCBs. If the investigation finds lead-based paint, ACM, or PCBs at unacceptable levels as set by local and state standards, the project applicant shall ensure that all recommendations for the removal of these hazardous building materials are carried out prior to demolition in accordance with applicable regulations and standards, and by suitable contractors certified by the California Department of Health Services. Once all abatement measures have been implemented, the project applicant shall provide written documentation to the City that lead-based paint, ACM, and PCB testing, abatement, and/or removal has been completed in accordance with state and local laws and regulations.

Cumulative Analysis

The cumulative context for the analysis of potential hazardous materials impacts is generally site specific, and not cumulative in nature. This analysis addresses potential cumulative impacts resulting from construction and/or implementation of the proposed Swanston TVSP project and similar development projects within the City of Sacramento.

HM-3. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development in the region, could increase the risk of release of hazardous materials (including, but not limited to, asbestos, lead, and chemicals), resulting from demolition or site preparation activities, which could create a health hazard or potential health hazard to the public; however, site-specific safety measures required by existing hazardous materials regulations would reduce this impact to less than significant. (LTS)

For projects in the City that would develop or redevelop an existing site where hazardous building materials such as lead-based paint could be present, the potential exists for release of hazardous materials during demolition/renovation of those sites. Previously unidentified soil or groundwater contamination or buried items containing hazardous substances (e.g., USTs) could also be encountered during excavation and other site preparation activities.

As noted above in Impact HM-2, for individuals not involved in demolition/construction activities, the greatest potential source of exposure to contaminants would be airborne emissions, primarily through construction-generated dust from demolition or grading. Based on implementation of site-specific risk management controls and compliance with applicable laws and regulations pertaining to site cleanup and hazardous materials management at locations in the areas surrounding the Swanston TVSP project area, health and safety impacts would be localized. Thus, health and safety risks would generally be limited to those individuals working with the hazardous building materials or to persons in the project site. Because any contact with hazardous materials is generally site specific, it is highly unlikely that any individual could be exposed to a release of hazardous materials at more than one project site at the same time. Therefore, the likelihood for cumulative impacts resulting from multiple hazardous materials exposures within the City of Sacramento would be very unlikely, and the cumulative effect would be less than significant. As individual development projects within the Swanston TVSP project area would be required to implement site-specific safety measures, the contribution of the projects to this impact would not be cumulatively considerable and would result in a less-than-significant impact.

6.7 HYDROLOGY AND WATER QUALITY

Introduction

This section characterizes the local and regional hydrologic conditions for the proposed Swanston TVSP project. It describes existing drainage, flood hazards, water quality, and groundwater issues. Applicable plans and policies are discussed, including the objectives of the Sacramento Stormwater Management Program and the Central Valley Regional Water Quality Control Board (CVRWQCB). Construction and operation projects within the Swanston TVSP project area could potentially affect existing hydrologic conditions within the Swanston TVSP project area and in downstream receiving waters.

A comment was received from the State Department of Water Resources, Reclamation Board with regards to obtaining encroachment permits within a State Adopted Plan of Flood Control. According to the Reclamation Board's maps, the proposed Swanston TVSP project does not encroach into the State Adopted Plan of Flood Control and this issue is not discussed further in this EIR. No other comments pertaining to hydrology or water quality were received during the circulation of the NOP.

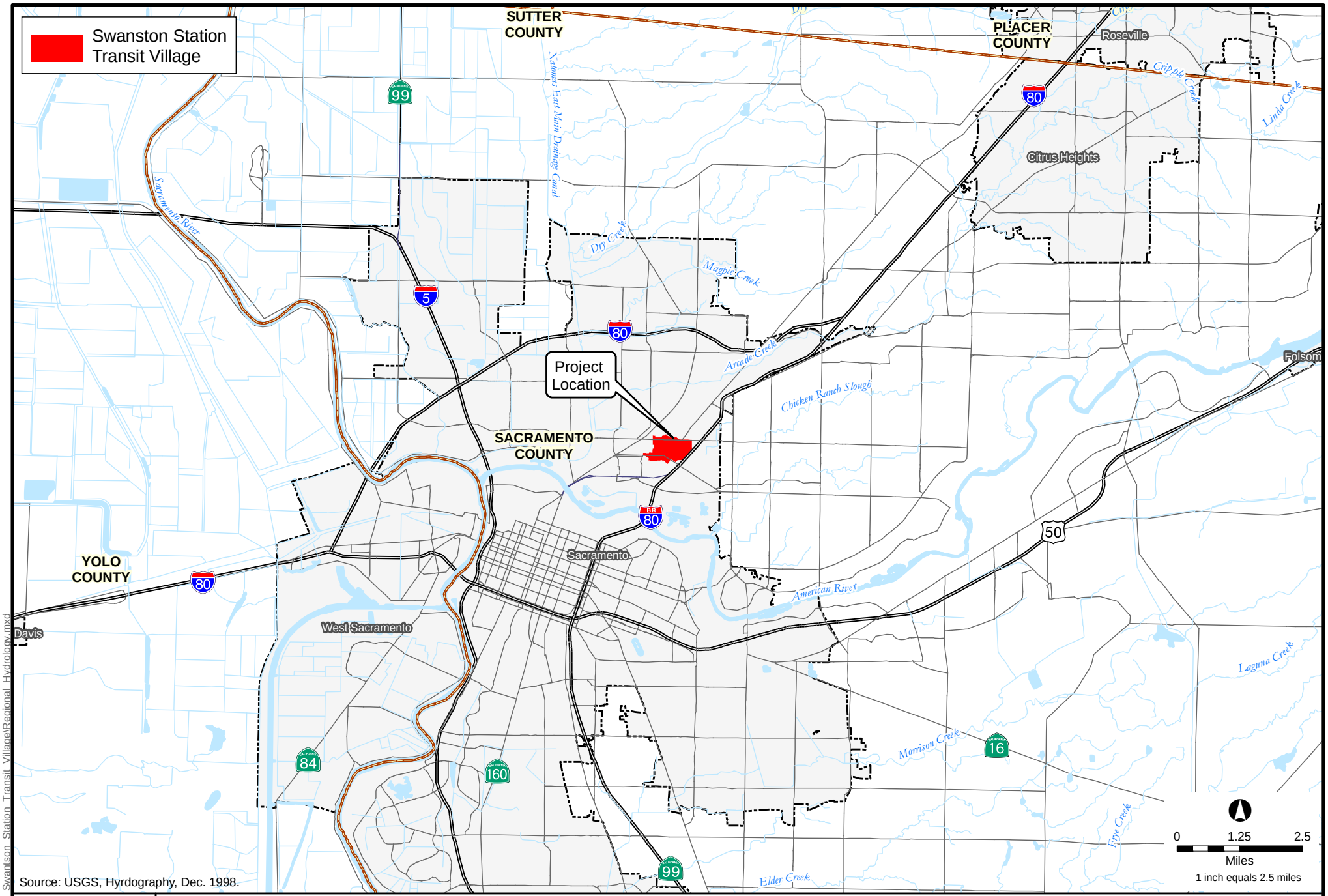
Information for this section comes from the preliminary infrastructure report prepared by Kimley-Horn and Associates, Inc, for the Swanston Station Specific Plan. Information in the Kimley-Horn and Associates report, in turn, reflects an earlier infrastructure evaluation prepared for Basin 151 by West Yost Associates (WYA) in 1996. Both reports are available for review at the City's offices.

Setting

Regional Surface Water Hydrology

The City of Sacramento is located at the confluence of two major rivers, the Sacramento River and American River. The Swanston TVSP project area is located near the confluence; the Sacramento River is located approximately ¾ mile west of the Swanston TVSP project area, while the American River is approximately one mile south of the Swanston TVSP project area boundary (see Figure 6.7-1). The total length of the Sacramento River is approximately 327 miles. Its drainage area encompasses 27,200 square miles, and is bounded by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Delta-Central Sierra area to the south. Average annual runoff from the Sacramento River drainage area is estimated to be 21.3 million acre-feet.[1] Major tributaries to the Sacramento River are the Pit, Feather, Yuba, Bear, and American rivers that drain into the Sacramento River from the east, and the Cottonwood, Stony, Cache, and Putah

[1] State Water Resources Control Board, Central Valley Regional Water Quality Control Board, *The Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region, The Sacramento River and San Joaquin River Basins (Fourth Edition)*, revised October 2007.



Source: USGS, Hyrdography, Dec. 1998.

FIGURE **6.7-1**

Regional Hydrologic Setting

D51145.00

Swanston Station Transit Village EIR

N:\GIS\Projects\D51145_Swanston_Station_Transit_Village\Regional_Hydrology.mxd

creeks which are tributaries from the west. Other numerous tributary creeks flow into the Sacramento River from the east and west. The melting snow pack in the Sierra Nevada maintains stream flow during most of the summer.

The Sacramento River, beginning at the "I" Street Bridge (located approximately one mile southwest of the Swanston TVSP project area) and including all portions downstream, is considered part of the Sacramento-San Joaquin Delta (Delta).

Prior to urban development, the Swanston TVSP project area was used for agricultural purposes. The Swanston TVSP project area is located in an urbanized zone of the Arcade Creek watershed, although lands within the Swanston TVSP project area do not currently flow into Arcade Creek.

The climate of the Sacramento Valley is characterized by warm, dry summers and mild, moderately wet winters with less precipitation than adjacent higher mountainous areas. Precipitation usually takes place from October through May and virtually no precipitation occurs from June to September. The average annual precipitation in the City of Sacramento is 18 inches. Ninety percent of the rainfall occurs in the late fall and winter months; January is usually the wettest month of the year.

Water Quality

The water quality of the Sacramento River and its major tributaries, such as the Feather and American rivers, is generally healthful for drinking and irrigation water, recreation, and the protection of fish and other aquatic life. However, water quality investigations conducted by the U.S. Geological Survey (USGS) and the U.S. Environmental Protection Agency (EPA) reveal the presence of the insecticide diazinon in Sacramento's urban streams and seasonally high concentrations of mercury in water at locations throughout the Sacramento River watershed. The Sacramento River is listed on the EPA's 1998 List of Impaired Waters; the state impairments are associated with elevated mercury, diazinon, and unknown toxicity levels.[2]

The Sacramento and American Rivers have been classified by the CVRWQCB as having numerous beneficial uses, 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. Ambient water quality in the Sacramento and American Rivers is influenced by agricultural drainage, mine drainage, urban runoff, and industrial, municipal, and construction discharges.

Urban growth of the Sacramento metropolitan area has also affected groundwater quality. Nitrate concentrations are elevated but are below drinking-water standards in most wells. Groundwater of the Sacramento Valley accumulates in regional aquifers from precipitation in low hills surrounding the valley and from infiltration of rain, rivers, and irrigation on the valley floor. Groundwater is affected

[2] State Water Resources Control Board, Central Valley Regional Water Quality Control Board, *The Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region, The Sacramento River and San Joaquin River Basins (Fourth Edition)*, revised October 2007.

by agricultural and urban land uses. North Sacramento is generally on Quaternary alluvium composed of gravel, sand, and clay. Shallow sediments are primarily composed of a thick sequence of silty and sandy clays, extending to a depth of approximately 60 feet below grade; discontinuous lenses (1 to 4 feet thick) of coarser material are present below ground surface at various locations within the valley deposit.

Urban Runoff Water Quality. Constituents found in urban runoff vary as a result of differences in rainfall intensity and occurrence, geographic features, the land use of a site, vehicle traffic, and percentage of impervious surface. In the Sacramento area, there is a natural weather pattern of a long dry period from May to October. During this 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 annual wet season (November to April) washes these pollutants into the stormwater, which can elevate pollutant concentrations in the initial wet weather runoff. This initial runoff with peak pollutant levels is referred to as the "first flush" of a storm event or events.

Stormwater discharge monitoring data have been collected from Sacramento urban area monitoring stations since 1990. From this monitoring data, the following six pollutants have been identified as "target pollutants": mercury, diazinon, chlorpyrifos, lead, copper, and fecal coliform. These pollutants were determined based on their toxicity, potential to exceed water quality criteria, and ability to accumulate in humans and animals, or if they were listed as impairing water bodies by the State Water Resources Control Board.

Regional Groundwater Hydrology

The North Sacramento portion of the City of Sacramento is located within the North American Groundwater Sub-basin, part of the larger Sacramento Valley Groundwater Basin (SVG Basin). The North American Groundwater Sub-basin covers approximately 351,000 acres (548 square miles) and is bound on the east by a north-south line extending from the Bear River to the north to Folsom Lake to the south, the Feather River to the west, the Sacramento River to the south, and the Bear River to the north.

Various geologic formations comprise the water-bearing deposits in the SVG Basin. Groundwater occurs in unconfined to semi-confined states throughout the sub-basins. The degree of confinement typically increases with depth below the ground surface; groundwater in the upper aquifer formations is typically unconfined. In general, groundwater levels in the vicinity of the City of Sacramento have been reported to be stable, fluctuating less than 10 feet since the 1970s, after declining for many years.[3] As part of a groundwater management strategy, the Sacramento Groundwater Authority (SGA) recently released a *Basin Management Report for 2004-2005* (BMR) that updates the current SGA uses of the North American Sub-basin. Notably, the BMR shows that between 1997 and 2004 a cone of depression near the central part of the SGA area rebounded by approximately five feet as a result of

[3] California Department of Water Resources, *California's Groundwater* (Bulletin 118), *Sacramento Valley Groundwater Basin*, last updated January 20, 2006.

less groundwater pumping and using more surface water by the members of the SGA. The spring 2004 groundwater measurements show a cone of depression of approximately -30 feet below mean sea level near the Swanston TVSP project area.[4]

Groundwater quality in the southern portion of the North American Groundwater Sub-basin where the project is located is generally within the secondary drinking water standards for municipal use. The groundwater is characterized as having calcium magnesium bicarbonate, with minor fractions of sodium magnesium bicarbonate. Groundwater in the southern portion of the basin is better than elsewhere in the basin, and is low in disinfection by-product precursor materials and moderate in mineral content.

Project-Specific Surface Hydrology

The City of Sacramento manages and services separate sanitary sewer and stormwater drainage systems for the more recently developed or developing areas within the city limits. The Swanston TVSP project area is located just west of State Route (SR) Business 80 east of Del Paso Boulevard and north of SR 160. The area is served by Sacramento's regional stormwater control facilities. The storm drain facilities in the Swanston TVSP project area collect runoff into conveyance systems that discharge flows via Sump 151 to Drain Pool Creek (at the north border of the American River Parkway), to the American River, and ultimately into the Sacramento River.

Flood insurance maps designate any area with less than 100-year protection as high-risk flood hazard areas. The proposed Swanston TVSP project lies within the Federal Emergency Management Agency (FEMA) designated Zone X. Zone X areas are protected by levees from 100-year floods.

During periods of heavy precipitation, many existing stormwater drainage systems in the vicinity cannot effectively convey the volume of runoff in the community's creeks and canals and can result in localized flooding. In addition, existing drainage infrastructure cannot accommodate future growth without additional improvements. North Sacramento's higher density areas will require street improvements, upgrading of existing drainage facilities, and construction of new facilities. The proposed Swanston TVSP project would also require similar drainage system upgrades and new systems to be incorporated as development occurs in accordance with the proposed Swanston TVSP project. Chapter 2, Project Description, of this EIR describes the storm drain upgrades and other drainage facilities needed to serve development that could occur within the Swanston TVSP project area (see Figures 2-16 and 2-17). In the Strategic Plan area, these improvements consist of upgrading lines and constructing surface detention facilities because there is no stormwater master plan for the area. In the Long-Term Plan area, continued upgrades of the lines are recommended as well as the conversion of the surface detention facilities to an underground detention facility.

[4] Sacramento Groundwater Authority, *Basin Management Report 2004-2005*, May 2006.

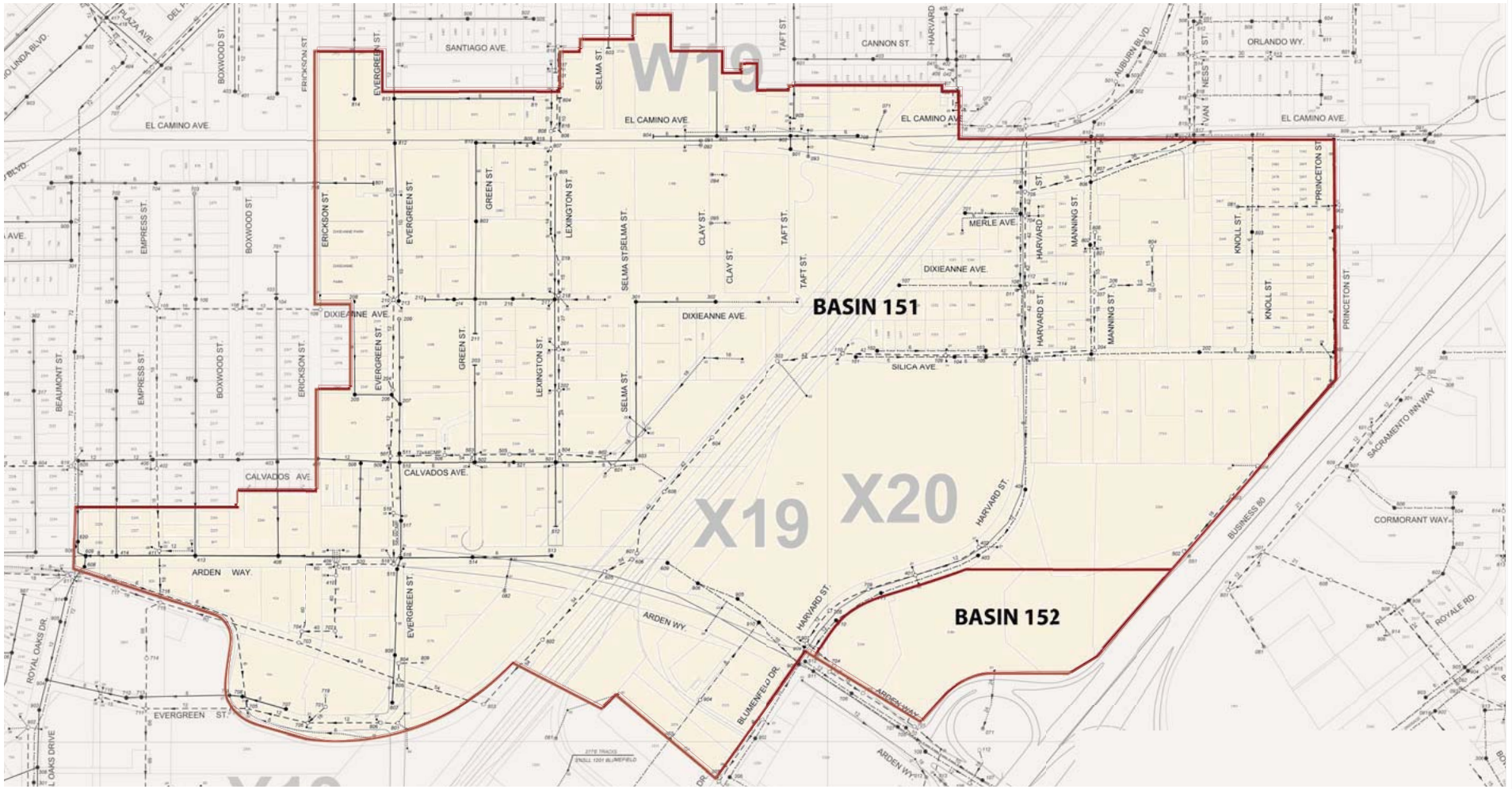
The Swanston TVSP project area is served by the City of Sacramento's storm drainage Basins 151 and 152 (see Figure 6.7-2). Approximately 224 acres of the 236-acre Swanston TVSP project area lies within Basin 151, which includes all of the Strategic Plan area and the portion of the Long-Term Plan area not included in Basin 152.

Stormwater runoff from a majority of the Swanston TVSP project area is collected through a system of road side drainage ditches or drain inlets. These ditches and inlets ultimately convey stormwater flows to underground piped conduits to a 66-inch main stormwater trunk located in the southwest corner of the Swanston TVSP project area. From the Swanston TVSP project area, flows are conveyed to the "East Basin" detention basin south of Woodlake School just north of SR 160, piped under SR 160 and conveyed to Sump 151. The flows are then pumped into Drain Pool Creek and discharged into the American River. Approximately 12 acres of the Swanston TVSP project area, all in the Long-Term Plan area, lie within Basin 152. This basin currently serves large commercial lots that contain private storm drainage systems connected to the City's Sump 152 main drainage line. Stormwater from the portion of the Long-Term Plan area within Basin 152 appears to be conveyed to main storm drain lines located in Arden Way.

Because future development that could occur within the Swanston TVSP project area falls almost entirely in Basin 151 and existing development in Basin 152 is served by private facilities, this assessment of storm drainage focuses on Basin 151. The evaluation of the existing drainage conditions for Basin 151, which accounts for 95 percent of the Swanston TVSP project area, identified storm drainage deficiencies including roadside ditches containing debris, damaged driveway culverts, and storm drain inlets covered with debris. In addition, the existing storm drain system for Basin 151 does not meet current City standards, and according to the WYA report was designed to meet runoff volume requirements identified for development existing in 1996.[5] The report also identified areas were flooding is predicted under the 10-year and 100-year storm events.[6] No deficiencies have been identified for Basin 152.

Table 6.7-1 provides a summary of the change in stormwater flows from existing conditions for 10-year and 100-year storm events within the Strategic and Long-Term Plan areas. As indicated in Table 6.7-1, the net change in stormwater flows between existing conditions and development that could occur within the Strategic Plan area would increase marginally for 10-year and 100-year storm events. The net change in stormwater flows between existing conditions and buildout in the Long-Term Plan area would actually decrease for 10-year and 100-year storm events because of the decrease in paved areas and corresponding increase in open space within the Long-Term Plan area.

[5] Kimley-Horn and Associates, Inc. *Swanston Station Village Infrastructure Report*, July 21, 2008, pg. 28.
[6] Kimley-Horn and Associates, Inc. *Swanston Station Village Infrastructure Report*, July 21, 2008, pg. 28.



Project Area

Parcels Outside Project Area

Storm Lines

0' 200 400 800

NORTH

SCALE IN FEET

***Source*:** Moore Iacofano Goltsman, Inc., 2007.

FIGURE **6.7-2**

Existing Stormwater System

Table 6.7-1
Net Change in Stormwater Runoff Flows from Existing Conditions

Study Area	Change in Peak 10 year Runoff (cfs)	Change in Peak 100 year Runoff (cfs)
Strategic Plan	1.12	1.22
Long-Term Plan	-0.81	-3.74

Source: Kimley-Horn and Associates, Inc., *Swanston Station Transit Village Infrastructure Report*, July 2008, p. 31. Estimated stormwater flow is based on the Sacramento Method per the City Design and Procedures Manual Section 11.31.

Note:

The change in stormwater runoff in the Long-Term Plan area is almost entirely attributable to the proposed changes in land use that could occur; however, it should be noted that the runoff changes in the Long-Term Plan area include the proposed modifications to drainage facilities in the Strategic Plan area.

The infrastructure report and earlier WYA report identified a number of conveyance and storage basin improvements, both within the Swanston TVSP project area and downstream of the Swanston TVSP project area, to convey flows and prevent localized flooding. All of the recommended improvements in the WYA report would be necessary to alleviate the potential for localized flooding. Although the infrastructure report did not identify stormwater runoff volumes associated with the Strategic Plan area, it did recommend detention basins to avoid post-development stormwater volumes from exceeding existing capacity in downstream conveyance infrastructure (i.e., "East Basin" detention basin) and at Sump 151. Further modeling analysis would be completed to stage the recommended improvements. The recommended storm drain system improvements in the Swanston TVSP project area are due almost entirely to downstream capacity limitations (i.e., "East Basin") and are already planned to be remedied by the City as recommended in the WYA report. According to the proposed Swanston TVSP project, the improvements would be funded through the City's Capital Improvement Program, special financing mechanisms, or developers, if required by the City. The improvements would be implemented at a schedule to be determined by the City to serve development within the Swanston TVSP project area.[7] The WYA report also recommended two stormwater detention basins within the Swanston TVSP project area: 1) the Green Street Basin located near Green and Calvados Avenue; and 2) the Intertrack Basin, located near the railroad tracks.[8] As of November 2007, not all planned improvements have been installed.

The existing storm drain system within the 151 Sump Basin Area of the Swanston TVSP project area does not currently meet City standards. The existing infrastructure does not have the necessary capacity to adequately convey the 10- and 100-year storms. Storm drainage improvements are needed in both the Strategic Plan and Long-Term Plan areas in order to correct existing deficiencies prior to development in accordance with the proposed Swanston Station Specific Plan. These improvements include piping and inlets in existing streets.

[7] Sacramento City Department of Utilities, Dave Schamber, personal communication, February 3, 2009.
[8] Kimley-Horn and Associates, Inc. *Swanston Station Village Infrastructure Report*, July 21, 2008, pg. 31.

Project-Specific Groundwater Quality

Groundwater in the Swanston TVSP project area has been affected by past urban uses. As described in Section 6.6, Hazardous Materials, a Phase 1 ESA by España for the Sacramento RT Northeast Corridor project and a review of the DTSC's hazardous materials database identified a number of sites potentially resulting in environmental contamination within the Swanston TVSP project area. Most of the sites had leaking underground storage tanks (LUST) in various locations in and around the Swanston TVSP project area. However, according to the quarterly report provided by the RWQCB, these sites have been remediated or are in the process of remediation. Further, information from DTSC staff confirms solvent contamination of groundwater underneath the Swanston TVSP project area, but that no studies have been done to delineate the extent and source of contamination in the area.[9] Given the uncertainty of the location and extent of this contamination, this assessment assumes development that could occur within both the Strategic Plan and Long-Term Plan areas could equally be exposed.

Applicable Plans and Policies

Federal

Clean Water Act. Originally implemented as the Federal Water Pollution Control Act Amendments of 1972, the Clean Water Act (CWA) was designed to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The CWA also directs states to establish water quality standards for all "waters of the United States" and to review and update such standards on a triennial basis.

Section 402 - National Pollutant Discharge Elimination System. The 1972 amendments to the Federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (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). 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 nonpoint-source discharges to waters of the United States.

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 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 nonpoint 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

[9] State Department of Toxic Substances Control, Sam Martinez, personal communication, January 8, 2008.

goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable.

The State Water Resources Control Board (SWRCB) issues both general and individual permits for discharges to surface waters, including for both point-source and nonpoint-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. See "Local Regulations" below for more detail on NPDES.

Section 303 – Total Maximum Daily Loads. 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 total maximum daily load (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. See "State Regulations" below for information on State management of water quality standards.

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 protect "outstanding" (e.g., ecologically sensitive, cleanest, and recreationally popular waters) with strict protection standards. See "State Regulations" below for water quality management.

Federal Emergency Management Agency (FEMA). FEMA is responsible for determining flood elevations and floodplain boundaries based on Corps 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.

State

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act of 1969 is California's statutory authority for the protection of water quality. The act sets forth the obligations of the SWRCB and regional water quality control boards (RWQCBs) under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans establish beneficial uses, water quality objectives, and implementation programs for each of the nine regions in California including the Sacramento-San Joaquin River Basin (see below). The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies, but much

of its daily implementation authority is delegated to the nine RWQCBs, which are responsible for implementing CWA Sections 402 and 303(d), as described above.

The Porter-Cologne Act also requires waste dischargers to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, and other permits. Those pertinent to the proposed Swanston TVSP project are included in this section below.

Water Quality Control Plan for the Sacramento River Basin. Water quality objectives for the Sacramento River are specified in the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin (Basin Plan) prepared by the CVRWQCB in compliance with the federal CWA and the California Water Code (Section 13240). The Basin Plan contains water quality numerical and narrative standards and objectives for rivers and their tributaries within its jurisdiction. In cases where the Basin Plan does not contain a standard for a particular pollutant, other criteria, such as EPA water quality criteria developed under Section 304(a) of the CWA, apply.

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, water temperature, trace metals, turbidity, suspended material, pesticides, salinity, radioactivity, and other related constituents. The Basin Plan provides numerical limits to specific water quality constituents and pollutants which also limit permitted discharges to receiving water.

General Permit for Stormwater Discharges Associated with Construction Activity. Construction activities are regulated under the NPDES General Permit for Discharges of Storm Water Runoff associated with Construction Activity (General Construction Permit), provided that the total amount of ground disturbance during construction is one acre or more. 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. Construction done for within the Swanston TVSP project area, either within or outside the Swanston TVSP project area, that meets the criteria for a General Construction Permit would be required to obtain and comply with this permit.

Dewatering. Dewatering during construction is sometimes necessary to keep trenches or excavations free of standing water when improvements or foundations/footings are installed. Clean or relatively pollutant-free wastewater that poses little or no threat to water quality may be discharged directly to

surface water under certain conditions. The CVRWQCB has adopted a general NPDES permit, the General Order for Dewatering, for short-term discharges of small volumes of wastewater from certain construction-related activities. Discharges may be covered by the General Order for Dewatering provided that either they are four months or less in duration or the average dry-weather discharge does not exceed 0.25 million gallons per day (mgd). Construction dewatering and miscellaneous dewatering/low-threat discharges are among the types of discharges that may be covered by the permit.

To obtain coverage, the applicant must submit an NOI and pollution prevention and monitoring and reporting plan (PPMRP). The PPMRP must include a description of the discharge location, discharge characteristics, primary pollutants, receiving water, treatment systems, spill prevention plans, and other measures necessary to comply with discharge limits. A representative sampling and analysis program must be prepared as part of the PPMP and implemented by the permittee, along with recordkeeping and quarterly reporting requirements during dewatering activities.

For dewatering activities that are not covered by the General Dewatering Permit, an individual NPDES permit and waste discharge requirements (WDRs) must be obtained from the RWQCB. This is intended to ensure that the developer/contractor take all reasonable steps necessary to avoid adverse impacts on existing property caused by dewatering.

Local

Stormwater Quality/Urban Runoff Management. The County of Sacramento and the cities of Sacramento, Folsom, Citrus Heights, Elk Grove, Rancho Cordova, and Galt have a joint NPDES permit (No. CAS082597) that was granted in December 2002. The permittees, also known as the Sacramento Stormwater Quality Partnership, listed under the joint permit have the authority to develop, administer, implement, and enforce stormwater management programs within their own jurisdiction. The permit is intended to implement the Basin Plan through the effective implementation of BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable (MEP). The *Stormwater Quality Design Manual for the Sacramento and South Placer Regions* (SWQ Manual)(May 2007) was prepared as a collaborative effort of the Sacramento Stormwater Quality Partnership and the City of Roseville, and it is intended to satisfy the regulatory requirements of their respective municipal stormwater permits. The SWQ Manual provides planning tools and requirements, such as the City of Sacramento Storm Drainage Design Standards, to reduce urban runoff pollution to the MEP from new development and redevelopment projects.

City of Sacramento Stormwater Management and Control Code. The City Stormwater Management and Control Code (Chapter 13.16 of the City Code) is intended to control non-stormwater 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 MEP. Non-stormwater 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 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. See below for information on discharges from dewatering activities.

Post-construction non-stormwater and pollutant discharges resulting from new development are minimized and controlled using source and/or treatment control measures to remove and prevent pollution in stormwater as determined by the City in the SWQ Manual. 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. An enforcement official for the City will deem which measures are appropriate to minimize the long-term, post-construction discharge of stormwater pollutants from new development or modifications to existing development. Other measures may be implemented as deemed appropriate by an enforcement official for the City.

City of Sacramento Grading, Erosion, and Sediment Control Ordinance. The City Grading, Erosion, and Sediment Control Ordinance (Title 15, Chapter 15.88 of the City Code) sets forth rules and regulations to control land disturbances, soil storage, pollution, and erosion and sedimentation resulting from construction activities. With limited exceptions, grading approval must be granted by the City 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 and spill prevention. 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.

Groundwater Discharges (Dewatering). The City requires that any short-term discharge be permitted, or an approved MOU for temporary long-term discharges be established, between the discharger and the City. Short-term limited discharges of seven days duration or less must be approved through the City Department of Utilities by acceptance letter, and a permit must be obtained from the Sacramento Regional County Sanitation District (SRCSD), which treats all City sewage. Long-term discharges of greater duration than seven days must be approved through the City Department of Utilities, City attorney, and City clerk through a MOU process. The MOU must specify the type of groundwater discharge, flow rates, discharge system design, a City-approved contaminant assessment of the proposed groundwater discharge indicating tested levels of constituents, and a City-approved effluent monitoring plan to ensure contaminant levels remain in compliance with state standards and SRCSD- and CVRWQCB-approved levels. All groundwater discharges to the sewer must be granted a SRCSD discharge permit. If the discharge is part of a groundwater cleanup or contains excessive contaminants, CVRWQCB or other appropriate agency approval is also required.

Dewatering could be necessary at excavation sites in the Swanston TVSP project area. Often, the groundwater provides partial support for the near-surface soil materials and, when withdrawn, causes the soils to slough into the excavation. If the dewatering system draws down the water table adjacent

to the excavation, there is the possibility of undermining structures and pipes in the adjacent area, causing cracking or collapse. To avoid these conditions, dewatering system design and excavation-wall support need to be appropriate to the soil conditions. The required site-specific evaluation of soil conditions must contain recommendations for these systems specific to the site, and be incorporated into the construction design.

City of Sacramento General Plan. The following goals and policies from the Public Facilities and Services Element are applicable to the proposed Swanston TVSP project:

Goal A: Provide adequate drainage facilities and services to accommodate desired growth levels.

Policy 1: Ensure that all drainage facilities are adequately sized and constructed to accommodate the projected increase in stormwater runoff from urbanization.

Policy 4: Require private sector to form assessment districts and/or utilize other funding mechanisms to cover the cost of providing drainage facilities.

Policy 5: Design visible drainage facilities to be visually attractive.

Proposed Swanston Station Transit Village Specific Plan. The proposed Swanston TVSP project contains the following policies applicable to hydrology and water quality:

- Upgrade the existing storm drain system according to the master plan report for Basin 151, completed by West Yost & Associates, except as modified by the proposed Swanston TVSP project (see Figures 2-16 and 2-17).
- Maintain all public storm drains in public rights-of-way dedicated to public streets.
- Require public projects to explore integrated stormwater management systems to reduce discharge into the storm drain system.
- Require private projects to contain stormwater on-site resources to reduce discharge into the storm drain system, unless the detention basins/facilities identified in Figures 2-16 and 2-17 are already operational.
- Encourage stormwater management practices that emphasize conservation and sustainability.

Impact Assessment and Mitigation Measures

Methods of Analysis

Analysis of potential hydrology and water quality impacts is based on review of the Swanston TVSP project area, intended land uses, and information developed by the infrastructure report and the WYA report to establish existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section.

Impacts on surface and groundwater quality were analyzed by reviewing existing groundwater and surface water quality literature that pertains to the Swanston TVSP project area, identifying existing onsite ground and surface water, including the depth to groundwater, and evaluating existing and potential sources of water quality pollutants based on the types of land uses and operational activities in the Swanston TVSP project area. Additionally, the applicability of federal and state regulations, ordinances, and/or standards to surface and groundwater quality of the Swanston TVSP project area and subsequent receiving waters were assessed. Potential impacts under the proposed Swanston TVSP project were determined by evaluating whether development of the proposed land uses would exceed the thresholds of significance outlined below.

The analysis of potential water quality effects from the proposed Swanston TVSP project was based on a qualitative comparison of pre-developed and post-developed land uses. Specific types of water quality BMPs (both construction and operational), except for in-channel water quality basins and grass swales, have not been determined at this stage of project development. However, it is conservatively assumed for purposes of evaluation in this EIR that new or additional stormwater runoff generated by the proposed Swanston TVSP project is expected to contain some level of contaminants associated with urban development.

Standards of Significance

A significant impact would occur if the proposed Swanston TVSP 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 consumption and/or operational activities;
- Substantially increase exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood; or
- Generate stormwater that would exceed the capacity of the stormwater system

Environmental Analysis

The hydrologic and water quality conditions with respect to flood hazards, groundwater, and water quality throughout the Swanston TVSP project area are similar. As a result, the potential hydrology and water quality impacts from development that could occur within the Strategic Plan area of the proposed Swanston TVSP project would be the same as in the rest of the Swanston TVSP project area; the only exception is stormwater runoff and drainage which vary throughout the Swanston TVSP project area and are a function of the capacity of the storm drain system, the presence or absence of drainage improvements, the land use characteristics, and the amount of impervious surface. Consequently, the following impact analyses and recommendations for mitigation measures with respect to flood hazards, groundwater, and water quality would apply to construction and operation activities in both the Strategic Plan area and the Long-Term Plan area; however, the analysis of stormwater runoff and drainage improvements in Impact HY-5 differ between the two areas.

In order to determine impacts for each resource, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not reduce potentially significant or significant impacts to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section, HY refers to Hydrology and Water Quality.

HY-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would result in construction activities that could degrade water quality and violate state water quality objectives by increasing sedimentation and other contaminants entering streams and rivers; however, existing state and local regulations would ensure that control measures and plans are in place to protect water quality. (LTS)

Construction activities associated with development that could occur under proposed Swanston TVSP project could result in land-disturbing activities such as grading, excavation, and trenching. Such activities would occur in conjunction with roadway and utility improvements; installation of open space, pedestrian, bicycle, and recreational improvements; and the individual development projects allowed by the proposed Swanston TVSP project and zoning amendments. When portions of the Swanston TVSP project area are excavated or otherwise disturbed by construction activities, the potential for soil erosion and sedimentation exists and would substantially increase during a rainstorm. In addition, construction equipment would have the potential to leak polluting materials, including oil and gasoline. Improper use of fuels, oils, and other construction-related hazardous construction materials may also pose a threat to surface or groundwater quality. Sediment and contaminants would be conveyed to local storm drains and eventually may be introduced into Drain Pool Creek, the American River, and the Sacramento River and its downstream drainages and water bodies.

Although earth-disturbing activities associated with construction in the Swanston TVSP project area would be temporary, on- or off-site soil erosion, siltation, or discharges of construction-related hazardous materials could degrade downstream surface waters or groundwater. The following regulatory mechanisms would control construction activities and reduce, to the maximum extent practicable, the degradation of water quality.

Compliance with NPDES Requirements. Before the onset of any construction activities, where the disturbed area is one acre or more in size, the CVRWQCB and the City of Sacramento would require contractors to obtain coverage under the NPDES General Construction Permit and include erosion and sediment control plans prior to issuance of a permit. As a performance standard, the SWQ Manual and General Construction Permit require controls of pollutant discharges that use best available technology that is economically achievable, best conventional pollutant control technology to reduce pollutants, and any more stringent controls necessary to meet water quality standards. BMPs may consist of a wide variety of measures to reduce pollutants in stormwater and other non-point source runoff.

Measures range from source controls, such as reduced surface disturbance, to treatment of polluted runoff, such as biofilters, sediment fences, and detention basins. The SWQ Manual includes BMPs to be implemented to meet the NPDES Phase 1 and General Construction Permit conditions.

Prior to issuance of a construction permit, the City would require contractors to submit for approval an erosion and sediment control plan. The City would verify that an NOI has been filed with the CVRWQCB and a SWPPP has been developed before allowing construction to begin. The City would perform inspections of the construction area to verify that the BMPs specified in the erosion and sediment control plan are properly implemented and maintained. The City would notify contractors immediately if there is a noncompliance issue and would require compliance. Control of erosion and sediment transport during the construction phase would effectively mitigate potential impairment of receiving waters.

Implementation of a Spill Prevention and Control Plan (SPCP). The City would also require contractors' SWPPPs and erosion and sediment control plans to include BMPs to minimize the potential for, and effects from, spills of petroleum products, hazardous, or toxic substances during construction activities for all contractors. Implementation of this measure would comply with state and federal water quality regulations and reduce the impact from accidental releases of hazardous materials to a water body to a less-than-significant level. The City would routinely inspect the construction area to verify that the measures specified in the erosion and sediment control plan are properly implemented and maintained. The City would notify contractors immediately if there is a noncompliance issue and would require compliance.

The federal reportable spill quantity for petroleum products, as defined in 40 CFR 110, is any oil spill that:

- violates applicable water quality standards;
- causes a film or sheen on, or discoloration of, the water surface or adjoining shoreline; or
- causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If a spill occurs, the contractor's superintendent would notify the City, and the contractor would take action to contact the appropriate safety and clean-up crews to ensure that the SPCP is implemented. In addition, the City would respond and investigate any spills reported at construction sites. A written description of reportable releases would be submitted to the CVRWQCB and the Department of Toxic Substances Control (DTSC) by the contractor or owner. This submittal would be required to contain a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases would be documented on a spill report form. If an appreciable spill occurs and results determine that construction activities have adversely affected surface water or groundwater quality, a detailed analysis would be performed to the specifications of DTSC

to identify the extent of contamination. This analysis would include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, contractors would select and implement measures to control migration of contamination, with a performance standard that surface and/or groundwater quality must be returned to baseline conditions. These measures would be subject to approval by the City and/or CVRWQCB.

Adherence to the regulations described above and development and implementation of a SPCP for construction activities as required by the City would reduce stormwater pollutants to the maximum extent practicable and impacts on water quality to less-than-significant levels.

HY-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would generate new sources of urban runoff that could violate water quality standards or waste discharge requirements for receiving waters; however, design guidelines included as part of the proposed Swanston TVSP project along with compliance with existing state and local regulations would require implementation of control measures and best management practices that would protect water quality. (LTS)

Future development that could occur under the proposed Swanston TVSP project would result in new residential, commercial, recreation, and landscaping that would increase impervious surfaces and use of typical urban pollutants (cleaners, pesticides, etc.) within the Swanston TVSP project area that could potentially affect water quality.

Stormwater pollutant loads reflect the land uses that they drain. As a result, the stormwater draining Basin 151 contains pollutants from the full range of land uses in the Swanston TVSP project area (single family and multifamily residential areas, retail, service commercial, light industrial, warehousing, neighborhood park, and large office and hotel complexes with extensive landscaping and paved parking areas); whereas, stormwater draining Basin 152 contains pollutants that are representative of commercial lands (hotels with extensive surrounding landscaping and paved parking areas). The typical stormwater pollutants associated with these different land uses are described below.

- Residential – Residential activities often involve conventional maintenance of landscaping (e.g., using fertilizers, herbicides, pesticides, fungicides, and other chemicals) that can enter stormwater runoff. In addition, motor vehicle operation and maintenance introduces oil and other petroleum-based products, heavy metals such as copper from brake linings, and surfactants from cleaners and waxes into residential runoff. Pet and animal waste from landscaped areas can enter stormwater runoff or flow directly into drainages.

- Commercial – Commercial businesses often perform conventional maintenance of landscaped areas and use fertilizers, herbicides, pesticides, and other chemicals, which can enter stormwater runoff. Motor vehicle operation and maintenance also contribute oil and other petroleum-based products, heavy metals such as copper from brake linings, and surfactants into storm water runoff. Auto mechanic shops, nurseries and hardware supply stores, salvage yards, dry cleaners, graphic and photographic processing shops, recycling

businesses, as well as other commercial and industrial businesses, can potentially contribute concentrated quantities of hazardous substances directly or indirectly into stormwater runoff, as well as groundwater, if not properly contained and monitored.

- Recreation – Parks and open space areas often practice conventional landscaping methods and maintain areas using fertilizers, herbicides, pesticides, and algaecides, which can enter stormwater runoff or flow directly into drainages.

- Infrastructure – In addition to the above mentioned operational surface water quality pollutants from urban land use conditions, construction and operation of roadways, and drainage improvements (e.g., culverts, discharge points, and alteration of natural drainage flow conditions) can alter normal and stormwater drainage flows in waterways that could alter natural erosion and siltation conditions resulting in higher sedimentation rates.

In summary, runoff from urban development typically contains oils, grease, fuel, antifreeze, byproducts of combustion (such as lead, cadmium, nickel, and other metals), as well as nutrients from fertilizers and animal waste, sediment, pesticides, herbicides, and other pollutants. Also, animal waste from pets (e.g., dogs, cats, and horses) contributes bacterial pollutants into surface waters. Precipitation during the early portion of the wet season conveys a majority of these pollutants in the stormwater runoff, resulting in short-term high pollutant concentrations in the initial wet weather runoff. This initial runoff, containing peak pollutant levels, is often referred to as the "first flush" of storm events. The first flush of heavy metals and hydrocarbons typically occur during the first five inches of seasonal rainfall.

As previously noted, the City operates under a Phase I NPDES permit for stormwater municipal discharges to surface waters (NPDES No. CAS082597). The permit requires that the City impose water quality and watershed protection measures for all development projects. The intent of the waste discharge requirements in the permit is to attain water quality standards and protection of beneficial uses consistent with the CVRWQCB's *Water Quality Control Plan for the Sacramento and San Joaquin River Basins* (February 2007)(Basin Plan). The NPDES permit prohibits discharges from causing violations of applicable water quality standards or result in conditions that create a nuisance or water quality impairment in receiving waters. In addition, the City's Stormwater Management and Discharge Control Code and the State NPDES Permits for Industrial sites provide additional regulation and guidance to prevent degradation of water quality.

The City has identified a range of BMPs and measurable goals to address stormwater discharges in the City. A key component of this compliance is implementation of the SQIP "new development element" that requires stormwater quality treatment and/or BMPs in project design for both construction and operation. Post-construction stormwater quality controls for new development require use of control measures set forth in the SWQ Manual. For individual projects that could occur under the proposed Swanston TVSP project, these measures include the use of treatment-control measures (swales, filter strips, media filters and infiltration), and

housekeeping practices (e.g., spill prevention, proper storage measures and clean-up procedures).

Complying with these policies and regulatory requirements would minimize the infiltration of urban pollutants in stormwater runoff from Basins 151 and 152, discharging to the American and Sacramento rivers, and from percolating into and degrading downstream surface water bodies and groundwater. Further, implementation of the following design guidelines listed in the proposed Swanston TVSP project would reduce the pollutant load in the stormwater runoff from the Swanston TVSP project area:

- Encourage the use of bioswales along the greenways to attenuate surface runoff (Design Guideline 1Civ-7);
- Encourage the integration of stormwater runoff reduction and treatment best management practices (BMPs) to maximize ecological considerations (Design Guideline 2Axi-1);
- Ensure the design of new development that integrates stormwater BMPs on-site to maximize their effectiveness (Design Guideline 2Axi-3);
- Utilize stormwater BMPs such as vegetated swales, stormwater planters and rain gardens with engineered soils and proper plant choices to treat runoff in greenways and pocket parks designed on private and public land (Design Guideline 2Axi-14);
- Meander swales to maximize surface area for treatment (Design Guideline 2Axi-15);
- Encourage the use of landscaping with plants that can withstand pollutants and are effective in their removal (Design Guideline 2Axi-16).

As a result, compliance with City policies and regulatory requirements and implementation of the design guidelines contained in the proposed Swanston TVSP project would result in a less-than-significant impact with regard to water quality.

HY-3. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not substantially impact groundwater recharge or quality. (LTS)

Implementation of the proposed Swanston TVSP project would not substantially change groundwater recharge in the North American Subbasin that encompasses the Swanston TVSP project area and provides potable water supply to the City. The subbasin covers 548 square miles, extending through Sacramento, Placer, and Sutter counties. The Swanston TVSP project area currently includes over 200 acres of predominantly urbanized land uses and impervious surfaces that block direct groundwater recharge by precipitation. Further, groundwater recharge in the City primarily occurs along streams, rivers, and open space areas because these areas, in general, provide direct recharge without impervious structures blocking recharge. The proposed Swanston TVSP project would result in an increase of approximately 18 acres of impervious surface area. Because the Swanston TVSP project area does not

currently contribute significantly to direct recharge, and because the increase in impervious surface area would be about 10 percent of the total project acreage, the proposed Swanston TVSP project would not substantially impact groundwater recharge.

Construction excavations within the Swanston TVSP project area from development that could occur in accordance with the proposed Swanston Station Specific Plan, are not likely to occur below the groundwater table. Improvements described by the proposed Swanston TVSP project that could require excavations include installation of roadway and utility improvements, construction of greenways and mews to enhance walkability throughout the project area, and pedestrian and bicycle connections across the Union Pacific railroad tracks. These proposed Swanston TVSP project features would not be expected to reach the groundwater table, which is located approximately at depths of 55 to 65 feet below ground surface according to a review of water well records for an investigation of contamination from 975 Calvados Avenue, formerly a Kraft food site[10] within the Strategic Plan area. Individual projects may involve deep foundations (particularly the most intensive, high density development proposed immediately around the Swanston Light Rail Station) that could encounter groundwater.

If construction dewatering were necessary, it could potentially cause changes in the rate and direction of groundwater flow from areas of contamination and degrade groundwater quality in areas previously uncontaminated if not properly controlled. Prior to the issuance of grading permits, project applicants within the Swanston TVSP project area whose projects would require dewatering would be required to apply for a dewatering permit pursuant to Waste Discharge Requirements General Order for Dewatering and Other Low Threat Discharges to Surface Waters, as established by the CVRWQCB, which would be enforced by the City. The permit states that construction dewatering activities may occur provided that discharges do not contain significant quantities of pollutants and are either four months or less in duration or the average dry weather discharge does not exceed 0.25 mgd.

Therefore, permitting required for dewatering activities that could occur under the proposed Swanston TVSP project would place a limit on the amount of groundwater pumped during dewatering activities and ensure that groundwater supplies are not adversely affected. Without substantial groundwater depletion, changes to flow and movement of degraded groundwater to areas where groundwater has been depleted would be unlikely. Moreover, enforcement by the City would ensure that dewatering is consistent with the restrictions, standards, and requirements of the CVRWQCB

As a result of the above practices and regulations administered by the City Department of Utilities, future development under the proposed Swanston TVSP project that requires dewatering would not permanently change the quantity of groundwater, alter the direction or the rate of flow of groundwater, or affect groundwater quality and impacts would be less than significant.

[10] Kleinfelder, Targeted Site Investigation Report, Royal Oaks Light Rail Station Development Area, Sacramento, California, June 21, 2007, p. 17.

HY-4. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would not expose people and/or property to the risk of injury and damage in the event of a 100-year flood. (LTS)

The Swanston TVSP project area is located within the "Shaded X" flood zone, meaning that implementation of the project would not expose people and/or property to the risk of injury and damage in the event of a 100-year, or greater, flood. Therefore, the proposed Swanston TVSP project would have a less-than-significant impact with respect to flood hazards.

HY-5. Development that could occur under the proposed Swanston TVSP project (Strategic Plan and Long-Term Plan areas) would generate stormwater that would exceed the capacity of the stormwater system. Provisions of the proposed Swanston TVSP project would encourage stormwater control and treatment, but would not ensure that adequate stormwater capacity exists to serve future development. (PS)

An evaluation of the existing drainage conditions for the Swanston TVSP project area identified a number of existing storm drainage deficiencies.[11] Specifically, the existing storm drain system within Basin 151 does not currently meet City of Sacramento standards. The WYA report for Basin 151, completed in 1996, identified a number of conveyance and storage basin improvements, both within the Swanston TVSP project area (the report covered property within the City of Sacramento service area and encompasses lands within both the Strategic Plan area and the Long-Term Plan area) and downstream of the Swanston TVSP project area, to convey flows and prevent localized flooding. The installation of new lines, increasing the size of existing lines, and the construction of two detention basins, which are within Swanston TVSP project area: 1) the Green Street Basin located near Green Street and Calvados Avenue (in the Strategic Plan area); and 2) the Intertrack Basin, located south of Silica Avenue, between the USAA parking garage and the UPRR tracks (in the Long-Term Plan area) were among the specific recommendations of the WYA report. As of November 2007, these upgrades have yet to be completed. The proposed Swanston TVSP project contains a policy to upgrade the existing storm drain system according to the WYA report, and also includes alternatives to the Green Street Basin, since that site is no longer available to accommodate a stormwater detention facility. The proposed Swanston TVSP project recognizes that of the $11.1 million in infrastructure improvements to correct existing infrastructure constraints, the chief existing deficiency in the Strategic Plan area is stormwater drainage.

Strategic Plan. As indicated in Table 6.7-1, stormwater runoff calculations conducted for development that could occur within the Strategic Plan area indicate a net increase in stormwater runoff compared with existing land uses. For a 10-year storm, runoff would increase 1.12 cfs, and for a 100-year storm, runoff would increase 1.22 cfs. Without improvements to the storm drainage system, future development within the Strategic Plan area would exacerbate the existing storm drain capacity deficiencies and result in localized flooding. The City has determined that above-ground stormwater detention west of the UPRR tracks

[11] Kimley-Horn and Associates, Inc. *Swanston Station Village Infrastructure Report*, July 21, 2008.

would be necessary for development within the Strategic Plan area. Further, the City has indicated that the surface detention may be accommodated in two small basins, as shown in Figure 2-16, in lieu of the WYA-recommended Green Street Basin.

Additional improvements outside of the project area would also be necessary in Basin 151, as recommended by the 1996 WYA report. Some improvements have already been constructed, such as the reconstruction of Sump 151 and the construction of the "East Basin" detention required in downstream facilities within the Basin beyond those recommended in the WYA Master Plan.

Long-Term Plan. As shown in Table 6.7-1, with buildout of the Swanston TVSP project area, the net change to runoff flows from existing conditions would be -0.81 cfs for a 10-year storm and -3.74 cfs for a 100-year storm. The reduction in net runoff flows is projected because development that could occur within the Long-Term Plan area would increase the amount of open space and pervious land cover in the Swanston TVSP project area, compared to existing conditions. As a result, more rainfall and runoff would percolate into the ground and less would occur as runoff to be conveyed by storm drains. Specific Design Guidelines in the proposed Swanston Station Specific Plan that would shape future development and reduce runoff include:

- Establish a hierarchy for runoff management, beginning at the building, then the lot, open spaces and finally the roadway. Maximize runoff management at each of these levels to minimize runoff into the existing stormwater system (Design Guideline 2Axi-2).
- Encourage the use of intensive and extensive green roofs and water collective devices, such as cisterns and rain barrels, to capture rainwater from the building for re-use (Design Guideline 2Axi-4).
- Ensure medium- to large-canopy trees are planted in the front yards of private development and in greenways, parks and plazas to serve as interceptor trees for rainfall, slowing and reducing the amount of rainfall that falls to the ground (Design Guideline 2Axi-7).
- Minimize on-site impermeable surfaces, such as concrete, asphalt and hardscaping (Design Guideline 2Axi-8).
- Utilize permeable pavers, porous concrete, porous asphalt, reinforced grass pavement (turf-concrete), cobblestone block pavement, etc. to detain and infiltrate runoff on-site (Design Guideline Axi-9).
- Encourage the use of permeable surfaces (permeable pavers, porous concrete, etc.) on public plazas and promenades in the private realm, while maintaining ADA compliance (Design Guideline 2Axi-13).

Impacts from Installation of Storm Drainage Facilities. As required by law, all utility connections would be constructed in accordance with all applicable Uniform Codes, City Ordinances, and City standards to ensure an adequately sized and properly constructed storm

drainage conveyance and detention facilities. Implementation and extension of utility infrastructure would be constructed prior to occupancy and in a manner that would minimize the potential for utility disruption. Construction activities for the installation of new or upgraded storm drains lines and detention/storage facilities would be similar to those for other utility upgrades required to accommodate development that could occur under the proposed Swanston TVSP project. Impacts from these construction activities, which require excavation, trenching, and grading, could include temporary traffic delays, noise, disturbance to street trees and possibly nesting birds, fugitive dust emissions, and possible erosion and hazardous materials exposure. These impacts are addressed in other technical sections in Chapter 6 of this EIR and are mitigated to less than significant through standard construction best management practices. As a result, future development that could occur in accordance with the proposed Swanston TVSP project would not result in substantial physical effects due to the provision of stormwater runoff collection and conveyance, so that the impacts would be considered less than significant.

Timing of Project-Recommended Drainage Improvements. Development anticipated within the Long-Term Plan area would not interfere with the construction of the WYA-recommended Intertrack basin, which would be located above ground. However, development anticipated within the Long-Term Plan area could result in the undergrounding of the two surface detention basins constructed in lieu of the Green Street basin if desired by the City.

According to the proposed Swanston TVSP project, the improvements would be funded through the City's Capital Improvement Program, special financing mechanisms, or developers, if required by the City. The proposed Swanston TVSP project acknowledges funding constraints with each of these sources, and identifies several other sources for the City to explore. However, as the improvements would be implemented at a schedule to be determined by the City, it is possible that the required detention facilities would not be constructed by the time the Long-Term Plan area is built out. In the interim, individual projects that could occur within the Strategic Plan and Long-Term Plan areas would be required to detain stormwater on-site until the recommended stormwater detention basin are constructed.

No deficiencies have been identified for Basin 152, and no drainage facilities have been recommended for the basin beyond those that currently serve Basin 152. Any development proposals within Basin 152 would provide necessary improvements to the storm drain system prior to development according to City requirements.

MITIGATION MEASURE. Implementation of either of the following mitigation measures would ensure that adequate stormwater detention is provided by new development prior to occupancy. This measure would apply in both the Strategic Plan and Long-Term Plan areas and would reduce localized drainage impacts to a less-than-significant level. (LTS)

HY-5.1 *Construction of Recommended Stormwater Detention Basins.* The City shall identify a mechanism to fund the construction of the required detention basins by

requiring individual project applicants to pay their fair share towards the improvement. Funds from this mechanism shall be used to pay for the drainage improvements identified in the Swanston Station Specific Plan. Funding mechanisms identified for consideration in the Swanston Station Specific Plan include impact fees, utility user fees, and regional and federal grants.

HY-5.2 *On-site Stormwater Detention*. Project applicants shall provide on-site stormwater detention to ensure that peak runoff from the project site will not exceed existing runoff volumes, until the required detention basins are constructed.

Cumulative Analysis

There are many different land uses in the Sacramento River watershed and within the North American Subbasin that provide direct input to both surface water and groundwater quality. Therefore, development within the city limits, in addition to other development within the watershed area outside city limits, can potentially impact groundwater resources in the North American Subbasin and water quality in the Sacramento River. Therefore, the cumulative setting for analysis of these facets of hydrology and water quality includes development within the Sacramento River watershed and the North American Subbasin. Alternatively, the cumulative setting for impacts to localized flooding and storm drains are limited to the City drainage systems within Basins 151 and 152 because these basin systems are separated from other developed areas.

HY-6. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the region, would result in the discharge of stormwater runoff containing urban pollutants and sediment to local waterways, which could affect surface water quality in the Sacramento River watershed. However, the proposed Swanston TVSP project's contribution is considered less than cumulatively considerable. (LTS)

The proposed Swanston TVSP project, in combination with other development within the region, would increase urban runoff into the Sacramento River, and increase the concentration of urban pollutants in stormwater. As development occurs, there would be an increase in the amount of ground-disturbing activities and an increase in impervious surfaces, which could contribute to increased sedimentation and pollutants in runoff, potentially affecting water quality throughout the watershed. The proposed Swanston TVSP project would result in discharges of stormwater runoff during construction and operation. The proposed Swanston TVSP project would allow increased intensity of land uses in the Swanston TVSP project area, alteration of the character of the existing land uses from single-use commercial and light industrial parcels to mixed uses, and more open space in the form of greenways, mews, plazas, and promenades.

The Sacramento River is listed on the EPA's 1998 List of Impaired Waters; the stated impairments are associated with elevated mercury, diazinon, and unknown toxicity levels.[12] The Sacramento and American Rivers have been classified by the CVRWQCB as having numerous beneficial uses, 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. Ambient water quality in the Sacramento and American Rivers is influenced by agricultural drainage, mine drainage, urban runoff, and industrial, municipal, and construction discharges.

The proposed Swanston TVSP project would replace commercial and industrial land uses with mixed-use and residential land uses, resulting in a slight increase in developed land of about 10 percent. However, new land uses, in general, would be less pollutant loading than existing industrial land uses. Further, the proposed Swanston TVSP project contains a number of infrastructure improvements, policies and design guidelines to ameliorate the effects of stormwater runoff pollution. Therefore, future development that could occur within the Swanston TVSP project area is regarded as having a less than cumulatively considerable effect on water quality. As a result, cumulative water quality impacts would be less than significant.

HY-7. Dewatering activities and construction of the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the Sacramento River watershed, could affect groundwater resources, change the rate and/or direction of flow, and degrade groundwater quality. However, compliance with existing regulations, particularly the permitting requirements of the CVRWQCB, would reduce the project's contribution to this effect to less than cumulatively considerable. (LTS)

As described in Impact HY-3, the proposed Swanston TVSP project would have less-than-significant impacts on groundwater resources and quality. The Swanston TVSP project area is not in a location where groundwater recharge would be expected; improvements recommended by the proposed Swanston TVSP project would not be expected to encroach into the underlying North American Subbasin groundwater; and existing City regulations impose standards for dealing with dewatering. As a result of these factors, it is not expected that development in accordance with the proposed Swanston TVSP project would have a cumulatively considerable effect on groundwater resources or quality.

With the increase in impervious surfaces at urbanized areas throughout the region, groundwater recharge could also be adversely affected in the area, which, in combination with dewatering activities, could affect groundwater levels. However, as noted in the "Setting" section, the City of Sacramento, the CVRWQCB, and the Sacramento Groundwater Authority monitor and regulate development to avoid impacts to groundwater resources in the City and in the region.

[12] State Water Resources Control Board, Central Valley Regional Water Quality Control Board, *The Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region, The Sacramento River and San Joaquin River Basins (Fourth Edition)*, revised October 2007.

Because these regulations apply throughout the North American Subbasin, cumulative impacts to groundwater availability and quality are expected to be less than significant.

HY-8. Future development within the Sacramento River watershed would expose people and/or property to the risk of injury and damage in the event of a 100-year flood. However, because the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) is not located in a flood zone, it would not contribute to cumulative effects. (NI)

North Sacramento is protected by a series of flood control levees constructed and maintained along the American River to the south. Additional development within North Sacramento would increase people and property exposed to potential flooding as a result of failure of a levee. This is considered a significant cumulative impact. However, because the Swanston TVSP project area is located within the "Shaded X" flood zone, future development that could occur within the Swanston TVSP project area would not expose people and/or property to the risk of injury and damage in the event of a 100-year, or greater, flood. Therefore, the proposed Swanston TVSP project would not contribute to cumulative flood hazard impacts, and no cumulative impact would result with implementation of the proposed Swanston TVSP project.

HY-9. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City, would generate stormwater runoff that could exceed the capacity of the stormwater system. However, the project's contribution to this effect would be less than cumulatively considerable. (LTS)

The proposed Swanston TVSP project, in addition to other development within Basins 151 and 152, would increase the rate and volume of stormwater runoff into the City's drainage systems. If not properly controlled, this could result in an adverse cumulative increase in localized flooding. The infrastructure report and the earlier WYA report both acknowledge that development that could occur within the Swanston TVSP project area would have downstream, off-site impacts on the capacity of the storm drainage infrastructure. Similarly, although development in Basin 152 is currently served by privately provided storm drain improvements, future development could contribute to downstream impacts. Because funding for the basinwide improvements is uncertain, it is not clear whether the larger capital investments such as upsizing of the main storm drains or construction of the major detention facilities would be operational prior to development. Future development applications will need to conduct the necessary drainage studies to inform the City's Department of Utilities whether capacity constraints may result in localized flooding during the design storms required to be analyzed by the City. This assessment is part of the City's development review process. To the extent that development in Basins 151 and 152 could occur without the improvements identified in the WYA report or as recommended by individual development applications, future development could have a potentially significant cumulative stormwater management impact.

MITIGATION MEASURE. Implementation of either Mitigation Measure HY-5.1 or HY-5.2 identified for the proposed Swanston TVSP project would ensure that adequate stormwater

detention is provided by new development that could occur within the Swanston TVSP project area prior to occupancy. These same measures would be applied throughout Basins 151 and 152, as conditions of project approval, to ensure that each individual project's contribution to stormwater runoff would be reduced. Therefore, the contribution of the proposed Swanston TVSP project would be less than cumulatively considerable. (LTS)

6.8 NOISE

Introduction

This section describes the existing ambient noise and vibration environment in the Swanston TVSP project area and the potential for development under the proposed Swanston TVSP project to significantly increase noise levels. The projected change in noise levels from changes in vehicular traffic and operation of a transit center is predicted and assessed relative to existing noise levels. Noise from heavy rail and light rail operations on the Union Pacific and Sacramento Regional Transit tracks are recognized as part of the background noise environment, but neither is expected to change as a result of the proposed Swanston TVSP project. Vibration impacts are seldom-perceptible problems for land development projects, unless heavy truck or equipment activities are planned. However, groundborne vibration is generally discussed for information purposes.

The analysis included in this section was developed based on a field investigation to measure existing noise levels, noise standards in the City of Sacramento 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 (FTA)'s *Transit Noise and Impact Assessment* document. Traffic inputs for the noise prediction model were provided by the transportation consultant, Kimley-Horn and Associates.

No comments pertaining to noise issues were received during circulation of the NOP.

Setting

Fundamentals 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, in reporting measurements to which

A-weighting has been applied, an "A" is appended to dB (i.e., dBA) to make this clear. Table 6.8-1 lists representative environmental sound levels.

Table 6.8-1
Representative Environmental Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet		
	—100—	
Gas Lawnmower at 3 feet		
	—90—	
		Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime		
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
		Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
		Theater, Large Conference Room
Quiet Urban Area during Nighttime	—40—	(background)
Quiet Suburban Area during Nighttime		
	—30—	Library
		Bedroom at Night, Concert Hall
Quiet Rural Area during Nighttime		(background)
	—20—	
		Broadcast/Recording Studio
	—10—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

Source: California Department of Transportation, *Technical Noise Supplement*, October 1998.

Noise. Noise is the term generally given to the "unwanted" aspects of intrusive sound. Many factors influence how a sound is perceived and whether 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.

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 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. Common vibration sources and the human and structural response to ground-borne vibration are illustrated in Figure 6.8-1.

Accurate estimates of ground-borne vibration are complicated due to the many factors that influence vibration levels at potential receivers. 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.[1]

[1] U.S. Department of Transportation Federal Railroad Administration, *High-Speed Ground Transportation Noise and Vibration Impact Assessment*, October 2005, pp. 6-7.

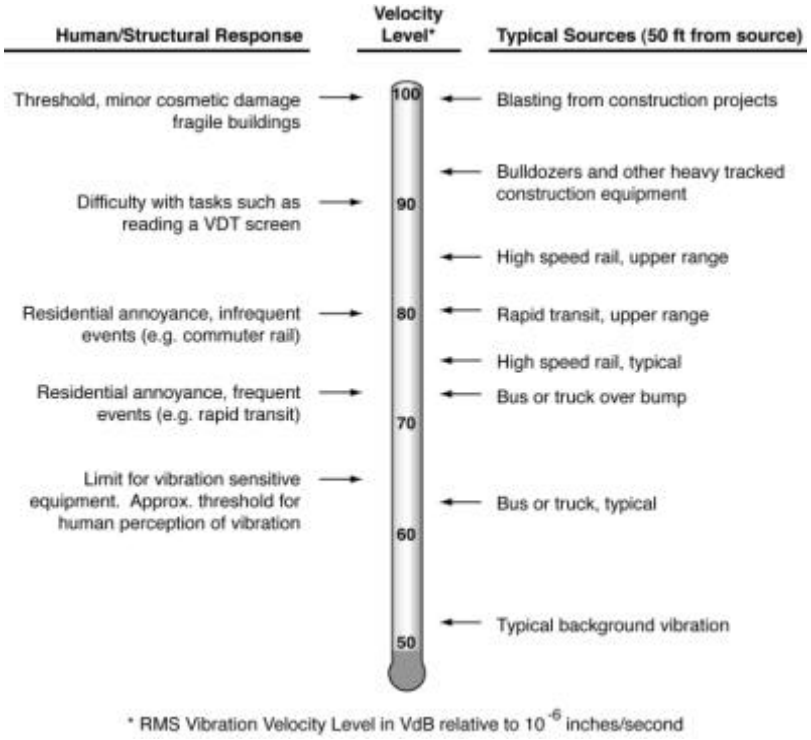


Figure 6.8-1 Typical Levels of Ground-Borne Vibration

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

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 land uses in the Swanston TVSP project area include heavy industrial, commercial, single-family residential, multi-family residential and vacant parcels. The Sacramento Regional Transit and Union Pacific (UP) rail lines divide the Swanston TVSP project area into two distinct subareas. The area to the east contains several large office buildings (USAA Insurance, Hilton Hotel, and Cal Plaza I). The area to the west contains relatively low density single-story residential and commercial/industrial buildings and vacant parcels. Surrounding land uses consist of industrial, office/commercial, and residential to the north and south, residential to the west, and industrial and office/commercial uses to the east. Sensitive receptors in the project vicinity include residential uses within the Swanston TVSP project area, as well as residential uses and schools in the surrounding areas.

Noise Background Levels

The primary sources of noise activity in the Swanston TVSP project area are vehicles, passing trains, buses, and truck traffic serving the industrial uses in the area. The greatest source of short-term noise is heavy rail traffic along the UP track. Transit service in the Swanston TVSP project area is provided at two light rail stations and several bus stops. According to Sacramento Regional Transit District that operates rail and bus transit services in Sacramento, Swanston Light Rail Station has an average of 228 passenger boardings per day.[2] The Royal Oaks Light Rail Station is immediately outside the southwest corner of the Swanston TVSP project area and offers riders in the vicinity another option for traveling from North Sacramento to downtown Sacramento. Bus routes 20, 23, and 25 travel along Arden Way through the Swanston TVSP project area.

The Northeast Corridor Service and Facilities Enhancement IS/EA, which studied light rail and bus improvements in the Swanston TVSP project area (2002), included noise measurements for three locations within the Swanston TVSP project area: the Lumberjack Hardware Store (now closed and proposed for redevelopment), the northeast edge of Swanston Station, and on the Swanston Station light rail transit (LRT) platform. Noise levels at these locations are presented in Table 6.8-2, below, and are representative of locations within the Swanston TVSP project area that would be exposed to noise from the primary noise sources. Noise levels were monitored at these locations using a Larson-Davis Laboratories Model 720 precision sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. Each of these locations is described below.

Table 6.8-2
Existing Ambient Noise Levels at Noise Monitoring Locations

Noise Monitoring Location	Scenario	Distance to LRT Tracks	L_{eq}	L_{min}	L_{max}
Location 1:	With LRT Train	250 feet	61.8	47.3	74.1
Lumberjack Site	Without LRT Train		63.9	47.3	80.6
Location 2:	With LRT Train	75 feet	65.3	53.6	71.5
Northeast edge of Swanston Station	Without LRT Train		55.5	48.4	71.6
Location 3:	With LRT Train	33 feet	73.8	52.6	82.2
Swanston LRT Station platform	Without LRT Train		70.8	50.3	84.9

Source: EIP Associates, 2002.

- **Location 1** is the parking lot of the former Lumberjack Hardware Store, approximately 250 feet from the LRT track. The primary sources of noise at this location are vehicular traffic on Arden Way and activity within the parking lot and lumber yard. Noise levels monitored during an LRT pass-by were lower than the non-LRT average condition due to a temporary reduction in parking lot and lumber yard activities during that time period. This apparent anomaly

[2] Bay Area Economics, Swanston Station Village Market Analysis, March 3, 2006, page 2.

indicates that LRT activities have very little effect on the existing average daily noise levels at this location.

- **Location 2** is the northeastern edge of the Swanson Station, approximately 75 feet from the LRT track. The primary sources of noise at this location are automobiles and human activity at the LRT station and within the nearby residential area. The area to the immediate north of the LRT station is currently being graded, which adds to the current noise levels at this location. The greatest (maximum) short-term source of noise at this location is heavy rail traffic (i.e., Amtrak and freight trains) along the Union Pacific tracks, which is approximately 300 feet from this location.

- **Location 3** is the platform of the Swanston Station, approximately 33 feet from the LRT track and within 300 feet of the Union Pacific tracks. The primary sources of noise at this location are automobiles and human activity within the station parking lot and LRT stops. The greatest (maximum) short-term source of noise at this location is heavy rail traffic (i.e., Amtrak and freight trains) along the Union Pacific track.

The results of the noise level survey indicate that LRT trains are relatively quiet (less than 60 dBA L_{eq} at 50 feet from the LRT tracks) when operating.[3] This is because they are powered by electricity and because they operate on welded tracks. The noise levels are evident for very brief periods of 10 to 15 seconds during a train pass-by. The LRT stations are also relatively quiet (below 60 dBA L_{eq}) and do not include any excessive or unusual noise sources.

Vibration Background Levels

Background vibration velocity levels in residential areas are usually 50 VdB or lower. They are typically higher in commercial/industrial areas, but in most cases are well below the threshold of perception for humans, which is around 65 VdB. Human response to vibration is not usually significant unless the vibration level exceeds 70 VdB.

Vibration is seldom a primary concern except for cases where vibration-sensitive land uses are located near strong vibration sources (e.g., construction sites, major truck routes, light or conventional rail lines, etc.). Trucks and buses at 50 feet generally exhibit velocity levels of 62 VdB, which is below the threshold of perception. Buses or trucks going over a bump and light rail systems can reach 70 VdB at 50 feet, high enough to be noticed. Since a sensitive land use, housing, is proposed near a heavy rail system as part of the proposed Swanston TVSP project, this section focuses on vibration characteristics along the UP and Sacramento Regional Transit rail lines.

Groundborne vibration from rail systems is a function of distance from receiver to the tracks, vehicle speed, type of track support, number of vehicles in a train, and site soil characteristics. Bedrock or soils that contain substantial quantities of rock transmit both low and high frequency vibration, while

[3] EIP Associates, Northeast Corridor Service and Facilities Enhancement IS/EA, January 4, 2002; and County of Sacramento, Noise Element of the County of Sacramento General Plan, 1990.

soft sandy soils, clays, and silt absorb vibration.[4] In the Swanston TVSP project area, the LRT system is already double tracked near residential areas. The LRT trains are relatively light (compared to locomotives), they are powered by electricity, and the tracks are welded rather than bolted. Because of these factors, RT's rail operations generate no noticeable groundborne vibration in areas other than the immediate proximity of the tracks. In particular, screening criteria developed by the Federal Transit Administration (FTA) suggest that vibration impacts would not be a concern for sensitive land uses (such as residences) if they are greater than 50 feet from bus routes and berths, 150 feet from LRT tracks or 200 feet from conventional train tracks.[5]

Applicable Plans and Policies

Federal

The Federal Noise Control Act (1972) addresses 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*.[6] 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.

The FTA has also developed criteria for judging the significance of noise and ground-borne vibration from transportation sources, as shown in Tables 6.8-3a and 6.8-3b, respectively.

State

General Plan Guidelines. The *State of California General Plan Guidelines 2003* promotes use of the L_{dn} or CNEL descriptors for evaluating land use - noise compatibility. Noise compatibility is defined in terms of acceptable (or unacceptable) ranges of decibels. Denotation of a land use as "normally acceptable" implies that the highest noise level in that range 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. See description below under "Local," for specific information related to the City of Sacramento.

---

4 Sacramento Regional Transit District, Antelope Light Rail Extension Environmental Impact Report, SCH #91112070, April 1992.

5 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006, Table 9-2, page 9-4.

6 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.

Table 6.8-3a
Screening Distances for Noise Assessments

Type of Project		Screening Distance[a] (feet)	
		Unobstructed	**Intervening Buildings**
Commuter Rail Mainline		750	375
Commuter Rail Station	With Horn Blowing	1,600	1,200
	Without Horn Blowing	250	200
Light Rail Transit		350	175
Bus Facilities	Access Roads	100	50
	Transit Center	225	150

Source: Federal Transit Administration, *Transit Noise Impact and Vibration Assessment,* May 2006, Table 4-1, page 4-3.

Note:

a. Measured from centerline of guideway/roadway for mobile sources; from center of noise-generating activity for stationary sources.

Table 6.8-3b
Screening Distances for Vibration Assessments

Type of Project	Critical Distances for Land Use from Right-of-Way or Property Line (feet)	
	Residential Land Use[a]	**Institutional Land Use[b]**
Conventional Commuter Railroad	200	120
Light Rail Transit	150	100
Bus Projects[c]	50	----

Source: Federal Transit Administration, Transit Noise Impact and Vibration Assessment, May 2006, Table 9-2, page 9-4.

Notes:

a. Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

b. Institutional land uses with primarily daytime and evening uses. 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. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds, and recreational facilities can also be considered in this category. Certain historical sites and parks are also included.

c. This category encompasses most projects that do not include steel-wheel trains of some type (e.g., a transit center that accommodates only diesel buses or electric trolley buses).

Title 24. Title 24 of the California Code of Regulations codifies Sound Transmission Control requirements, which establish 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 ten years from the time of building permit application.

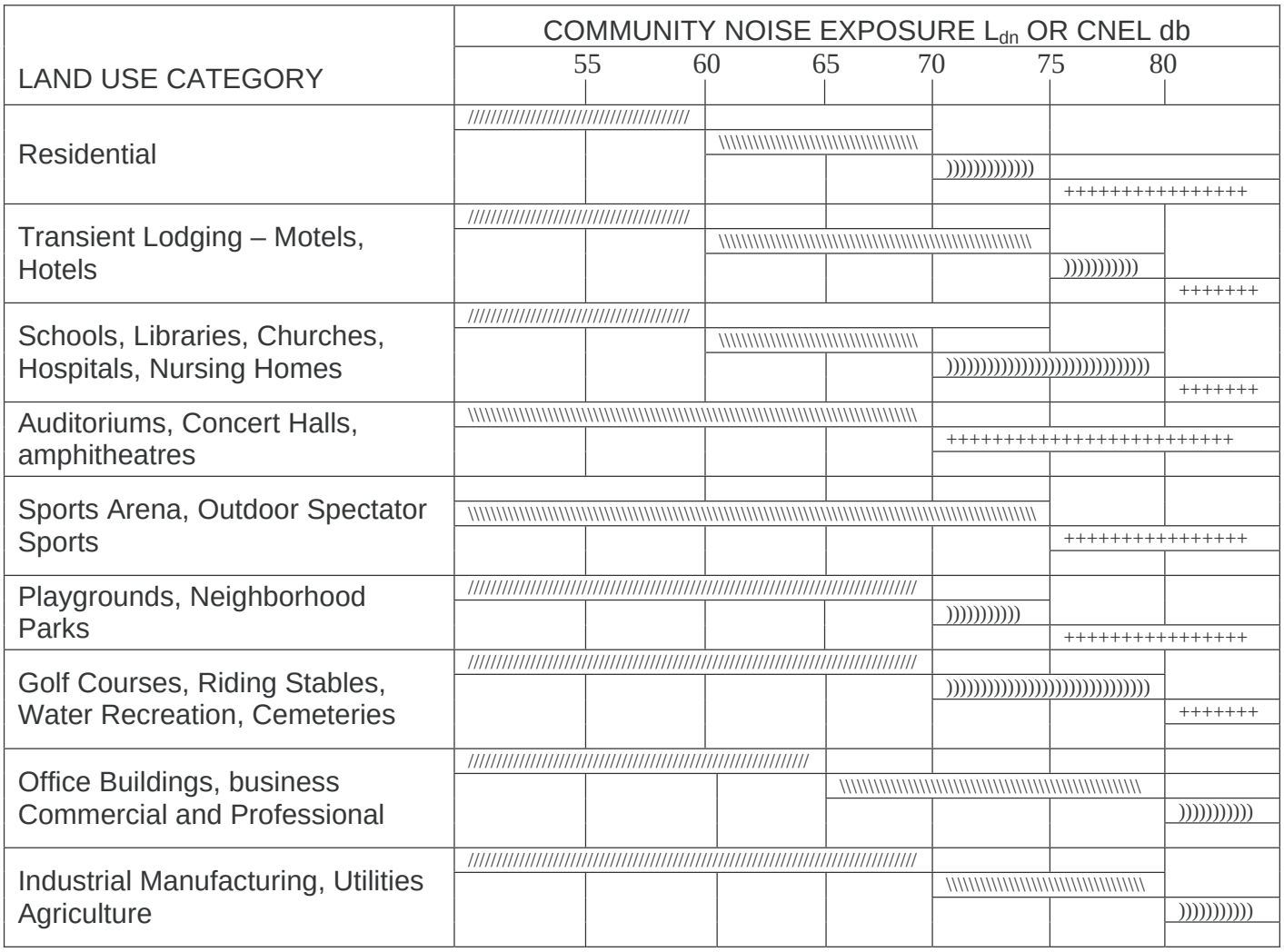
Local

City of Sacramento 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 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 6.8-2a and 6.8-2b. The land use compatibility standards presented in Figure 6.8-2a are very similar to those in the State *General Plan Guidelines*, the only difference being that the acceptable range of noise levels for the different compatibility categories does not the lack of overlap.

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.

Each goal in the existing General Plan is implemented by a number of corresponding policies. The following goals and policies from the Noise Element are applicable to the proposed Swanston TVSP project:

> **Goal A:** Future development should be compatible with the projected year 2016 noise environment.
>
> > *Policy 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 [see Figure 6.8-2a in this section]. 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.



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 shouldbe discouraged. If new construction ordevelopment 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 **6.8-2a**

Land Use Compatibility for Community Noise Environments

Noise Source	Land Use	Applicable Area: Interior	Applicable Area: Exterior	State Requirements	Noise Element Requirements
Traffic or fixed source (Industrial, plants, etc.)	Single Family	X	X	None	L_{dn} < 45 db[2]
	Single Family		X	None	$L_{dn} \leq$ 60 dB in backyards
	Multi-Family[1]	X		L_{dn} < 45 dB	L_{dn} < 45 dB
	Multi-Family		X	None	$L_{dn} \leq$ 60 dB in common outdoor use areas
	Schools	X		None	Noisiest hourly $L_{eq} \leq$ 40 dB during school day
	Schools		X	None	$L_{dn} \leq$ 60 dB
	Libraries	X		None	Noisiest hour $L_{eq} \leq$ 45 dB
	Libraries		X	None	None
Aircraft	Single-Family	X		None	$L_{dn} \leq$ 45 dB and maximum instantaneous levels of $\leq$ 50 dBA in bedrooms and $\leq$ 55 dBA in other habitable rooms[2]
	Single-Family		X	CNEL $\leq$ 65 dB (State Aeronautics Noise Standards) requirement does not apply to Mather and McClellan AFB	CNEL $\leq$ 60 dB for Metro Airport CNEL $\leq$ 65 dB for all others
	Multi-Family	X		$L_{dn} \leq$ 45 dB	$L_{dn} \leq$ 45 dB and maximum instantaneous levels of $\leq$ 50 dBA in bedrooms and $\leq$ 55 dBA in other habitable rooms[2]
	Multi-Family		X	CNEL $\leq$ 65 dB (State Aeronautics Noise Standards) requirement does not apply to Mather and McClellan AFB	CNEL $\leq$ 60 dB for Metro Airport CNEL $\leq$ 65 dB for all others
	Schools	X		None	Noisiest hourly $L_{eq} \leq$ 40 dB during school day
	Schools		X	CNEL $\leq$ 65 dB (State Aeronautics Noise Standards) requirement does not apply to Mather and McClellan AFB	CNEL $\leq$ 60 dB for Metro Airport CNEL $\leq$ 65 dB for all others
	Libraries	X		None	Noisiest hour $L_{eq} \leq$ 45 dB
	Libraries		X	None	None
Rail Traffic	Single-Family	X		None	$L_{dn} \leq$ 45 dB and maximum instantaneous levels of $\leq$ 50 dBA in bedrooms and $\leq$ 55 dBA in other habitable rooms[2]
	Single-Family		X	None	$L_{dn} \leq$ 60 dB
	Multi-Family	X		$L_{dn} \leq$ 45 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 dB and maximum instantaneous levels of $\leq$ 50 dBA in bedrooms and $\leq$ 55 dBA in other habitable rooms[2]
	Multi-Family		X	None	$L_{dn} \leq$ 60 dB
	Schools	X		None	Noisiest hourly $L_{eq} \leq$ 40 dB during school day
	Schools		X	None	Maximum instantaneous levels $\leq$ 85 dBA
	Libraries	X		None	Noisiest hour $L_{eq} \leq$ 45 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 **6.8-2b**

Maximum Acceptable Interior and Exterior Noise Levels for New Development without Mitigation

Policy 2: Require mitigation measures to reduce noise exposure to the "Normally Acceptable Levels" (Figure 3) [see Figure 6.8-2a in this section] 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.

Policy 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 [see Figure 6.8-2a in this section]. 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.

Policy 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. Enforcement of the Sacramento Noise Ordinance is the control method choice for 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 [see Figure 6.8-2a in this section].

Policy 2: Encourage the incorporation of the latest noise control technologies in all projects.

City of Sacramento Municipal Code. The Sacramento Municipal Code also contains regulations concerning noise in Title 8 – Health and Safety, Chapter 8.68 – Noise Control. Not all of these regulations are applicable to the proposed Swanston TVSP project. Of the applicable regulations, 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

Arden Arcade and North Sacramento Community Plans. The eastern portion of the Swanston TVSP project area is located within the Arden Arcade Community Plan Area. The Arden Arcade Community Plan area land use is governed by the 1988 City of Sacramento General Plan and the 1993 Sacramento County General Plan as amended through 2004. The Arden Arcade Community Plan includes boundaries, but does not have separate policies or land use diagrams.

The western portion of the Swanston TVSP project area is within the North Sacramento Community Plan area. The purpose of the North Sacramento Community Plan is to serve as a development guide to be used by the public and private sector when planning physical improvements in North Sacramento. The following policies from the North Sacramento Community Plan section on Railroads are applicable to the proposed Swanston TVSP project.

> **Goal:** Designate land uses adjacent to freight rail lines which are tolerant or can be designed to withstand high noise levels.
>
> > *Objective:* Avoid placement of noise sensitive land uses adjacent to the Western Pacific and Southern Pacific [now Union Pacific] Railroad lines that form the western and eastern borders of the North Sacramento Community.

Impact Assessment and Mitigation Measures

Methods of Analysis

Construction Noise. Construction noise was assessed 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 could be included in any construction in the Swanston TVSP project area.

Traffic and Rail Noise. Analyses of existing and future noise environments were based on noise level monitoring and noise prediction modeling. Traffic noise levels from the Interstate 80 (I-80) Business Loop were modeled using the Federal Highway Administration (FHWA) Traffic Noise Model Version

2.5 (TNM), while for local roads 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 transportation consultant. 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 D.

Noise levels from future light rail operations and UP train operations through the Swanston TVSP project area were estimated using FTA's noise screening procedure with best estimates of the number of trains per day, number of cars per train, and average speeds, based on information from the project description or obtained from UP.

Vibration. To assess vibration impact significance for the Swanston TVSP project area, the vibration analysis applied the procedure described in the FTA Guidance Manual for screening separately to the LRT tracks and the UP rail line. The screening distances for potential vibration impacts are listed in Table 6.8-3b. These criteria are more conservative than City standards, which are intended to prevent structural damage by limiting vibration peak particle velocities to 0.5 inches per second for residential and commercial uses, and to 0.25 inches per second for historic buildings and archaeological sites. Thus, the buffer areas identified in Table 6.8-3b would be more than sufficient to guarantee compliance with the City thresholds.

Standards of Significance

A significant impact would occur if the proposed Swanston TVSP 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; or
- Result in construction noise levels that exceed the standards in the City of Sacramento Noise Ordinance.
- Cause vibration-sensitive receptors to experience vibration peak particle velocities of 0.5 inches per second at residential and commercial structures or 0.25 inches per second at historic buildings and archeological sites.[7]

[7] Compliance with these criteria would be assured as long as project-related vibration-sensitive uses would be located outside the screening distances defined in Table 6.8-3b.

Environmental Analysis

The impacts described below address proposed development that could occur within the Strategic Plan area through the Year 2025, and proposed development that could occur within the Long-Term Plan area through the Year 2050. The primary temporary or short-term source of noise associated with the proposed Swanston TVSP project would be construction activities. Construction noise could affect existing receptors, as well as possibly newly created receptors. Construction-related impacts would be similar regardless of whether the impacts occurred within the Strategic Plan area or the Long-Term Plan area. On the other hand, operational noise impacts would be a function of the land development and traffic patterns, which differ between the Strategic Plan area and the Long-Term Plan area. Permanent noise increases that would occur in the Swanston TVSP project area would be generated by an increase in traffic volumes associated with project-related trips and an increase of train activity, which would not be attributable to the project but would be the result of Amtrak and Sacramento Regional Transit District's operational plans. Secondary sources of noise would include the heating, ventilation, and air conditioning units that would be part of the new development associated with the proposed Swanston TVSP project.

In order to determine noise impacts due to construction and operation of the proposed Swanston TVSP project, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant impacts to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section NO, refers to Noise.

Construction-Related Impacts (applicable to development that could occur within both the Strategic Plan and Long-Term Plan areas)

NO-1. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would temporarily expose existing sensitive receptors to increased noise levels during the short-term construction periods associated with that development. (LTS)

Implementation of the proposed Swanston TVSP project would result in land use changes within both the Strategic Plan and Long-Term Plan areas. The construction activity associated with development that could occur under the proposed Swanston TVSP project would result in noise levels greater than current ambient noise levels. These increased noise levels would result from the operation of heavy-duty equipment and various other demolition and construction activities. Construction noise levels were estimated using FTA methodology, with the results shown in Table 6.8-4.

As discussed above, there are sensitive uses adjacent to and within the Swanston TVSP project area, specifically residential neighborhoods. Construction noise would affect surrounding uses to varying degrees dependent on the size of the development and associated construction activities, construction methods and equipment employed, and the construction schedule of subsequent development projects. Construction noise could be as high as 107 dBA L_{eq} from

Table 6.8-4
Typical Construction Noise Levels for Construction Equipment (in dBA)

	8-hour L_{eq}		
Construction Equipment	**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			
Pile Driver	107	101	97.5
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

Source: PBS&J, 2007.

Note:

Noise levels calculated from equations defined by the Federal Transit Administration's Transit Noise and Vibration Impact Assessment document, May 2006, pp. 12-2 to 12-7.

pile driving at 25 feet from the source. 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 must occur, construction noise would not be expected to disturb the sleep of nearby residents. Office and commercial uses in the vicinity of the Swanston TVSP project area would be open during the day when construction would occur. 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 6.8-4) would be higher than what would actually be experienced within residential and commercial structures in the vicinity of the Swanston TVSP project area.

Because development that could occur within the Strategic Plan area would be constructed through the year 2025, and subsequent development within the Long-Term Plan area could occur until 2050, residential uses that could be constructed earlier as part of the proposed Swanston TVSP project could, themselves, be exposed to construction noise that could occur later from development within the Swanston TVSP project area, due to their close proximity to construction activity. Construction noise would affect sensitive residential and recreational uses within the Swanston TVSP project area to varying degrees depending on scale of the construction activities, the construction methods and equipment employed, and the construction schedule for the development. Construction noise could be as high as 107 dBA L_{eq} from pile driving at 25 feet from the source.

Because project construction activities would be limited to hours defined as appropriate for construction, by the Sacramento Municipal Code, the noise produced from these activities would be exempt from the exterior noise limits at residential properties set by the Sacramento Municipal Code. Therefore, project construction noise would be in compliance with the City's Noise Control Ordinance, and this impact would be considered less than significant.

NO-2. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area) would temporarily increase levels of ground-borne vibration as a result of construction activities associated with the development. (PS)

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 6.8-5 shows typical vibration levels for construction equipment.

Table 6.8-5
Typical Vibration Levels for Construction Equipment

Construction Equipment	PPV (in./sec.) 25 Feet	100 Feet	200 Feet	400 Feet	Approximate VdB at 25 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, p. 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. Historic buildings or archeological sites would be at risk if the vibration peak particle velocities were greater than 0.25 inches per second. As shown in Table 6.8-5, the radius of effect for structural damage would be very limited, no more than 100 feet for pile driving and 25 feet or less for other equipment. According to Section 6.4, Cultural Resources, there are currently no known historic buildings located within or adjacent to the Swanston TVSP project area, although there are several that are potentially eligible, pending further research. Notwithstanding this finding, by the time development that could be constructed later within the Swanston TVSP project area is built out (presumed to occur through 2025 within the Strategic Plan area, and through 2050 within the Long-Term Plan area), there may be newly eligible historic buildings. Vibration from construction equipment could affect both historical and non-historical buildings, specifically from pile driving, if required for some construction projects. This impact is considered potentially significant.

MITIGATION MEASURES. Implementation of the following mitigation measures would reduce construction-related vibration impacts; however, the impact could remain significant and unavoidable. (SU)

NO-2.1 *Vibration Reduction Practices for Pile Driving*. For pile driving within 100 feet of an existing building, project applicants shall implement vibration reduction practices, such as drilling pilot holes for piles, to the extent feasible, prior to commencement of impact pile driving. Prior to issuance of a building permit, project applicants shall submit to the City for approval a report specifying the vibration reduction practices that will be implemented and the estimated vibration reduction potential of such practices.

Strategic Plan Area – Year 2025

NO-3. Development that could occur within the Strategic Plan area would permanently expose sensitive receptors to increased noise levels; however, the predicted increase in noise levels would not be expected to exceed the City's noise standards. (LTS)

Noise exposure in the Swanston TVSP project area is expected to result from traffic on local roadways, traffic on the nearby Capital City Freeway (I-80 Business Loop), and activity on the rail lines that traverse the area. Each of these noise sources is described below, along with the potential to adversely affect sensitive receptors in and around the Swanston TVSP project area.

Traffic Noise from Local Roadways. Existing sensitive noise receptors that would be affected by development in the Swanston TVSP project area are primarily residential uses along El Camino Avenue, Arden Way, Evergreen Street, Dixieanne Avenue, Calvados Avenue, and Auburn Boulevard (at Frienza Avenue). Many of the homes along these local roads are single-family homes built close to the street. In addition, many of the homes are more than 30 years old and would not have used modern construction techniques that help insulate a building from high exterior noise levels. Most of these receptors are already exposed to relatively high existing traffic noise from local roads. Transportation improvements completed within the Strategic Plan area (e.g., bulb-outs, traffic circles, and installation of sidewalks and possibly a signal along Evergreen Street, Dixieanne Avenue, Calvados Avenue, and Arden Way) could change noise levels and exposure patterns in the area. Additionally, the proposed Swanston TVSP project would encourage additional residential development that would be exposed to noise from these improvements. The City of Sacramento General Plan's exterior noise standard for backyards and common outdoor areas of residential uses and for school sites is 60 dB L_{dn}, for neighborhood parks, 70 dB L_{dn} and for other uses, see Figure 6.8-2a.

Table 6.8-6 shows the existing peak-hour Leq (dBA) at five receptor locations that have the potential to be affected by development that could occur within the Strategic Plan area. These locations were chosen based on their proximity to existing residential uses or because of their proximity to proposed residential uses. 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.[8] Two of the receptors currently experience noise levels from traffic that are above the City's 60 dB L_{dn} exterior noise standard: El Camino Avenue and Arden Way. However, as shown in Table 6.8-6, only one of the five receptor locations would experience an increase in noise as a result of traffic associated with development that could occur within the Strategic Plan area. That single receptor's noise level increase would be 0.4 dB, and would occur at a location north of the Woodlake neighborhood on Arden Way. The other locations experience a decrease in noise levels. This finding is consistent with the projection that the development that could occur within the Strategic Plan area would result in 1,332 fewer vehicle trips than under existing conditions, thereby reducing

[8] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006, p. D-4.

the noise levels associated with traffic. The traffic projections upon which this noise assessment is based are summarized in Section 6.11, Transportation, of this document.

Table 6.8-6
Traffic Noise Levels With and Without the Proposed Swanston TVSP Project

		Peak-Hour Noise Levels (dBA)[a]			
Receptor	Roadway Segment	Existing	Baseline	Baseline Plus Project	Increase[b]
El Camino Avenue	El Camino Avenue, west of Van Ness Street (in Long-Term Plan area)	74.2	74.3	74.1	-0.1
Arden Way	Arden Way, west of Royal Oaks Drive (just west of Strategic Plan area)	74.2	74.7	74.6	0.4
Dixieanne Avenue	Dixieanne Avenue, east of Evergreen Street (in Strategic Plan area)	60.1	60.2	60.0	-0.1
Evergreen Street	Evergreen Street, north of Calvados Avenue (in Strategic Plan area)	64.0	64.1	63.4	-0.6
Van Ness Street	Van Ness Street, north of El Camino Avenue (just north of Long-Term Plan area)	65.3	65.4	65.3	0.0

Source: PBS&J, 2007.

Notes:

a. Noise levels were calculated based on peak-hour traffic volumes provided by Kimley-Horn and Associates, Inc. PM peak-hour traffic volumes were used for all roadway segments, where the PM peak hour represented the worst-case noise level increase.

b. Increase in noise levels was obtained by comparing Existing noise levels with Baseline Plus Project noise levels to get a true assessment of the increase from existing conditions, even though baseline takes into account other projects in the vicinity.

Since the contribution of additional traffic from development that could occur within the Strategic Plan area would cause incremental changes in noise levels of less than 1 dB, which in many cases would be negative, thereby reducing noise from existing levels, impacts to sensitive receptors due to traffic increases on local roadways are considered less than significant.

Traffic Noise from I-80 Business Loop. Freeways, such as the I-80 Business Loop, can also contribute traffic noise levels to sensitive receptors in the Swanston TVSP project area. Because the residentially zoned areas within the Strategic Plan area are more than 2,000 feet away from the I-80 Business Loop, noise levels associated with freeway traffic would not significantly affect development that could occur within the Strategic Plan area. Therefore, noise exposure from this noise source would be less than significant for new residential uses that could be developed within the Strategic Plan area.

Light Rail Transit and Rail Operations. Sacramento Regional Transit and Union Pacific rail operations can also contribute noise levels to sensitive receptors in the vicinity of the proposed Swanston TVSP project. The southern boundary of the Strategic Plan area would be located

adjacent to the planned realignment of the Sacramento Regional Transit light rail tracks, in an area known as Lumberjack Curve. However, land uses located immediately adjacent to this section of LRT rail line are proposed to be general commercial uses which are not considered to be sensitive uses.

Proposed residential mixed use that could be developed within the Strategic Plan area would be as close as approximately 800 feet from the Union Pacific railroad line, which currently averages 64 freight and Amtrak trains per day. According to the FTA's screening distances for railway noise assessments, a sensitive receptor would need to be approximately 375 feet from the route with intervening structures in between to attenuate noise to an acceptable level.[9] Since the closest proposed residential would not be within 375 feet of the Union Pacific railroad line, neither FTA nor City criteria (i.e., exterior 60 dBA L_{dn}; interior 45 dBA L_{dn}) would be exceeded. Thus, train noise impacts from freight and Amtrak trains traveling on the Union Pacific tracks would be less than significant.

An Amtrak station is being considered to co-locate with the Swanston Light Rail Station. This proposal is an Amtrak project, not a City project and it is not recommended as part of the proposed Swanston TVSP project. Impacts that might result from co-locating an Amtrak station next to the Swanston Light Rail Station would be subject to environmental review by the sponsor of the Amtrak station.

Residential mixed use that could be developed within the Strategic Plan area is proposed approximately 700 feet from the LRT rail line, which currently averages four trains per hour. According to the FTA's screening distances for noise assessments, receptors farther than 175 feet would not exceed FTA standards.[10] Thus, exterior noise levels from the LRT trains would be less than FTA and City thresholds. Homes built within the last 30 years generally provide an exterior-to-interior reduction up to about 30 dB with closed windows. Thus, interior noise from the LRT rail line would also be below the City's threshold. Thus, LRT noise impacts would be considered less than significant.

Residential mixed use that could be developed within the Strategic Plan area is proposed approximately 400 feet from the proposed transit center. According to the FTA's screening distances for noise assessments, receptors farther than 150 feet would not exceed FTA standards.[11] Thus, exterior noise levels from the activity at the transit center would be less than FTA and City thresholds. Thus, transit center noise impacts would be considered less than significant.

---

[9] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006, Table 4-1, pp. 4-3 and 4-4.

[10] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006, Table 4-1, pp. 4-3 and 4-4.

[11] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006, Table 4-1, pp. 4-3 and 4-4.

NO-4. Development that could occur within the Strategic Plan area could permanently expose sensitive receptors to increased noise produced by on-site stationary sources. (PS)

Future development that could occur within the Strategic Plan area would introduce new stationary noise sources such as heating, ventilation and air conditioning (HVAC) equipment, garbage pickup activity, and truck delivery activity at residential and commercial building loading docks.

HVAC systems would be installed to service future residential and commercial buildings that could be developed within the Strategic Plan area. 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. Residential HVAC units are regulated under City Code Section 8.86.110; there are no comparable restrictions for non-residential uses.

On-site truck activity would be associated with garbage pickup and deliveries to residential and commercial buildings that could be developed within the Strategic Plan area. At this early stage of the project design/review process, the expected number of garbage pickups, other truck deliveries, types of trucks, truck circulation routes, and anticipated delivery times are not available. However, as the allowable uses for the Swanston TVSP project area include large commercial warehouse uses, it is possible that deliveries would be performed by large trucks. Also, there is a potential for other, smaller commercial and retail buildings that could have loading areas close enough to affect nearby residential or other noise-sensitive land uses. Sacramento City Code 8.68.130 contains restrictions on noise emissions from waste disposal vehicles and/or garbage loading and composting equipment.

Noise impacts from these activities would be localized and their noise emissions would be regulated under City Code, but nearby sensitive receptors (i.e., residential areas and schools) could be affected. Due to the possibility that noise from existing and proposed HVAC machinery and truck activity sources could exceed City noise standards for existing and proposed residential uses that could occur within the Strategic Plan area, this impact is considered to be potentially significant.

MITIGATION MEASURES. Implementation of the following mitigation measures, where specified by each individual project's CEQA review or as established through project review prior to the issuance of a building permit, would substantially reduce predicted noise levels at noise sensitive receptors by requiring appropriate noise attenuation devices and/or placement of noise-emitting equipment to ensure that operational stationary noise levels would not exceed the requirements of the appropriate provisions of the Sacramento General Plan or Municipal Code. As a result, residual noise impacts from such stationary sources would be reduced to a less-than-significant level. (LTS)

NO-4.1 HVAC Noise Control. Prior to the issuance of building permits, development applicants shall submit engineering and acoustical specification for a project's mechanical HVAC equipment to the Planning Director demonstrating that the equipment will control its noise emissions to the degree specified under the appropriate provision of the Sacramento General Plan or Municipal Code.

NO-4.2 Garbage Disposal and Loading Dock Noise Reduction. Garbage storage areas and building loading docks shall be sited to allow adequate separation or shielding to protect adjacent noise-sensitive uses from noise emissions associated with truck pickup and delivery activity. Prior to the issuance of building permits, the project applicants shall submit acoustical studies to the Planning Director demonstrating that noise emissions from truck activities will be controlled to the degree specified by the appropriate provisions of the Sacramento General Plan or Municipal Code.

NO-4.3 Other Stationary Source Noise Reduction. Noise generating stationary equipment associated with proposed commercial uses, including portable generators, compressors, trash compactors, etc. shall be enclosed or acoustically shielded to reduce noise-related impacts to nearby noise-sensitive uses. Prior to the issuance of building permits, the project applicants shall submit acoustical studies to the Planning Director demonstrating that noise emissions from all significant on-site stationary sources of noise will be controlled to the degree specified by the appropriate provisions of the Sacramento General Plan or Municipal Code.

NO-5. Development that could occur within the Strategic Plan area would not be expected to expose sensitive receptors to excessive vibration levels. (LTS)

Sources of vibration that would most affect development that could occur within the Swanston TVSP project area consist of the UPRR tracks, the LRT tracks and the proposed transit center, which are approximately 800 feet, 700 feet, and 400 feet, respectively, from the closest proposed residential development along Green Street. Land uses proposed closest to the LRT tracks would be residential and commercial uses permitted by the RMX-TO and the C-2-TO zoning districts. Since these proposed residential land uses would be located greater than the 200-foot, 150-foot and 50-foot FTA vibration screening distances (see Table 6.8-3b) for commuter rail, light rail and bus projects, respectively, vibration impacts to development that could occur within the Strategic Plan area would be less than significant.

Long-Term Plan Area – Buildout

NO-6. Development that could occur within the Long-Term Plan area could expose sensitive receptors to increased noise levels. (PS)

Traffic from Local Roadways. According to the traffic analysis prepared for this EIR (see Section 6.11, Transportation), total traffic levels associated with the proposed Swanston TVSP project are projected to decrease by about 7,300 daily vehicle trips, compared to the number of

vehicle trips that could occur under existing zoning. This includes a drop of 1,332 daily vehicle trips from development that could occur within the Strategic Plan area, and a further decrease of nearly 6,000 daily vehicle trips from development that could occur within the Long-Term Plan area. Thus, development that could occur within the Long-Term Plan area would in many cases lead to a decrease in traffic flows on area roadways. In cases where the traffic from development that could occur within the Long-Term Plan area would increase, the increase in traffic noise levels would be less than 1 dBA. Traffic noise impacts to sensitive receptors along local roadways would be less than significant.

Traffic from I-80 Business Loop. In contrast to development that could occur within the Strategic Plan area, development that could occur within the Long-Term Plan promotes residential mixed use adjacent to the I-80 Business Loop. These sensitive uses could be located approximately 100 feet from the edge of the nearest westbound lane of traffic, south of Silica Avenue. Under current freeway conditions, residential uses constructed within 100 feet of I-80 Business Loop could experience noise levels up to 77.2 dBA L_{dn}, (as estimated with the Federal Highway Administration's Traffic Noise Model) which would exceed the City's maximum exterior noise standard of 60 dB in its General Plan. Future residential development near the I-80 Business Loop would need to incorporate special construction measures to ensure that interior noise levels are within the 45 dBA standard. Without mitigation or special construction measures, future residents within this portion of the Long-Term Plan area could experience a significant traffic noise impact.

Light Rail Transit and Rail Operations. Development that could occur within the Long-Term Plan area would promote residential mixed use adjacent to the LRT rail line and approximately 100 feet from the Union Pacific tracks. The City of Sacramento General Plan's exterior noise standard for common outdoor areas at residential uses is 60 dB L_{dn}. As shown in Table 6.8-2, existing noise levels in the Long-Term Plan area were measured at 73.8 dBA L_{eq} approximately 33 feet from the LRT tracks. These existing noise levels are above the City's 60 dBA standard for residential uses. Noise levels along the Union Pacific tracks would potentially increase in the future with increased Amtrak passenger train activity. As a result, development that could occur within the Long-Term Plan area could permanently expose sensitive receptors to exterior noise levels above the City's standard for residential uses.

Development that could occur within the Long-Term Plan area would also accommodate an intermodal transit center south of the existing Swanston Light Rail Station. The new transit center that would be designed and built by Sacramento Regional Transit District would replace the existing congested transfer point at the Arden/Del Paso Light Rail Station. Buses would enter the transit station from the south, via a new access road. The access road would extend east from the south end of Evergreen Street and turn parallel to the existing light rail tracks before entering the transit center. In addition, the plan recognizes two additional transportation connections to the Swanston Station. The Point West Transit Management Agency proposes the creation of a streetcar system that would serve the Swanston Station area, Cal Expo, and Arden Fair Mall. Amtrak, which provides inter- and intra-regional rail service in the area,

would add a stop at Swanston Station to its Capitol Corridor service. These transportation system improvements are not part of the proposed Swanston TVSP project, but the proposed Swanston TVSP project would encourage additional residential development in the Long-Term Plan area that would be exposed to noise from transportation sources associated with these improvements.

MITIGATION MEASURES. The following mitigation measures would reduce predicted noise levels at noise sensitive receptors. As a result of implementing these or equivalent measures, residual noise impacts in the Long-Term Plan area would be reduced to a less-than-significant level. (LTS)

NO-6.1 Residential Construction and Uses near I-80 Business Loop. Proposed new residential construction and uses within 500 feet the I-80 Business Loop (based on Traffic Noise Model estimates for receptors with an unobstructed line-of-sight to the freeway) shall incorporate special construction measures as determined by acoustic study to ensure that interior noise levels from project and other anticipated noise sources are within the City's General Plan standards.

NO-6.2 Residential Construction and Uses near Rail Operations. Proposed new residential uses within 350 feet of the LRT tracks or within 750 feet of the Union Pacific tracks (based on FTA screening distances without intervening structures) shall incorporate special construction measures as determined by acoustic study to ensure that interior noise levels from project and other anticipated noise sources are within the City's General Plan standards.

NO-7. Development that could occur within the Long-Term Plan area could permanently expose sensitive receptors to increased noise produced by on-site stationary sources. (PS)

Future development that could occur within the Long-Term Plan area would introduce new stationary noise sources such as HVAC equipment, garbage pickup activity, and truck delivery activity at residential and commercial building loading docks. As noted above in Impact NO-4, noise impacts from these activities would be highly localized, but could, nevertheless, affect nearby sensitive receptors. These stationary sources could exceed noise standards established by the Sacramento Municipal Code. Future development projects would need to be reviewed to ensure that mechanical equipment are specified, and both mechanical equipment and garbage storage areas are sited in such a way as to comply with the noise standards established by the Sacramento General Plan or Municipal Code. Due to the possibility of the above-described stationary source noise exceeding the established standards at noise-sensitive uses in the or near the Swanston TVSP project area, the operational stationary noise sources associated with development that could occur within the Long-Term Plan area are considered to have a potentially significant impact.

MITIGATION MEASURES. Implementation of Mitigation Measures NO-4.1, NO-4.2, and NO-4.3, which address noise control for HVAC systems, garbage disposal and loading dock,

and other stationary sources, respectively, would substantially reduce predicted noise levels at noise sensitive receptors to the limits in the Sacramento General Plan or Municipal Code. As a result, residual noise impacts from stationary sources would be reduced to a less-than-significant level. (LTS)

NO-8. Development that could occur within the Long-Term Plan area could expose sensitive receptors to excessive vibration levels. (PS)

Sources of vibration that would most affect sensitive uses introduced by development that could occur within the Long-Term Plan area consist of the LRT and UPRR tracks, which are adjacent to and approximately 100 feet from the closest proposed residential development, respectively. Since these proposed residential land uses would be located within the 150-foot and 200-foot FTA vibration screening distances (see Table 6.8-3b) for light rail and commuter rail, respectively, vibration impacts at these receptors are considered potentially significant.

MITIGATION MEASURES. Implementation of the following mitigation measures would reduce vibration impacts at these receptors to a less-than-significant level. (LTS)

NO-8.1 Buffer Zones or Structural Measures to Reduce Vibration Levels. The City shall exclude proposed residential uses within 150 feet and 200 feet of the LRT and UPRR tracks, respectively; or prior to issuance of building permits for residential structures within 150 feet and 200 feet of the LRT and UPRR tracks, respectively, the project applicants shall submit to the City for approval a report specifying the vibration reduction measures that will be incorporated into their structural design to reduce vibration impacts to acceptable levels.

Cumulative Analysis

For evaluation of cumulative impacts, the cumulative setting would be other existing and future development or other activities that would add stationary or mobile source noise to the Swanston TVSP project area and the surrounding area.

Noise generated by project construction, including vibration, would be temporary, and therefore, would not add to the permanent environment. In addition, construction noise is localized and would only be part of the cumulative context if other construction activities that could affect sensitive receptors would occur immediately adjacent to the Swanston TVSP project area at the same time. Noise associated with stationary sources (i.e., HVAC systems, truck deliveries, etc.) attributed to project operations would affect onsite project uses and is considered localized noise that would not contribute to the cumulative noise environment. Similarly operational vibration impacts are highly localized and usually attributable to one particular source. Therefore, construction-related and on-site stationary noise sources, and operational vibration impacts resulting from the placement of project residential land uses near the LRT and UPRR lines are not evaluated in a cumulative context.

Increases in vehicle trips due to project development would combine with other adjacent development projects in the Swanston TVSP project area and would result in a cumulative increase in traffic along area roadways as evaluated as part of the traffic study for the proposed Swanston TVSP project, thus affecting noise levels within the City.[12]

NO-9. Traffic generated from the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in conjunction with traffic generated from planned future development in the surrounding parts of Sacramento, would not be expected to permanently expose sensitive receptors to increased cumulative noise levels. (LTS)

Noise exposure in the Swanston TVSP project area is expected to result from traffic on local roadways, traffic on the nearby I-80 Business Loop, and activity on the rail lines that traverse the area. Each of these noise sources is described below, along with the potential to cumulatively affect sensitive receptors in and around the Swanston TVSP project area.

Traffic Noise from Local Roadways. Development that could occur under the proposed Swanston TVSP project would, in combination with other developments that could occur inside and outside the Swanston TVSP project area could increase traffic noise levels experienced by sensitive receptors along local roadways.

Noise from motor vehicles associated with the proposed Swanston TVSP project and other cumulative development that would be built over the next approximately 20 years (up to Year 2025 for the Strategic Plan area and beyond for the Long-Term Plan area) would affect local sensitive receptors. Table 6.8-7 shows cumulative traffic noise levels with and without the proposed Swanston TVSP project at the identified sensitive receptors. As shown in Table 6.8-7, traffic noise levels are predicted to decrease due to a reduction in traffic volumes under Cumulative Plus Proposed Swanston TVSP Project Conditions in 2025. In all cases, noise levels under cumulative conditions with the proposed Swanston TVSP project's contribution would be less than they are at present. Thus, the cumulative traffic noise impact would be less than significant.

Because traffic volumes would decrease under the proposed Swanston TVSP project through 2050, peak-hour vehicle related noise levels would also decrease by the time development that could occur within the Long-Term Plan area is built out. Thus, it is expected that cumulative impact from traffic volumes by the Year 2050 would be less than significant.

[12] Given the uncertainty associated with the ultimate shape, form, intensity, and timing (after 2025) that development within the Long-Term Plan area will take, as well as the inaccuracies associated with the estimation of traffic impacts for a scenario that extends 25 years beyond the furthest out scenario of the currently available analytical tools (SACOG's regional model), the cumulative analysis concentrates on the cumulative conditions in 2025. In Section 6.11, Transportation, it is noted that although the traffic will increase on the roadway segments, due in part to the growth in background traffic, it is not anticipated that the traffic contribution of the proposed Swanston TVSP project would be sufficiently great to cause an adverse traffic impact. The same analogy would apply to cumulative noise impacts with the development that could occur in the Long-Term Plan area.

Table 6.8-7
Cumulative Traffic Noise Levels With and Without the Proposed Swanston TVSP Project

Receptor	Roadway Segment	Peak-Hour Noise Levels (dBA)[a]		
		Cumulative No Project	Cumulative Plus Project[a]	Increase
El Camino Avenue	El Camino Avenue, west of Van Ness Street	74.5	74.4	-0.1
Arden Way	Arden Way, west of Royal Oaks Drive	75.5	75.3	-0.2
Dixieanne Avenue	Dixieanne Avenue, east of Evergreen Street	60.7	60.3	-0.4
Evergreen Street	Evergreen Street, north of Calvados Avenue	64.4	63.6	-0.8
Van Ness Street	Van Ness Street, north of El Camino Avenue	66.0	65.9	-0.1

Source: PBS&J, 2007.

Note:

a. Noise levels were calculated based on peak-hour traffic volumes provided by Kimley-Horn and Associates. PM peak-hour traffic volumes were used for all roadway segments, where the PM peak hour represented the worst-case noise level increase.

Traffic from I-80 Business Loop. At full buildout, the proposed Swanston TVSP project would not contribute substantial additional traffic on the Capital City Freeway during the PM peak hour, which at present carries approximately 18,000 vehicles during the PM peak hour.[13] In fact, implementation of the proposed Swanston TVSP project would reduce cumulative traffic volumes along the I-80 Business Loop. Therefore, the cumulative traffic noise impact on the I-80 Business Loop would be less than significant.

[13] Table 6.11-16 in Section 6.11, Transportation, shows the Cumulative No Project and Cumulative Plus Project (Strategic Plan) freeway ramp junction volumes. Addition of traffic associated with the proposed Swanston TVSP project would actually reduce freeway volumes for all ramps listed in the tables; thus, the proposed Swanston TVSP project would not add a significant amount of traffic to existing traffic on the I-80 Business Loop.

6.9 PUBLIC SERVICES

Introduction

This section of the EIR describes existing service providers and evaluates the ability of providers to meet the demands of the proposed Swanston TVSP project. The services evaluated in this section include the following:

- Police Protection;
- Fire Protection;
- Schools;
- Libraries; and
- Parks and Recreation.

Information for this section was obtained from the City of Sacramento General Plan, the Sacramento Police Department (SPD) 2005 Annual Report, communication with SPD staff, the Sacramento Fire Department (SFD) website, communication with SFD staff, representatives of the Sacramento Public Library and the Sacramento Public Library Facilities Master Plan, the City of Sacramento Parks and Recreation Master Plan and the General Plan Technical Background Report, and other environmental documentation for the Swanston TVSP project area.

No comments were received during the circulation of the NOP regarding the provision of public services.

Setting

Police Services

The Swanston TVSP project area would be served by the SPD for law enforcement services. The SPD is staffed by approximately 804 sworn police officers, 438 civilian staff, and 27 part-time non-career employees and received 518,595 calls for service in 2007, resulting in 181,767 calls dispatched.[1] The SPD currently houses its main headquarters at the Public Safety Center, Chief Deise/Kearns Administration Facility, at 5770 Freeport Boulevard. The SPD has three substations from which patrol divisions operate. The substation that currently serves the Swanston TVSP project area is the William J. Kinney Police Facility, located at 3550 Marysville Boulevard, approximately two miles from the Swanston TVSP project area. The remaining two substations are located at 300 Richards Boulevard

[1] Lieutenant Chris Taylor, Sacramento Police Department, Crime Prevention Through Environmental Design, personal communication, November 14, 2007.

and 5303 Franklin Boulevard, approximately three and six miles from the Swanston TVSP project area, respectively.

The William J. Kinney Police Facility is currently staffed by one police captain, four police lieutenants, 13 police patrol sergeants, 16 Problem Oriented Policing (POP) officers, and 97 patrol officers.[2] The service area covers the northern portion of the City of Sacramento, bound by Highway 50 to the south, Elkhorn Boulevard to the north, Watt Avenue to the east, and the Sacramento River to the west. The William J. Kinney Facility includes three main districts with three beats each. The Swanston TVSP project area is located on the border of two beats within District 2. The area south of El Camino Avenue is in Beat C, while the area north of El Camino is in Beat B. Districts 2B and 2C cover the area just north of the American River, including the North Sacramento, Hagginwood, Woodlake, Ben Ali, and Arden Fair neighborhoods.

The SPD has an unofficial goal of 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 funded for 1.7 officers per 1,000 residents. 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 Master Plan is expected to be completed in winter 2008.

SPD maintains mutual aid agreements as part of a statewide emergency response system. Locally, the SPD maintains memoranda of understanding (MOUs), which are contracts to provide services, with Regional Transit and school districts within the City, with the exception of Twin Rivers Union School District, which employs its own police force. SPD has specialized staff to work with Regional Transit and in City high schools.

Fire Protection Services

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, swiftwater rescue, and specialized/technical rescue services. As of 2007, the SFD employed approximately 535 fire suppression personnel and 100 fire prevention personnel and support staff. The SFD is divided into three offices: the Office of the Fire Chief, providing fiscal management, special projects, and public information; the Office of Operations, providing emergency services, special operations, and shift operations; and the Office of Administrative Services, providing support to operations staff, including fire prevention, training, technical services, human resources, and emergency planning.

In 2007, the SFD operated 23 fire stations, which housed 23 engine companies, eight truck companies, one heavy rescue company and 11 medic units (ambulances). The Swanston TVSP project area is served by two stations. The area west of the Union Pacific Railroad is served by Station 20, at 2512 Rio Linda Blvd. Station 20 houses the City's only heavy rescue unit as well as an engine and medic

[2] Sergeant Chris Taylor, Sacramento Police Department, Crime Prevention Through Environmental Design, personal communication, November 14, 2007.

unit. The area east of the railroad is served by Station 19, which is at 1700 Challenge Way. Station 19 houses an engine, grass unit, and medic unit. 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.

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). The SRFECC is a Joint Powers Authority composed of the SFD, Sacramento Metropolitan Fire District, Elk Grove Fire Department, Folsom Fire Department, and Galt Fire Protection District.

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. SFD also has an automatic aid agreement with the City of West Sacramento.

SFD uses the number of fire stations per resident population to determine need for fire protection services.[3] The SFD currently has approximately one fire station per 20,000 residents.

Schools

The Swanston TVSP project area is located within the Twin Rivers Unified School District (TRUSD). The TRUSD was created as a result of the November 2007 approval of Measure B, a proposal to merge the four North Sacramento area school districts: the North Sacramento School District (NSSD), the Del Paso Heights School District, the Rio Linda Union School District, and the Grant Joint Union High School District (GJUHSD). The Swanston TVSP project area was formerly located within the North Sacramento School District and the Grant Joint Union High School District. The TRUSD serves approximately 30,000 students and began operations on July 1, 2008.

North Sacramento School District. Prior to the merger, the NSSD had 10 elementary schools and one seventh-grade charter school (opened in 2006).[4] The NSSD served 4,855 students in the 2005-2006 school year. Table 6.9-1 shows the location and enrollment numbers for the schools in NSSD for the 2005-2006 school year.

The majority of the Swanston TVSP project area is within the attendance boundaries for the Northwood Elementary School, which is located at 2630 Taft Street. Northwood serves students in grades K through 6, and had a beginning enrollment of 420 students in grades K through 6 for the 2005-2006 school year.[5] The small area west of Evergreen Street is within the attendance boundaries for the Woodlake School, which is located at 700 Southgate Road. Woodlake serves students in grades Pre-K

[3] Angie Shook, Sacramento Fire Department, written notes, June 22, 2006.

[4] North Sacramento School District website, Our Schools, <http://www.nssd.k12.ca.us/Superintendent/OurSchools.htm> (August 8, 2007).

[5] North Sacramento School District website, Northwood Elementary School, <http://www.nssd.k12.ca.us/> (August 13, 2007).

through 6, and had a beginning enrollment of 418 students for the 2005-2006 school year.[6] Table 6.9-2 shows the student capacity and excess space available at Northwood and Woodlake.

Table 6.9-1
NSSD Enrollment Numbers for 2005–2006 School Year

Name	Address	Grades	Enrollment
D.W. Babcock Elementary School	2400 Cormorant Way	K-6	489
Ben Ali Children's Center	2625 Plover St.	K-6	--[a]
Michael J. Castori Elementary School	1801 South Avenue	K-6	591
Dos Rios Early Childhood Education Center	700 Dos Rios Street	K-6	111
Hagginwood Elementary School	1418 Palo Verde Avenue	K-6	460
Harmon Johnson Elementary School	2591 Edgewater Road	K-6	459
Noralto Elementary School	477 Las Palmas Avenue	K-6	672
Northwood Elementary School	2630 Taft Street	K-6	420
Smythe Academy of Arts and Sciences	2781 Northgate Blvd.	K-6	628
Hazel Strauch School	3141 Northstead Dr.	K-6	607
Woodlake School	700 Southgate Blvd.	K-6	418
TOTAL			4,855

Source North Sacramento School District website, <http://www.nssd.k12.ca.us/Superintendent/OurSchools.htm> (August 14, 2007).

Note:

a. Enrollment number not available.

Table 6.9-2
NSSD Schools and Capacities that Serve the Swanston TVSP Project Area

School Name	Design Capacity	Current Enrollment	Excess Capacity
Northwood Elementary School	560	420	140
Woodlake Elementary School	600	418	182

Source: North Sacramento School District website, Our Schools, http://www.nssd.k12.ca.us/Superintendent/OurSchools.htm (August 8, 2007); EIP Associates, a Division of PBS&J, 2006; communication with Northwood and Woodlake Schools, October 1, 2007.

[6] North Sacramento School District website, Woodlake School, <http://www.nssd.k12.ca.us/> (August 13, 2007).

Grant Joint Union High School District. Prior to the merger, the GJUHSD had five comprehensive junior high schools, five comprehensive high schools, five alternative school programs, three charter schools, one special education school, and one adult education school.[7] The GJUHSD served over 12,000 junior high and high school students.

Students from the Swanston TVSP project area would attend Martin Luther King Jr. Junior High School and Grant Union High School.[8] Martin Luther King Jr. Junior High serves grades 7–8 and has a maximum site capacity of 2,069 students,[9] and 956 students were enrolled in 2004-2005.[10] Grant Union High School serves grades 9–12 and has a maximum site capacity of 2,834 students, and 2,132 students were enrolled there in 2004-2005.[11] Table 6.9-3 shows the student capacity and enrollment at Martin Luther King Jr. Junior High and Grant Union High School.

Table 6.9-3
GJUHSD Schools and Capacities that Serve the Swanston TVSP Project Area

School Name	Design Capacity	Current Enrollment	Excess Capacity
Martin Luther King Jr. Junior High School	2,069	956	1,113
Grant Union High School	2,834	2,132	702

Source: Grant Joint Union High School District, Facility Master Plan, 2004, p. 7-4, Figure 38; EIP Associates, a Division of PBS&J, 2006; Grant Joint Unified School District Web Site, http://www.grant.k12.ca.us/schools/reports/2005-2006.asp (Sept. 10,2007).

Libraries

The Sacramento Public Library (SPL) is a joint powers agency of the City of Sacramento and the County of Sacramento.[12] The SPL serves residents of both the City and County.

The Sacramento Public Library Facilities Master Plan (FMP) identifies existing facilities that need to be renovated, relocated, or expanded, or new facilities that need to be built. The recommendations in the FMP are based on facility standards, population projections, and analysis of the age and condition of the existing facilities, combined with a review of site and funding opportunities. The FMP addresses facility needs for the next 20 years. For fiscal year 2005, the library maintained 0.55 sf of library space per capita in the City of Sacramento.

7 Grant Joint Union High School District website, District Schools, <http://www.grant.k12.ca.us/DistrictSchools/ schools.htm> (August 13, 2007).
8 Grant Joint Union High School District, *Facility Master Plan*, 2004, p. 1-3 and 1-4.
9 Grant Joint Union High School District, *Facility Master Plan*, 2004, p. 7-4, Figure 38.
10 Grant Joint Union High School District website, District Schools, <http://www.grant.k12.ca.us/DistrictSchools/ schools.htm> (August 13, 2007).
11 Grant Joint Union High School District website, District Schools, <http://www.grant.k12.ca.us/DistrictSchools/ schools.htm> (August 13, 2007).
12 Sacramento Public Library, Sacramento Public Library Authority Facility Master Plan 2007-2025, March 2007, p. 13.

The closest library facility to the Swanston TVSP project area is the North Sacramento-Hagginwood Library (Hagginwood Library), approximately 0.4 miles to the west. The Del Paso Heights Library, approximately 1.8 miles to the north, would also serve Swanston TVSP project area residents. Table 6.9-4 indicates the available collections at these two libraries. According to the FMP, both the Hagginwood and Del Paso Heights Libraries have expansion or relocation needs. It is estimated that in order to meet the needs of the community surrounding the Hagginwood Library, approximately 15,000 square feet (sf) of additional space would be needed. Similarly, it is estimated that the Del Paso Heights Library would require an additional 20,000 sf of space. As of 2005, when the FMP was published, there were no current funding or site locations selected for these improvements.

Table 6.9-4
Public Library Locations and Collections that Serve the Swanston TVSP Project Area

Branch	Location	Collection
Del Paso Heights Library	920 Grande Avenue	32,000 items
North Sacramento/Hagginwood Library	2109 Del Paso Boulevard	42,000 items

Source: Sacramento Public Library website, http://www.saclibrary.org/about_lib/branches.html, accessed Sept. 21, 2007.

Parks and Recreation. The City of Sacramento Department of Parks and Recreation (Parks Department) maintains more than 3,000 acres of developed 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 and provides park and recreation services at city-owned facilities within the City of Sacramento.[13] Several facilities within the City of Sacramento are owned or operated by other jurisdictions, such as the State of California. The City of Sacramento Parks and Recreation Master Plan guides park development in the City.

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.

There are two parks that serve the Swanston TVSP project area. The Dixieanne Park (recently renamed to Winner's Circle Park) is a 1.84-acre neighborhood park within the Swanston TVSP project area on Evergreen Street. It has recently been improved to provide youth and family-oriented facilities with a skate park, basketball court, and sitting and picnic areas. The Dixieanne tot lot, a 0.15-acre pocket park, is west of the Swanston TVSP project area on Beaumont Street. This park offers sitting areas, a fenced tot lot, drinking fountain, and landscaping.

[13] City of Sacramento, *Parks and Recreation Master Plan*, Adopted December 2004, Services Chapter, p. 1.

Applicable Plans and Policies

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", 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 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. The Cal OSHA fire protection regulations are relevant to future development in the Swanston TVSP project area because they define minimum standards for fire suppression and ensure that firefighting equipment are adequate to protect future residents and businesses.

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. The regulations set forth by the UFC are relevant to future development in the Swanston TVSP project area because they provide fire safety standards for existing structures as well as future development within the area. The City is in compliance with the UFC, and has adopted an amendment to include standards for emergency access gates and barriers.

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. The regulations set forth in the California Health and Safety Code are relevant to future development in the Swanston TVSP project area because they provide standards for personal fire safety within residential structures.

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 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 General Plan. The following goals and policies from the Public Facilities and Services and Conservation and Open Space Elements are applicable to the proposed Swanston TVSP project:

Police Services

Goal A: Provide the highest level of police service to protect City residents and businesses.

Policy 1: Continue Police Department participation in the review of subdivision proposals and in assisting the Public Works Department with traffic matters.

Policy 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.

Fire Protection Services

Goal A: Provide adequate fire service for all areas of the City.

Policy 2: Ensure that adequate water supplies are available for fire-fighting equipment in newly developing areas.

Policy 4: Promote greater coordination of land use development proposals with the Fire Department in order to insure adequate onsite fire protection provisions.

Policy 5: Promote greater use of fire sprinkler systems for both commercial and residential use.

Schools

Goal A: Continue to assist school districts in providing quality education facilities that will accommodate projected student enrollment growth.

Policy 2: Involve school districts in the early stages of the land use planning process for the future growth of the City.

Libraries

Goal A: Provide adequate library facilities to contribute to the community cultural, academic, and recreational activities.

Policy 1: Evaluate all proposed library facilities for consistency with the standards and guidelines of the Libraries Master Plan.

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.

Policy 1: Encourage private development of recreational facilities that complement and supplement the public recreational system.

Policy 2: Give high priority to improving parks, open space and recreation uses in redevelopment, Community/Specific Plan infill and target areas where these uses are deficient.

Policy 3: Encourage joint development of parks with compatible uses such as new schools, libraries and detention basins.

Policy 6: Review all necessary infrastructure improvements for their potential park and open space usage.

Policy 7: Locate community and regional parks and linear recreational areas on or adjacent to major thoroughfares.

Preservation of Natural Resources

Goal A: Implement the Master Plan for Parks Recreation

Sacramento City Code. The following City ordinances from the Sacramento City Code are applicable to the proposed Swanston TVSP 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. This chapter 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.

Chapter 16.64 Parks and Recreational Facilities. Chapter 16.64 provides standards and formulas for the dedication of parkland and in-lieu fees. These policies help the City to acquire new parkland. 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 the appropriate circumstances, the subdivider shall, in lieu of dedication of land, pay a fee equal to the value of the land prescribed for dedication to be used for recreational and park facilities which will serve the residents of the area being subdivided.

Chapter 18.44 Park Development Impact Fee. Chapter 18.44 imposes a park development 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 park facilities and reimburse the City for existing facilities.

Developer Fees. Prior to the passage of Proposition 1A/Senate Bill 50 (Chapter 407, Statutes of 1998), which is summarized below, it was possible for school districts to collect developer fees in accordance with Government Code Section 65995 (often called "statutory fees" or "Stirling fees" after the author of the enabling legislation, AB 2926). The School Facilities Legislation, as it is also referred to, was enacted to generate revenue for school districts for capital acquisitions and improvements.

Sacramento Public Library Authority Facilities Master Plan. The Sacramento Public Library Authority FMP contains the following Guiding Principles designed to support SPL customers.

1. Libraries recognize the needs of different communities.
2. Libraries recognize the needs of a diverse population.
3. Libraries add value to the community.
4. Libraries are prime real estate.
5. Libraries are easy for customers to use.
6. Library space is flexible.
7. Libraries recognize the value of community partners.
8. Library design promotes staff efficiency and effectiveness.

The Sacramento Public Library Authority FMP also contains service standards in a tiered three-level approach. The three levels are Threshold, Target, and Prime. The Threshold standard would be used to evaluate current library services available to residents of the specific service area. As individual communities move forward in planning their specific service goals and the facilities required to provide those services, they would select from Threshold, Target, or Prime to tailor their building program.

City of Sacramento 2005-2010 Parks and Recreation Master Plan. 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 ten park acres per thousand population, including all categories of parks. The categories of City parks and standards relevant to the proposed Swanston TVSP project are described below.[14]

Neighborhood Park. Developed to serve the recreation needs of a small portion of the City. A neighborhood park serves an area 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 two to ten acres, depending on the nature of the service area. The standard for this type of park is 2.5 acres per thousand residents of 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.

Landscaped and Dedicated Open Space. Landscaped open spaces are owned by the City and developed, operated, or maintained by the Department of Parks and Community Services, primarily 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.

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.

Proposed Swanston Station Transit Village Specific Plan. The proposed Swanston Station Specific Plan contains specific open space and recreational improvements to enhance the livability of the Swanston TVSP project area. In particular, the open space improvements and public amenities developed within the Swanston TVSP project area would center on increasing recreational opportunities, enhancing the pedestrian environment, and improving connectivity within the Swanston

[14] City of Sacramento, *General Plan*, Section 6 – Conservation and Open Space Element, adopted January 19, 1988, p. 7-25.

TVSP project area. These improvements are depicted in Figure 2-13 of Chapter 2, Project Description, and summarized here.

The public open spaces proposed for the Swanston TVSP project area are made up of parks, plazas, and connectors that run along roads and between developments.

- **Neighborhood Parks.** Neighborhood parks would serve as anchors for active and passive recreational opportunities throughout the Swanston TVSP project area. At an average of 2.5 acres each, the proposed neighborhood parks would be the largest classification of open space in the Swanston TVSP project area. The proposed Swanston TVSP project includes a total of 10 acres of new neighborhood parks, consisting of two new parks on each side of the rail lines.

- **Pocket Parks.** Pocket parks would play a supporting role to the neighborhood parks. Each of the pocket parks would typically occupy a portion of a block and would encompass approximately 0.4 acres of open space. Eight pocket parks, totaling 3.2 acres, are planned throughout the Swanston TVSP project area.

- **Plazas and Promenades.** While not intended as recreational areas, the proposed Swanston TVSP project would include plazas and promenades to strengthen bicycle and pedestrian connections between the Swanston light rail station, the parks, and the higher density mixed use areas. These open spaces would use textured paving materials, shade shelters, and trees to enhance the transit experience. The proposed Swanston TVSP project includes a total of 0.25 acres of plazas and promenades.

- **Mews and Greenways.** Greenways are proposed to serve as pedestrian and bicycle connections and as minor community gathering spaces, characterized by small eating areas, children's play areas, and barbeque areas. Mews are narrow, linear hardscaped pathways between developments that would provide additional pedestrian and bicycle access throughout the transit village. The proposed Swanston TVSP project recommends multiple greenways totaling more than five acres of open space.

Recommendations regarding the future open space improvements for the Swanston TVSP project area are included in the Design Guidelines in Volume Two, Chapter 4 of the proposed Swanston Station Specific Plan and itemized below:

Neighborhood Parks

1Ci-1: Provide neighborhood parks of approximately 2 acres evenly distributed through the area, such that one is within 1/4 –mile walking distance of every resident and commercial user in the area.

1Ci-2: Ensure a minimum of 2.5 acres of park space per 1,000 people is provided.

Pocket Parks

1Cii-2: Distribute pocket parks and greenways to be within 1/8-mile walking distance from all residents and commercial users.

1Cii-3: Improve existing pocket parks, such as the park behind Hilton Hotel, and improve access to such parks.

1Cii-4: Create a pocket park that serves as a bookend to the "Main Street" and to the transit promenade by closing traffic off of Dixieanne Avenue at Clay Street.

Transit Plaza and Promenades

1Ciii-2: Provide a 25 feet wide multi-use path and landscaping area between the light rail platform and tracks and the adjacent residential development.

1Ciii-3: Ensure a minimum 20 feet wide multi-use path (transit promenade) along the rail tracks to serve as emergency vehicle access and a connection between the pedestrian bridge, the LRT station and bus transfer center.

Greenways

1Civ-1: Create greenways to serve as pedestrian and bicycle connections through blocks, links between destinations, and buffers between new and existing development.

1Civ-2: Provide greenways along the blocks between Dixieanne Park and the proposed neighborhood park on Clay Street.

1Civ-3: Where possible, provide greenways at least 60 feet wide that can serve as useable open space for adjacent residents.

Impact Assessment and Mitigation Measures

Methods of Analysis

The need to expand or construct new facilities can be indicative of significant project impacts. The analysis of required public services demand for staff and facilities is largely based on the residential population generated by a project. The proposed Swanston TVSP project includes a large mixed-use component, which may be developed as a combination of residential, commercial, and/or retail uses; however, the factors used to estimate public service demand typically account for nonresidential uses. The assessment in this section relies on the population estimates for the Strategic Plan area and for the Long-Term Plan area, reported in Chapter 5, Population and Housing. Development that could occur within the Strategic Plan area could result in approximately 940 new persons while development that could occur within the Long-Term Plan area could result in approximately 5,730 persons.

As development occurs in the Swanston TVSP project area, existing uses may be displaced. Thus, use of the above estimates for residential population, which does not account for residents that might be displaced, overstates future demand for public services. The resulting demand calculations are still reasonable since the number of displaced residents represents a small percentage of demand. In the Strategic Plan area, an estimated 22 residential units might be displaced (equivalent to about 55 persons, or 6 percent of the growth that could occur); in the Long-Term Plan area, an estimated 132

residential units might be displaced (equivalent to about 340 persons, or 6 percent of the growth that could occur).

This assessment uses the following standards to analyze possible changes in service levels that are often associated with the need to expand or construct new facilities.

Police. This analysis uses the SPD's goal of a 2:1,000 ratio of sworn officers to residents and 1:2 ratio for civilian support staff to sworn officers to determine staffing needs to serve the proposed Swanston TVSP project.

Fire Protection. Demands for fire service have been developed in consultation with SFD staff. SFD does not have an official staffing ratio goal. SFD uses one fire station per 20,000 residents to determine the need for fire protection. The SFD does not have an adopted service level standard for response times, but has a goal of less than five minutes for emergency medical response and less than seven minutes for fire suppression response,[15] which will be used in this analysis.

Schools. Impacts on schools are determined by analyzing the projected increase in the demand for schools as a result of the proposed Swanston TVSP project and comparing the projected increase with the schools' remaining capacities to determine whether new or altered facilities would be required. For this analysis, expected student yields were derived using current multi-family student generation rates for the elementary, middle, and high school levels since the proposed Swanston TVSP project allows the development of apartments, condominiums, and townhouse units. The NSSD did not have student generation rates, so the generation rates for multi-family dwelling units were used to generate the number of elementary school students in the NSSD. This rate was calculated for the City of Sacramento by SCI Consulting Group for the Sacramento City Unified School District which is adjacent to the NSSD. GJUHSD had its own generation rates for junior high school and high school students; however, these generation rates are for single-family residential units, and would result in student generations that are too high for this analysis. The rates for junior high and high school students were also taken from the analysis done for the Sacramento City Unified School District which took into account single-family and multi-family generation rates. Because this project would allow the construction of apartments, condominiums, and townhouses, the multi-family generation rates were used.

Libraries. The provision of adequate library services is based on the square footage per capita rate of the Sacramento Public Library Planning Guidelines in the FMP.[16]

- Threshold Level: 0.40 sf library facilities per capita
- Target Level: 0.50 sf library facilities per capita
- Prime Level: 0.60 sf library facilities per capita

[15] Angie Shook, Sacramento Fire Department, written notes, June 22, 2006.
[16] Lois Ross, Project Manager, Sacramento Public Library, personal communication, July 11, 2006.

Parks and Recreation. The City of Sacramento has park acreage service level goals for the three types of parks identified in the Parks and Recreation Master Plan. While the Parks and Recreation Master Plan identified a Service Level Goal of 5.0 acres per 1,000 residents for neighborhood and community serving parks, this is a preferred goal instead of a minimum guideline. Meeting the following guidelines, also identified in the Parks and Recreation Master Plan, would provide public recreation opportunities within reasonable walking or driving distance of all residences.

- Neighborhood Serving Parks: 2.5 acres per 1,000 population with a service area guideline of 0.5 mile
- Community Serving Parks: 2.5 acres per 1,000 population with a service area guideline of 3 miles
- Citywide/Regionally Serving: 8.0 acres per 1,000 population
- Trails/Bikeways: 0.5 miles per 1,000 population

Standards of Significance

For the purposes of this EIR, impacts on public services are considered significant if the proposed Swanston TVSP project would:

- require, or result in, the construction of new, or the expansion of existing, facilities related to the provision of fire protection, police protection, school facilities, or other governmental services;
- cause or accelerate a substantial physical deterioration of existing area parks or recreational facilities; or
- create a need for construction or expansion of recreational facilities beyond what was anticipated in the General and/or Community Plans.

Environmental Analysis

In order to determine impacts for each resource, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant impacts to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section, PS refers to Public Services.

Strategic Plan Area – Year 2025

PS-1. Development that could occur within the Strategic Plan area would result in an increase in demand for law enforcement services. However, the increase in demand would not result in the need to construct new, or expand existing, police facilities. (LTS)

Development that could occur within the Strategic Plan area would include up to 366 dwelling units (du) and 70,000 square feet (sf) of commercial space, resulting in an increased demand for law enforcement services. Using the City's guideline of 2.57 people per housing unit, development of 366 du would result in approximately 940 new residents. Based on the SPD's goal of between 2 to 2.5 officers per 1,000 residents, two sworn officers would be required to serve demand that could occur from development within the Strategic Plan area.[17] While law enforcement demand is typically derived based on residential population, it is not unreasonable to assume that the new commercial floor area would also trigger calls for service. Accordingly, to be conservative, it is expected that the Strategic Plan could generate the demand for approximately three new SPD officers.

The proposed Swanston TVSP project does not include provisions for new police facilities. There are no facilities within the Strategic Plan area. The increased police staff of up to 3 sworn officers to serve the development that could occur within the Strategic Plan area would be minimal, relative to the approximately 130 sworn officers (including captains, lieutenants, sergeants, patrol officers, and specialized officers) currently accommodated at the William J. Kinney Police Facility, which currently serves the Strategic Plan area. Therefore, development that could occur within the Strategic Plan area would not result in the need for a new police substation or expansion of William J. Kinney Police Facility. As a result, development that could occur within the Strategic Plan area would have a less-than-significant impact on law enforcement.

PS-2. Development that could occur within the Strategic Plan area would increase the demand for fire and emergency protection services. However, the increase in demand would not result in the need to construct new, or expand existing, fire facilities. (LTS)

Development that could occur within the Strategic Plan area would include residential, neighborhood-serving retail, restaurant, and open space uses that would require fire protection services. Nevertheless, the projected amount of growth in the Strategic Plan area (approximately 940 new residents) would not trigger the need for a new fire station, because the City's service ratio is one station per 20,000 residents.

In 2004, the SFD's average response time for all calls was 5.1 minutes for approximately 60,000 calls. Areas of high density generally experience high levels of traffic congestion, which, in turn, lead to worsening response times.[18] According to the SFD, the response time goals of five minutes for emergency medical response and seven minutes for fire response are currently met most of the time.[19] The population and density of the Strategic Plan area would increase as a result of the proposed Swanston TVSP project, which could increase calls for SFD service. However, the population that could be generated in the Strategic Plan area

[17] The potential displacement of residential population within the Strategic Plan area would lower the demand by 0.1 officers. This adjustment would not affect the significance conclusions.

[18] Angie Shook, Prevention and Plan Review, Sacramento Fire Department, written notes, June 22, 2006.

[19] Angie Shook, Prevention and Plan Review, Sacramento Fire Department, written notes, June 22, 2006.

represents less than five percent of the population needed for a new fire station and the projected growth lies within an existing developed area that is already served by the City's fire protection services. Thus, the development that could occur in the Strategic Plan area would not create substantial new demand for fire and emergency protection services. In addition, as discussed in Section 6.11, Transportation, the traffic from development that could occur within the Strategic Plan area would not noticeably increase local congestion or delays that could interfere with emergency response. As a result, the SFD response times would not be adversely affected by development that could occur within the Strategic Plan area.

Finally, new construction that could occur within the Strategic Plan area would be subject to local and state building codes regarding fire protection and life safety. Accordingly, from a building standpoint, the existing regulations would safeguard future residents and businesses in the Strategic Plan area from undue fire safety risks resulting from inadequate building, electrical, or fire flow standards. As noted in Chapter 2, Project Description, the proposed Swanston TVSP project calls for upsizing the existing water mains that are less than the City standard of 8-inch diameter desired for fire flow protection in the Strategic Plan area.

In light of the above factors, future development that could occur within the Strategic Plan area would not result in the need for new, or the expansion of existing, fire protection facilities that currently serve the Strategic Plan area. As a result, the development that could occur within the Strategic Plan area would have a less-than-significant impact on fire protection and emergency services.

PS-3. Development that could occur within the Strategic Plan area would generate additional students in the TRUSD. However, the increase in enrollment would not result in the need to construct new, or expand existing, school facilities. (LTS)

Development that could occur within the Strategic Plan area could result in approximately 37 elementary, 8 middle school, and 11 high school students (see Table 6.9-5). Based on the available capacity at schools serving the Swanston TVSP project area (Tables 6.9-2 and 6.9-3), all students from the development that could occur within the Strategic Plan area could be accommodated by schools where Strategic Plan area students would most likely enroll (i.e., Northwood or Woodlake Elementary Schools, Martin Luther King Jr. Junior High School, and Grant Union High School).[20] For this reason, the development that could occur within the Strategic Plan area would not result in the need for new, or the expansion of existing, school facilities. In addition, future development would be required to pay applicable development fees, including the SB 50 fees for schools. Payment of the SB 50 fees is regarded as fully mitigating school impacts under CEQA. As a result, the development that could occur within the Strategic Plan area would have a less-than-significant impact on schools.

[20] The potential displacement of residential population within the Strategic Plan area would lower the total number of students by three. This adjustment would not affect the significance conclusions.

Table 6.9-5
New Students From Development Associated With the Strategic Plan Area

Grade Level	Generation Rate	Units	Number of Students	Available Capacity at Nearby Schools
Elementary School – K–6	0.10	366	37	322
Middle School – 7–8	0.02	366	8	1,113
High School – 9–12	0.03	366	11	702

Source: For student generation rates - SCI Consulting Group, Written communication to Nedzlene Ferrario, Senior Planner, City of Sacramento, July 21, 2006; for available capacity – see Table 6.9-2 and Table 6.9-3 earlier in this section.

PS-4. Development that could occur within the Strategic Plan area would result in an increase in demand for library services. This demand for library services is acknowledged by the FMP, which includes funding mechanisms to expand library facilities. (LTS)

The closest library to the development that could occur within the Strategic Plan area is the North Sacramento-Hagginwood Library (Hagginwood Library) at 2109 Del Paso Boulevard. The Hagginwood Library is 4,000 sf and is designed to serve the immediate population in the North Sacramento area. Development that could occur with the Strategic Plan area would also be served by the Del Paso Heights Library at 920 Grand Avenue. The Del Paso Library is 5,425 sf and is designed to serve the northeastern part of City. As described in the setting, both Hagginwood and Del Paso Heights libraries are in need of expansion and/or relocation to better serve surrounding residents; however, no funding has been identified and no site has yet been selected.

For 2005, the Hagginwood and Del Paso Heights libraries maintained a service ratio of 0.15 sf and 0.17 sf per capita (see Table 6.9-6), respectively, both of which were below the target threshold of 0.40 sf per capita. In comparison, the entire library system had a service ratio of 0.55 sf per capita. Future residential development that could occur within the Strategic Plan area could total approximately 940 persons, and could result in new a service ratio of 0.14 sf for the Hagginwood Library and 0.16 sf per capita for the Del Paso Heights Library. Therefore, implementation of the proposed Swanston TVSP project could increase the overall demand for additional library facilities.

According to the FMP, the amount of library space at the Hagginwood and Del Paso Heights Libraries would increase to 15,000 sf and 20,000 sf, respectively, by 2025. Using the population projections from the FMP for 2025, the service level at the Hagginwood Library would increase from 0.15 sf per capita to 0.52 sf per capita, and the service level at the Del Paso Heights Library would increase from 0.17 sf per capita to 0.52 sf per capita. Assuming the population generated within the Strategic Plan area consisted entirely of new growth that

Table 6.9-6
Sacramento Public Library Service Ratios to 2025

Library	Current Square Footage	Square Footage by 2025	Current Service Area Population	Population by 2025	Current Service Ratio	Service Ratio by 2025
Valley Hi-North Laguna	5,850	20,000	36,544	41,265	0.16	0.48
Pocket Library	n/a	15,000	n/a	30,000	n/a	0.50
65th and Folsom	n/a	30,000	n/a	52,000	n/a	0.58
McClatchy	1,900	1,900	13,398	15,880	0.14	0.12
Del Paso Heights	*5,425*	*20,000*	*32,325*	*38,693*	*0.17*	*0.52*
Hagginwood	*4,000*	*15,000*	*27,585*	*28,686*	*0.15*	*0.52*
McKinley	4,681	4,681	31,710	32,082	0.15	0.15
Colonial Heights	12,000	20,000	98,798	67,827	0.12	0.29
Belle Cooledge	12,000	25,000	79,544	46,648	0.15	0.54
Central Library – Neighborhood	15,000	20,000	25,367	36,937	0.59	0.54
Central Library – Centralized	140,000	135,000	n/a	n/a	n/a	n/a
Martin Luther King, Jr.	15,078	30,000	49,411	64,175	0.31	0.47
South Natomas	13,615	20,000	40,206	41,470	0.34	0.48
North Natomas	23,000	23,000	24,637	66,294	0.93	0.35
Total	**252,549**	**379,581**	**459,525**	**561,957**	**0.55**	**0.68**

Source: Sacramento Public Library, Sacramento Public Library Authority Facility Master Plan 2007-2025, March 2007
Note:
Italicized libraries serve the Swanston TVSP project area.

was not accounted for in the FMP forecasts, the service level in both service areas would slightly decrease to 0.50 sf per capita. This ratio is above the target threshold for adequate library services (0.40 sf per capita). This assumption overstates the actual demand since the development that could occur within the Strategic Plan area could displace an estimated 56 persons. As a result, growth that could occur within the Strategic Plan area would have a less-than-significant effect on library services. Furthermore, the FMP also identifies funding mechanisms from County and City general funds to development impact fees to benefit assessment and parcel taxes. These funding sources would be used by the SPL to continue to provide adequate library services to the Strategic Plan area, as well as the entire SPL service area. Furthermore, the population generated in the Strategic Plan area would contribute tax dollars into the City's general fund along with payment of other city fees and taxes. Any need for expansion, renovation, or construction of library facilities through 2025 has been projected in the FMP with funding sources identified.

Because development that could occur within the Strategic Plan area would contribute funds for future library facilities in the vicinity of the Swanston TVSP project area and the FMP has

identified improvements and the funding mechanisms to serve the City through 2025, impacts to library services would be considered a less-than-significant impact.

PS-5. Development that could occur within the Strategic Plan area would result in the need to construct new, or expand existing, neighborhood serving parks. However, parks and open space features in the Swanston Station Specific Plan, coupled with the City's impact fees, would meet the increased demand. (LTS)

Development that could occur within the Strategic Plan area would introduce an estimated 940 new residents and could result in the need for approximately 2.5 acres of neighborhood park space according to the park standards in the City's Park and Recreation Master Plan (taking into account that the potential displacement of residential population within the Strategic Plan area would lower the demand to 2.2 acres). The "Vision Framework" in Volume Two, Chapter 4 of the proposed Swanston TVSP project describes the evolution of the open space network that would ultimately serve Swanston TVSP project area residents. Following the upgrades of Dixieanne Park and the Dixieanne tot lot, which are currently underway, the Vision Framework recommends the development of three new neighborhood parks: one north of El Camino Avenue, one between Dixieanne Avenue and El Camino Avenue bordering Clay Street, and one east of the railroad tracks off Silica Avenue. The Design Guidelines in the proposed Swanston Station Specific Plan also calls for the provision of approximately two acres of neighborhood parks evenly distributed through the Swanston TVSP project area, such that one is within 1/4–mile walking distance of every resident and commercial user in the area (Policy 1Ci-1), and a minimum of 2.5 acres of park space per 1,000 people (Policy 1Ci-2). Additionally, if the park acreage is not provided as part of future development, developers would pay in lieu fees in accordance with Chapter 18.44, Park Development Impact Fee, of the City Code. Because of proposed recreational policies and standards included in the proposed Swanston Station Specific Plan and City development impact fees, the increased demand for parks would be satisfied, and impacts to park and recreational services would be considered less than significant.

Long-Term Plan Area - Buildout

PS-6. Development that could occur within the Long-Term Plan area could require consideration of new or expanded police facilities beyond year 2025. However, the SPD would add personnel on an as-needed basis as the proposed Swanston TVSP project builds out, and new facilities would be part of a citywide Police Department Master Plan and would be funded through the City's General Fund. (LTS)

There are currently no police stations within the Long-Term Plan area and none are planned as part of the proposed Swanston TVSP project. Current police master planning assumes a level of development within the Long-Term Plan area. If the City approves the proposed Swanston Station Specific Plan, future police master planning efforts will take the assumed development in the area into account. Development that could occur within the Long-Term Plan area (excluding development that could occur within the Strategic Plan area) could result in about

2,230 new dwelling units (du) and 435,515 square feet of new commercial floor area, resulting in an increased demand for law enforcement services. Using the City's guideline of 2.57 persons per housing unit, development of 2,230 du would result in approximately 5,730 new residents in the Swanston TVSP project area (5,390 net residents, taking into account existing residential population that could be displaced). Based on the SPD's goal of between 2 to 2.5 officers per 1,000 residents, up to 14 new sworn officers would be required when the Long-Term Plan area is fully developed in accordance with the proposed Swanston TVSP project (13 new officers, taking into account existing residential development that might be displaced). While the proposed Swanston TVSP project could allow 2,230 additional units in the Long-Term Plan area, it is not known when the development would occur. Buildout of the Long-Term Plan area is anticipated to occur sometime after 2030, which allows the SPD time to incorporate anticipated development associated with the proposed Swanston TVSP project in its future master planning efforts.

Development that could occur within the Long-Term Plan area would not result in a direct environmental impact because construction of a police station within the Long-Term Plan area is not proposed. Development could, however, result in indirect impacts due to construction activities outside of the Swanston TVSP project area necessitated by the need for police facilities to serve the Swanston TVSP project area in addition to other areas. These future facilities would be included in future master planning efforts by the City's Police Department and would be required to undergo environmental analysis prior to their construction/expansion. For these reasons, the impacts associated with the provision of police services in the Long-Term Plan area would be less than significant.

PS-7. Development that could occur within the Long-Term Plan area would increase the demand for fire and emergency protection services. However, the increase in demand would not result in the need to construct new, or expand existing, fire facilities. (LTS)

Development that could occur within the Long-Term Plan area (excluding development that could within the Strategic Plan area) could result in about 2,230 new du and 435,515 square feet of new commercial floor area, resulting in an increased demand for fire protection and emergency services. Using the City's guideline of 2.57 people per housing unit, development of 2,230 du would result in approximately 5,730 new residents in the Long-Term Plan area. However, the projected amount of growth that could occur within the Swanston TVSP project area would not trigger the need for a new fire station, because the City's service ratio is one station per 20,000 residents.

As described earlier for development that could occur within the Strategic Plan area, new development that could occur within the Long-Term Plan area would be subject to local and state building codes regarding fire protection and life safety. Furthermore, as noted in Chapter 2, Project Description, the proposed Swanston TVSP project calls for upsizing the existing water mains that are less than the City standard of 8-inch diameter desired for fire flow protection in the Long-Term Plan area.

Buildout of the Long-Term Plan area is anticipated to occur sometime after 2025, which allows the fire department to incorporate anticipated development associated with the proposed Swanston TVSP project in its future master planning efforts.

Similar to the City's Police Department, the Fire Department updates its master planning efforts to account for land use changes. Development that could occur within the Long-Term Plan area in accordance with the proposed Swanston TVSP project would not result in a direct environmental impact because construction of a fire station within the Long-Term Plan area is not proposed. Development could, however, result in indirect impacts due to construction activities outside of the Swanston TVSP project area necessitated by the need for fire facilities to serve the Swanston TVSP project area in addition to other areas. These future facilities would be included in future master planning efforts by the City's Fire Department and would be required to undergo environmental analysis prior to their construction/expansion. For these reasons, the impacts associated with the provision of fire services in the Long-Term Plan area would be less than significant.

PS-8. Development that could occur within the Long-Term Plan area would generate additional students in the TRUSD. However, the increase in enrollment would not result in the need to construct new, or expand existing, school facilities. (LTS)

Approximately 223 elementary, 45 middle school, and 67 high school students would be expected from new development that could occur within the Long-Term Plan area (see Table 6.9-7). These new students would not exceed capacity at the schools expected to serve households in the Swanston TVSP project area (i.e., Northwood or Woodlake Elementary Schools, Martin Luther King Jr. Junior High School, and Grant Union High School).[21] For this reason, the development that could occur within the Long-Term Plan area would not result in the need for new, or the expansion of existing, school facilities that currently serve the Long-Term Plan area. In addition, future development within the Long-Term Plan area would be required to pay applicable development fees, including the SB 50 fees for schools. Payment of the SB 50 fees is regarded as fully mitigating school impacts under CEQA. As a result, there would be a less-than-significant impact on schools.

Table 6.9-7
New Students From Development Associated With the Long-Term Plan Area

Grade Level	Generation Rate	Units	Number of Students	Available Capacity at Nearby Schools
Elementary School – K-6	0.10	2,230	223	322
Middle School – 7-8	0.02	2,230	45	1,113
High School – 9-12	0.03	2,230	67	702

Source: SCI Consulting Group, Written communication to Nedzlene Ferrario, Senior Planner, City of Sacramento, July 21, 2006.

[21] The potential displacement of residential population within the Long-Term Plan area would lower the demand by about 50 students. This adjustment would not affect the significance conclusions.

PS-9. Development that could occur within the Long-Term Plan area would result in an increase in demand for library service. This demand for library services is acknowledged by the FMP, which includes funding mechanisms to expand library facilities. (LTS)

Development that could occur within the Long-Term Plan area (excluding development that could within the Strategic Plan area) could result in about 2,230 new du, resulting in an increased demand for library services. Using the City's guideline of 2.57 people per housing unit, development of 2,230 du would result in approximately 5,730 new residents in the Long-Term Plan area.

As discussed above, the amount of library space at the Hagginwood and Del Paso Heights libraries would be increased to 15,000 sf and 20,000 sf, respectively, by 2025. Based on the 5,370 new residents that could occur within the Long-Term Plan area, the library service ratio at the Hagginwood and Del Paso Heights Libraries after 2025 would decline from 0.51 sf per capita to about 0.47 sf per capita. However, this service ratio would remain above the target service ratio of 0.40 sf per capita.

Because development that could occur within the Long-Term Plan area would not cause service levels (library space per capita) to fall below the City's standards, future development would contribute funds for future library facilities in the vicinity of the Swanston TVSP project area, and the FMP has identified improvements and the funding mechanisms to serve the Long-Term Plan area, impacts to library services would be considered a less-than-significant impact.

PS-10. Development that could occur within the Long-Term Plan area would result in the need to construct new, or expand existing, neighborhood-serving parks. However, parks and open space features in the proposed Swanston TVSP project, coupled with the City's impact fees, would meet the increased demand. (LTS)

Development that could occur within the Long-Term Plan area would result in about 2,230 new du, resulting in an increased demand for neighborhood serving parks. Using the City's guideline of 2.57 people per housing unit, development of 2,230 du would result in 5,370 new residents in the Long-Term Plan area. Based on 5,370 new residents and the Parks Department goal of 2.5 acres of neighborhood serving parks per 1,000 residents, an additional 13.4 acres of neighborhood serving parks would be needed. (When combined with development that could occur in the Strategic Plan area, total new residents in the Swanston TVSP project area would be 6,670, which would result in a total need for 16.7 acres.[22]) The proposed Swanston Station Specific Plan includes multiple neighborhood parks, pocket parks (approximately 13.2 acres) on Silica Avenue, Clay Street and north of El Camino Avenue, as well as local gathering spots along greenways and mews.

[22] The potential displacement of residential population within the Long-Term Plan area would lower the demand by 0.8 acres. This adjustment would not affect the significance conclusions.

The proposed Swanston Station Specific Plan would substantially increase parklands and recreational facilities in the Swanston TVSP project area, including 10 acres of neighborhood parks, 3.2 acres among eight pocket parks, 1.25 acres of plazas and promenades. Combined with the existing 1.84-acre Dixieanne Park, parkland acreage in the Swanston TVSP project area would total 16.3 acres, which would be below the target of 16.7 acres. As described earlier for the Strategic Plan area (see Impact PS-5), future development would be required to provide the park acreage or pay in lieu fees. If the proposed Swanston TVSP project fully builds out, an additional 0.4 acres would be needed to satisfy the City's standard for neighborhood parks.

If the park acreage is not provided as part of future development, developers would pay in lieu fees in accordance with Chapter 18.44, Park Development Impact Fee, of the City Code. Because of proposed recreational policies and standards included in the proposed Swanston Station Specific Plan and City development impact fees, the increased demand for parks would be satisfied, and impacts to park and recreational services would be considered less than significant.

Cumulative Analysis

The cumulative context for fire, police, parks and library services focuses on the North Sacramento and Arden-Arcade areas of the City of Sacramento, although it is recognized that these are citywide services and thus some consideration of citywide development and forecasts are included. The cumulative context for schools is the TRUSD boundaries.

PS-11. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City, would contribute to cumulative increases in demand for fire protection, police protection, and school facilities. (LTS)

The proposed Swanston TVSP project could result in approximately 6,670 new residents in the North Sacramento and Arden-Arcade areas of Sacramento, which would require additional fire and police protection services, school facilities, and other governmental services. The current Sacramento General Plan estimates that the population in the North Sacramento and Arden-Arcade areas will grow to approximately 69,736 and 113,602 by 2035, respectively.[23] This projection is based on lower intensity development, which was more prevalent in these areas at the time of the current General Plan's adoption in 1988. Since then, the City has begun working toward higher intensity uses within the North Sacramento and Arden-Arcade areas, which would cause increases in population that exceed current General Plan projections. The increases in population could increase the need for all public services, in excess of service levels anticipated in the adopted General Plan.

[23] Sacramento Area Council of Governments, *2035 Projections for Households and Population by Housing Type and Employment by Regional Analysis District*, adopted September 15, 2005.

Due to this increase in development, it is anticipated that fire and police protection services and other governmental services could experience reductions in service levels as the planned development in the North Sacramento and Arden-Arcade areas occurs. In addition, the need for new schools would be greater. Growth and development in these areas, including development within the Swanston TVSP project area, could trigger the need for construction of additional fire and police stations, as well as school facilities. The SFD, SPD and TRUSD will consider the needs for service throughout the City, including the Swanston TVSP project area, and determine when and where new facilities would be constructed as development occurs. As stated earlier, the SPD is developing a Master Plan, which will identify citywide department needs and identify new facilities and staffing necessary to maintain police protection services throughout the City. Once the plan is adopted, new facilities and staff would be added to the SPD on an as-needed basis to continue to meet service goals. All new law enforcement facilities and staff would be part of the citywide Master Plan and would be funded through the City's General Fund. Similarly, the Master Plan being developed by the SFD will consider the needs for service throughout the City, including the Swanston TVSP project area, and determine when and where new facilities would be constructed as development occurs. Existing fire protection facilities would be used until new facilities are operational. A new fire station would be funded by tax payers (including future residents of the proposed Swanston TVSP project and other future residents in the City) through the City's General Fund. New school facilities would also be funded through development fees and by taxpayers through parcel tax assessments. The environmental analysis of the construction and operation of these new facilities would occur prior to the approval for future fire, police, school, or other governmental facilities. Potential impacts identified during the environmental review for those facilities would be subject to mitigation if feasible. For school facilities, payment of SB 50 fees would constitute sufficient mitigation to reduce school impacts to less than significant. As a result of the above, the proposed Swanston TVSP project in combination with reasonably foreseeable development, would have a less-than-significant cumulative impact on police, fire, and school services.

PS-12. The proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City, would contribute to cumulative increases in demand for libraries and parks and recreation facilities. (LTS)

The proposed Swanston TVSP project would increase the demand for libraries and parks in the North Sacramento and Arden-Arcade areas. The earlier assessment of future library needs (see Impact PS-4 and Impact PS-9) included projected growth in the service area of the libraries that serve the Swanston TVSP project area. That cumulative assessment, including the growth that could be accommodated in the Swanston TVSP project area, showed that at buildout, the nearby libraries serving the Swanston TVSP project area would be at 0.47 sf of library space per capita. This service level would exceed the City's target of 0.4 sf per capita. Accordingly, the cumulative impact on libraries would be less than significant.

Based on the City's Service Level Goal, a 2035 population of 69,736 and 113,602 by 2035 in the North Sacramento and Arden-Arcade areas, respectively,[24] would result in a demand of approximately 458 acres of parkland. Currently, the North Sacramento and Arden-Arcade areas provide 152.8 acres and 63.4 acres of City parkland, respectively, which would not satisfy the City's Service Level Goal. In addition, it is possible that the appropriate categories of parks, such as neighborhood parks, may not be available throughout the City, and therefore, may not adequately provide parks or open space areas to existing or future North Sacramento and Arden-Arcade area residents.

Based on the City's target of 2.5 acres per 1,000 residents, the proposed Swanston TVSP project would be required to provide 16.7 acres of parkland. The proposed Swanston TVSP project would provide about 16.3 acres of parkland, which is short of the City's target. Individual projects within the Swanston TVSP project area would, however, be required to provide park acreage or pay in lieu fees. Therefore, the proposed Swanston TVSP project would contribute minimally to unmet park demand in the North Sacramento and Arden-Arcade areas and the contribution of the proposed Swanston TVSP project to park impacts would not be cumulatively considerable. As a result, cumulative impacts on parks would be considered less than significant.

[24] Sacramento Area Council of Governments, *2035 Projections for Households and Population by Housing Type and Employment by Regional Analysis District*, adopted September 15, 2005.

6.10 UTILITIES

Introduction

This section of the EIR describes existing public utilities within the Swanston TVSP project area and evaluates the effects of the proposed Swanston Station Specific Plan on the existing capacity of these utilities. Impacts are evaluated in terms of the increased demand for public utilities, the actions that may be needed to provide the requisite service levels, and whether those improvements and upgrades could lead to physical environmental effects. The utilities evaluated in this section include the following:

- Solid Waste;
- Wastewater;
- Water Supply; and
- Electricity and Natural Gas.

Storm drainage infrastructure capacity is addressed in Section 6.7, Hydrology and Water Quality.

No comment letters associated with the provision of public utilities were received during the NOP review period.

Primary resources included the Sacramento Regional Transit District Northeast Corridor Facilities Enhancement Initial Study/Environmental Assessment, prepared by EIP Associates (January 2002); the Swanston Station Transit Village Infrastructure Report prepared by Kimley-Horn and Associates, Inc. (July 2008); the City of Sacramento General Plan. These documents are available for review at the City's office. Other resources included the California Integrated Waste Management Board, and data provided by the City of Sacramento and relevant service providers.

Setting

Solid Waste

In 2007, the City of Sacramento disposed a total of 273,216 tons of solid waste. Of this total, 126,614 tons were diverted for recycling (including green waste) and 146,602 tons were sent to landfills.[1] Existing land uses within the Strategic Plan area that could be developed according to the market study prepared for the proposed Swanston TVSP project currently generate 503 tons of solid waste per year, and existing land uses within the Long-Term Plan area that could be developed presently generate 2,990 tons of solid waste per year (see Table 6.10-1).

[1] Chris Thoma, Solid Waste Division, City of Sacramento Department of Utilities, e-mail communication November 18, 2008.

Table 6.10-1
Existing Solid Waste Generation in the Swanston TVSP Project Area

	Residents/Area[a]	Generation Rate	Waste in Pounds	Waste in Tons
Land Use – Strategic Plan				
Residential	57 residents[b]	5 lbs/person/day	285	0.14
Commercial	130,530 sf	2.5 lbs/100 sf/day	3,263	1.63
Warehouse	147,690 sf	5 lbs/1000 sf/day	738	0.37
Total per day			**4,287**	**2.14**
Total per year			**1,564,646**	**782**
Land Use – Long-Term Plan				
Residential	339 residents[c]	5 lbs/person/day	1,695	0.85
Commercial	292,306 sf	2.5 lbs/100 sf/day	7,308	3.65
Office	205,683 sf	1 lbs/100 sf/day	2,057	1.03
Industrial	570,843 sf	5 lbs/1000 sf/day	2,854	1.43
Total per day			**13,914**	**6.96**
Total per year			**5,078,498**	**2,539**

Source: Marty Strauss, Solid Waste Division, City of Sacramento, October 8, 2007 and August 18, 2008.

Notes:

a. Only includes land uses within the Strategic Plan and Long-Term areas that would be rezoned and the uses modified.

b. Based on 22 residential units at 2.57 residents per unit.

c. Based on 132 residential units at 2.57 residents per unit.

Solid waste in the Swanston TVSP project area is collected by City and permitted private haulers. The City offers both commercial and residential solid waste collection services. Construction and demolition waste is collected by private companies. Commercial solid waste collected by the City is transported to one of two transfer stations for processing: the Sacramento Recycling and Transfer Station owned by BLT Enterprises, which is permitted for a maximum daily disposal of 2,500 tons;[2] and the North Area Recovery Station, owned by the County of Sacramento Public Works Department, which accepts a maximum of 2,400 tons per day of construction/demolition, industrial, and green materials, tires, wood waste, and mixed municipal waste.[3] From the transfer stations, the waste is then transported to the Lockwood Regional Landfill located in Sparks, Nevada. The Lockwood Landfill is a Class I landfill that currently accepts an average of 7,700 tons of solid waste per day, 800 tons of which come from the City of Sacramento. The Lockwood Landfill does not have maximum daily disposal limits, and it has a remaining capacity of 32.5 million tons. The landfill currently operates on a 550-acre site; however, to accommodate planned future growth, the process for expansion to 1,100 acres is underway and should be completed by 2008.[4]

2 CIWMB, *Transfer Station Profile*, www.ciwmb.ca.gov, Accessed September 5, 2007.

3 CIWMB, *Transfer Station Profile*, www.ciwmb.ca.gov, Accessed September 5, 2007.

4 City of Sacramento, *Environmental Impact Report for the Township 9 Subdivision*, SCH#2006072007, May 2006, p. 6.10-2.

Residential and municipal solid waste is transported to the Sacramento County (Kiefer) Landfill, operated by the County Department of Public Works, which is the primary solid waste disposal facility in Sacramento County. Kiefer Landfill, categorized as a Class III facility, also 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 86,163,462 cubic yards (73 percent). The landfill has an estimated closure date of 2064.

Construction and demolition waste and commercial waste that is collected by private companies is disposed at a variety of facilities, including the Sacramento County Kiefer Landfill, the Yolo County Landfill, Forward Landfill, L and D Landfill, and Florin Perkins Landfill. Private haulers can deliver waste to the landfill of their choice and base the decision on market conditions and capacity.

Wastewater

The focus of this wastewater section is on the capacity of City systems for collection, conveyance, and treatment of wastewater flows from the Swanston TVSP project area. Issues associated with drainage and associated water quality are evaluated in Section 6.7, Hydrology and Water Quality. Information for this section comes from the infrastructure report prepared for the proposed Swanston Station Specific Plan, as well as information provided by the Sacramento Regional County Services District and the Sacramento County Sanitation District.

Portions of the Swanston TVSP project area are served by either the City of Sacramento or Sacramento Area Sewer District (SASD). The area west of the Union Pacific railroad tracks is within the City's service area, while the area east of the railroad is in the SASD service area. While the collection system combines stormwater and wastewater in other portions of the City, the Swanston TVSP project area is served by separate storm and sanitary sewer systems.

The Kimley-Horn evaluation identified pipes in the existing Swanston TVSP project area that were less than the current City standard of 8-inch minimum diameter.[5] Existing wastewater lines in the Swanston TVSP project area are shown in Figure 2-15, in Chapter 2, Project Description. Existing wastewater flows as estimated by Kimley-Horn are presented by service provider in Table 6.10-2. Existing wastewater generated by land uses within the Strategic Plan area that could be developed according to the market study prepared for the proposed Swanston Station Specific Plan is currently 0.133 mgd, and existing wastewater generated by land uses within the Long-Term Plan area that could be developed is presently 0.463 mgd (see Table 6.10-2).

[5] Kimley-Horn and Associates, Inc*, Swanston Station Transit Village Infrastructure Report*, July 2008, p. 37.

Table 6.10-2
Existing Wastewater Flows in the Swanston TVSP Project Area

Service Area	Existing Average Daily Sewer Flow (mgd)	
	Strategic Plan Area[a]	Long-Term Plan Area[a]
City of Sacramento	0.133	0.393
SASD	0	0.070
Total	**0.133**	**0.463**

Source: Kimley-Horn and Associates, Inc. *Swanston Station Transit Village Infrastructure Report*, July 2008, Appendix E, adapted by PBS&J, November 2008.

Note:

Only includes land uses within the Strategic Plan and Long-Term areas that would be rezoned and the uses modified.

City of Sacramento Service Area. As mentioned above, the Strategic Plan area as well as the portion of the Long-Term Plan area that lies west of the railroad tracks is served by the City of Sacramento. Wastewater lines in the Strategic Plan area convey only wastewater and do not also handle stormwater as occurs elsewhere in the City. The wastewater flows from the project area are directed to the Sacramento Regional Wastewater Treatment Plant (SRWTP) for treatment.

The SRWTP, which is located just south of the city limits, is owned and operated by the Sacramento Regional County Services District (SRCSD). It provides regional sewage treatment for the entire City. SRWTP is a high-purity oxygen activated sludge facility, and 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 150 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. 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.

SASD Service Area. The portion of the Long-Term Plan area that is east of the Union Pacific railroad tracks is serviced by SASD. While SASD does not have a minimum pipe diameter, the desired minimum of 8 inches is assumed based on City standards.[6] The SASD service area is divided into 10 trunk sheds which are based on the collection systems of the individual sewer districts from which SASD was originally formed. Each trunk shed consists of a number of hydraulically independent systems, each discharging into the SRCSD interceptor system. SASD flows are also treated at the SRWTP. According to the SASD Sewerage Facilities Expansion Master Plan dated March 2002, there are capacity deficiencies in portions of the Arden/North Highlands trunk system because it is generally an older sewer system that is subject to substantial amounts of infiltration/inflow during wet weather.

[6] Kimley-Horn and Associates, Inc, *Swanston Station Transit Village Infrastructure Report*, July 2008, p. 38.

The SASD Master Plan identifies four phases of a Capital Improvement Program (CIP) in which improvements to trunk facilities would occur. Trunk expansion in the vicinity of the Long-Term Plan area. would occur in Phase 2 of the Master Plan, between 2006 and 2010.[7]

Water Supply

This section assesses the expected water demand resulting from the proposed Swanston TVSP project, evaluates the effects of the proposed Swanston TVSP project on existing and future water infrastructure, and recommends mitigation measures where appropriate. Water demands in the Swanston TVSP project area are provided by infrastructure report prepared for the proposed Swanston Station Specific Plan.

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 the City diverts 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 between the City and the United States Bureau of Reclamation. 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 include five water rights permits issued by the State Water Resources Control Board or it 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 for both permits is 79,500 acres within and adjacent to the City.

[7] Montgomery Watson, Sewerage Facilities Expansion Master Plan, Executive Summary, October 2000, Figure 8, Page 21.

The final two permits (Permits 11359 and 11360) authorize re-diversion for consumptive uses of American River tributary water previously diverted by the Sacramento Municipal Utility District's (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 place of use 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 Sacramento River Water Treatment Plant (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 U.S. Bureau of Reclamation (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 (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 6.10-3. The contract also specifies an annual build-up schedule to this maximum amount, as shown in Table 6.10-4; the maximum diversion specified for 2005 is 205,000 AFA.

Table 6.10-3
Settlement Contract 2030 Maximum Diversion

		Maximum Permitted Diversion	
Permit	**Supply Source**	**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.

Table 6.10-4
Settlement Contract Maximum Diversion Schedule (afa)

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 of storage capacity in 1963 and building up, more or less linearly, to payment for the use of 90,000 acre-feet 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. 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 Water Forum Agreement (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 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 million gallons per day (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 FWTP and 180,000 AFA at the SRWTP, the current drought limiting scenario allows a surface water production of 230,000 AFA.

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.[8]

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. The potential completion date of a new Sacramento WTP is within 10 to 15 years, prior to buildout in 2030 of Sacramento's General Plan.

Groundwater. The City maintains 32 wells for potable use; 23 wells are actively used to supply drinking water.[9] The total capacity of the wells is 22 MGD, and produces up to 24,000 AFA. The 2000 to 2005 annual average groundwater pumping was 22,992 acre-feet.[10] The wells pump primarily from the Department of Water Resources (DWR) North American Subbasin, with two active drinking water wells pumping from the South American Subbasin.

The North American Subbasin includes the Swanston TVSP 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.[11,12]

Within these programs, the SGA and the Central Sacramento County Groundwater Forum (CSCGF) will continually assess the status of the groundwater basin and make appropriate management decisions to sustain the basin. 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 in the North American

---

8 Initial Alternatives Report. Final Version, March 2005. Sacramento River Reliability Study. Updated by personal communication with Jim Peifer, City of Sacramento and Sammie Cervantes, USBR, August 9, 2007.

9 Dan Sherry, City of Sacramento, Utilities Department. Status of groundwater wells, June 23, 2005.

10 Calculated from the City of Sacramento, Department of Utilities, Operational Statistics Annual Reports.

11 Western Placer County Groundwater Storage Study. Final Report. December 2005, p. 3-9.

12 Sacramento Groundwater Authority, Groundwater Management Plan, 2003, p. 17.

Subbasin.[13] 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.

Based on the information above, the supply of groundwater from which the City's wells pump groundwater is sufficient to meet cumulative groundwater demands projected through 2030 for the North American Subbasin, 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.[14] 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.[15] 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 SRWTP and the FWTP on the American River. The WTPs operate as demands dictate; in other words, treatment is directly related to consumer demands. The SRWTP 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 FWTP, 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). The City is currently investigating those improvements necessary to achieve a firm capacity of 200 MGD. The 2006 UWMP states that the plant would be operational 334 days a year and could produce 205,000 AFA.[16]

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 SRWTP; peak demand totaled 232 MGD, 96 MGD at FWTP and 119 MGD at SRWTP,[17] and an additional 17 MGD from groundwater. The total amount of surface water and groundwater supplied in 2006 was 138,671 AF (an average daily demand of approximately 125 MGD).[18] Table 6.10-5 presents the City's historical water deliveries.

---

13 Central Sacramento County Groundwater Management Plan. 2006, p. 1-4.
14 City of Sacramento, Urban Water Management Plan, 2000, p. 2-7.
15 City of Sacramento Utilities Department, Annual Report, Operational Statistics Fiscal Year 2005/2006.
16 City of Sacramento, Urban Water Management Plan, August 2006, p. 5-3.
17 City of Sacramento Utilities Department, Annual Report, Operational Statistics Fiscal Year 2005/2006.
18 City of Sacramento Utilities Department, Annual Report, Operational Statistics Fiscal Year 2005/2006.

Table 6.10-5
City of Sacramento Water Deliveries

	Surface Water and Groundwater Supplies[a]			Total Water Delivered[a]				
Year	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[b]	NA	120,150	18,522	239.9	1.21	138,671	123.5	-0.2%

Source: Adapted from City of Sacramento, Department of Utilities, Operational Statistics Reports, PBS&J, 2007.

Notes:

a. Other data from corresponding annual reports.

b. City of Sacramento, Department of Utilities, Operational Statistics Report, 2005/2006.

N/A = Not available.

Existing water demand as estimated by Kimley-Horn is presented in Table 6.10-6. Water demand for land uses within the Strategic Plan area that could be developed according to the market study prepared for the proposed Swanston Station Specific Plan is currently 44,609 gpd while water demand for land uses within the Long-Term Plan area that could be developed is presently 256,619 gpd (see Table 6.10-6).

Table 6.10-6
Existing Water Demand in the Swanston TVSP Project Area

Study Area	Existing Average Daily Water Demand (gpd)
Strategic Plan	44,609
Long-Term Plan	256,619
Total	**301,228**

Source: Kimley-Horn and Associates, Inc. *Swanston Station Transit Village Infrastructure Report*, July 2008, Appendix G, adapted by PBS&J, November 2008.

Note:

Only includes land uses within the Strategic Plan and Long-Term areas that would be rezoned and the uses modified.

Water Storage. Water storage is utilized 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 SRWTP and 20 mg at the FWTP). 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.[19]

Water Distribution System. 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 utilized to transfer water to and from the storage reservoirs to meet changing daily and/or seasonal demands.

Water service for the proposed Swanston TVSP project would be provided by the City of Sacramento through connections to existing transmission lines along El Camino Avenue, Arden Way, Calvados Avenue, Erickson Street, and Clay Street. Figure 2-14 in Chapter 2, Project Description, shows the transmission lines in the Swanston TVSP project area, as well as other lines providing water supply.

Electricity and Natural Gas

This section describes the existing distribution system for electricity and natural gas in the Swanston TVSP project area. Information for this analysis was obtained from the Sacramento General Plan, the Sacramento Municipal Utility District (SMUD), and the Pacific Gas and Electric Company (PG&E).

Regional Electric Energy Supplies. In the 2005 Energy Policy Report,[20] 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.

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

[19] City of Sacramento Utilities Department, Annual Report, Operational Statistics Fiscal Year 2005/2006.
[20] California Energy Commission, *2005 Integrated Energy Policy Report*, 2005.

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.

The 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.

Local Electrical Energy Supplies and Programs. Electrical service is provided to the Swanston TVSP project area by 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 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.[21] In 2006, SMUD completed Phase I of the Cosumnes Power Plant, which, upon completion of Phase II, is expected to support growth in the Sacramento area for decades to come. The 500-megawatt plant is located on the site of the decommissioned Rancho Seco nuclear power plant. Construction of Phase II of the power plant, which would add an additional 500-megawatt output, is planned for development should the need arise.

SMUD offers a variety of programs that serve to preserve natural resources and reduce pollution. Through SMUD's Greenergy program, members 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 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 Upper American River Project (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.

Existing land uses within the Strategic Plan area for parcels that may be developed according to the market study prepared for the proposed Swanston TVSP project currently demand 1045.3 kilowatts of electricity per year, and existing land uses within the Long-Term Plan area that could be developed presently demand 6284.5 kilowatts of electricity per year (see Table 6.10-7).

[21] Sacramento Municipal Utilities District website, <http://www.smud.org/about/index.html> Accessed November 9, 2007.

Table 6.10-7
Existing Electricity Demand in the Swanston TVSP Project Area

	Number of Units/Area[a]	Demand Factor	Estimated Electrical Demand
Land Use - Strategic Plan			
Residential	22 du	4.22 kW/du/year	92.8 kW/year
Commercial	130,530 sf	0.0056 kW/sf/year	731.0 kW/year
Warehouse	147,690 sf	0.0015 kW/sf/year	221.5 kW/year
Total			**1,045.3 kW/year**
Land Use – Long-Term Plan			
Residential	132 du	4.22 kW/du/year	557.0 kW/year
Commercial	292,306 sf	0.0056 kW/sf/year	1,637 kW/year
Office	205,683 sf	0.00046 kW/sf/year	94.6 kW/year
Industrial	570,843 sf	0.007 kW/sf/year	3995.9 kW/year
Total			**6,284.5 kW/year**

Source: Gary Shimizu, P.E., SMUD Distribution Services, Written communication, November 1, 2006, and Personal communication, August 18, 2008.

Notes:

Electricity demand based on calculations from SMUD.

a. Only includes land uses within the Strategic Plan and Long-Term Plan areas that would be rezoned and the uses modified.

Regional Natural Gas Supplies. PG&E provides electricity and natural gas distribution, electricity generation, transportation and transmission, natural gas procurement, transportation, and storage. Services are provided within 48 counties in California with a total service area of approximately 70,000 square miles in northern and central California. The company's service area stretches from Eureka in the north to Bakersfield in the south, to the Pacific Ocean in the west and the Sierra Nevada to the east. The utility has 123,054 circuit miles of electric distribution lines and 18,610 circuit miles of interconnected transmission lines. The utility provides services with 40,123 miles of natural gas distribution pipelines and 6,135 transportation pipelines.[22]

PG&E serves approximately 4.1 million natural gas distribution customers. During the winter, approximately 70 percent of natural gas supplied is imported from Canada, and the balance is supported by California production wells. During the summer, this ratio is reversed. Also during summer, gas prices are lower so gas is stored in underground holders for use during winter peak use periods. It is anticipated that natural gas distribution lines in new developments will be placed underground in accordance with CPUC rules. However, the construction or reconstruction of overhead distribution facilities is periodically required to supply the underground circuits within new developments.

[22] Pacific Gas & Electric, <http://www.pge.com>, Accessed November 9, 2007.

California has not experienced a widespread natural gas shortage in many years, as most of its statewide natural gas supply (87 percent) is imported. Current supplies are adequate to meet demands, although natural gas storage could be expanded to improve reliability.

Local Natural Gas Supplies. Gas service is provided to the Swanston TVSP project area by 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.[23] 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 land uses within the Strategic Plan area for parcels that could be developed according to the market study prepared for the proposed Swanston Station Specific Plan currently demand 278,736 therms of natural gas per year, and existing land uses within the Long-Term Plan area that could be developed presently demand 2,649,802 therms of natural gas per year (see Table 6.10-8).

Table 6.10-8
Existing Natural Gas Demand in the Swanston TVSP Project Area

	Number of Units/Area[a]	Demand Factor	Estimated Natural Gas Demand
Land Use – Strategic Plan			
Residential	22 du	1,440 Therms/du/year	31,680 Therms/year
Commercial	2.81 acres	63,600 Therms/acre/year	178,716 Therms/year
Warehouse	6.70 acres	10,200 Therms/acre/year	68,340 Therms/year
Total			**278,736 Therms/year**
Land Use – Long-Term Plan			
Residential	132 du	1,440 Therms/du/year	190,080 Therms/year
Commercial	19.17 acres	63,600 Therms/acre/year	1,219,212 Therms/year
Office	13.50 acres	63,600 Therms/acre/year	858,600 Therms/year
Industrial	37.44 acres	10,200 Therms/acre/year	381,910 Therms/year
Total			**2,649,802 Therms/year**

Source: EIP Associates, *North Roseville Specific Plan DEIR 1997,* 2003; EIP Associates, *University of California, Los Angeles 2002 Long Range Development Plan Draft Environmental Impact Report,* February 2003, EIP Associates, *West Roseville Specific Plan DEIR*, 2004.

Note:

a. Only includes land uses within the Strategic Plan and Long-Term Plan areas that would be rezoned and the uses modified.

[23] Pacific Gas and Electric Company website, <http://www.pge.com/> Accessed November 9, 2006.

Applicable Plans and Policies

Federal

Federal Clean Water Act. The Federal Clean Water Act (CWA) and regulations set forth by the California Department of Health Services and SWRCB are aimed primarily at discharges of effluent to surface waters. Discharges to waters regulated under the CWA are subject to the requirements of the National Pollutant Discharge Elimination System (NPDES) permitting process, pursuant to Section 402 of the CWA. In addition, Section 303 of the CWA requires individual states to adopt water quality standards which "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such values." The CWA was put into law in 1972.

U.S. Environmental Protection Agency (EPA). The EPA established primary drinking water standards in the Clean Water Act (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

Assembly Bill 939 (AB 939). Regulation affecting solid waste disposal in California is embodied in Public Resources Code Title 14, known as the Integrated Waste Management Act originally adopted in 1989. 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.

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 divert the total solid waste generated within each jurisdiction by 50 percent of the total waste generated in the Year 2000. The diversion rate is adjusted annually for population and economic growth when calculating the percentage achieved in a particular jurisdiction.

State Clean Water Act. California had previously enacted its own version of the federal law in 1969, when the state's legislature adopted the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The Porter-Cologne Act set out the functions of the State Water Resources Control Board with respect to water quality control. The Act also established nine regional water quality control boards (Regional Boards), with the Central Valley Regional Board having jurisdiction of the Swanston TVSP project area. Each of these Regional Boards is charged with preparing a water quality plan (Basin Plan) for that region, as described under California Water Code (Water Code) Section 13240. Basin Plans have three components; they list the beneficial uses to be protected, the water quality objectives

that have been established; and outline an implementation program to ensure that these objectives are met. The Central Valley Regional Board's Basin Plan covers the Sacramento and San Joaquin River Basins. The Swanston TVSP project area discharges to the Sacramento River south of the confluence of the American River. According to the Central Valley Basin Plan, this is within the legal boundary for the Sacramento-San Joaquin Delta (Delta) and, therefore, the water quality objectives listed in the Basin Plan for the Delta apply.

Urban 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 (WSAs). 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 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 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 Swanston TVSP project area. SB 610 requires the identification of the public water supplier; the City is the public water supplier to the Swanston TVSP project area.

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 square feet (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.

Senate Bill 221, Written Verification of Water Supply. Government Code Section 66473.7(a)(1) requires an affirmative written verification of sufficient water supply. Senate Bill 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. Since the proposed project is a Specific Plan and does not involve a major subdivision, SB 221 would not apply to the proposed Swanston Station Specific Plan; it may, however, apply to subsequent development that could occur in accordance with the proposed Specific Plan.

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, 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.[24] The public water system operators are also required to analyze

[24] California Department of Water Resources, California's Groundwater, Bulletin 118, 2003.

samples for unregulated contaminants, and to report other contaminants that may be detected during sampling.

California Public Utilities Commission (CPUC). 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 General Plan. The following goals and policies from the Public Facilities and Services Element are applicable to the proposed Swanston TVSP project:

Solid Waste

Goal A: Provide adequate solid waste disposal facilities and services for collection, storage and reuse of refuse.

Sanitary Sewers

Goal A: Provide adequate sewer service for all urbanized or developing neighborhoods.

Policy 1: Provide and upgrade sewer facilities where needed to newly developing areas in the City.

Policy 2: Develop plans for extension of sewer lines to existing developed areas where sewer service is lacking.

Policy 3: Work with property owners to develop financing arrangements in order to provide sewer services.

Water

Goal A: Provide and improve water supply facilities to meet future growth of the City and assure continued supply of safe potable water.

Policy 5: Provide water service meeting or exceeding State and federal regulatory agency requirements.

Utility Services

Goal A: Continue to improve and provide communication and utility services to all areas of the City.

Policy 2: Support and encourage the utility companies to place utilities underground in new development areas.

Source Reduction and 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 consistently met the 50 percent diversion mandated by AB 939 every year since 2000 and is currently looking into ways to increase solid waste diversion rates to up to 75 percent.[25]

Sacramento Regional Solid Waste Authority (SWA) Ordinance No. 8. 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. Ordinance 8 was established to regulate the transport, transfer, disposal, and recycling of commercial solid waste kept or accumulated within the SWA region. The ordinance was put into place for the purposes of ensuring the orderly operation of solid waste transport and disposal, and also to minimize adverse effects on human health and the local environment. Sections 24 and 25 of Ordinance 8 specify that commercial franchisees must divert 30 percent of their commercial solid waste

[25] Tyler Stratton, Solid Waste Division, Department of Utilities, City of Sacramento, personal communication, May 31, 2006.

for recycling, and establishes a recycling incentive fee for tonnage shortfall of waste diversion. Section 35 provides restrictions for solid waste disposal, including prohibiting the dumping of solid waste on any property, road, or highway not designated by the ordinance for solid waste disposal or dumping.

Sacramento Municipal Code. Chapter 17.72 of the City of Sacramento Municipal Code outlines 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.[26]

City of Sacramento Design Standards. Sections 9 and 13 of the City's Design Standards set forth requirements regarding the design and operation of sanitary sewer and water distribution facilities, respectively. Section 9 includes standards for pipe design and specific requirements for residential, commercial and industrial wastewater service while Section 13 includes standards for pipe design, fire hydrants, and specific requirements for residential, commercial and industrial water service.

Impact Assessment and Mitigation Measures

Methods of Analysis

Solid Waste. The analysis uses the following solid waste generation rates used by the City of Sacramento to determine the proposed Swanston TVSP project's impact on solid waste facilities.[27]

- Commercial = 2.5 lbs/100 sf/day
- Light Industrial/Warehouse = 5 lbs/1,000 sf/day
- Residential = 5 lbs/person/day

It should be noted that the solid waste generation rate for commercial office waste is lower (1.0 lb/100 sf/day) than the general commercial rate. However, because the proportion of future commercial office facilities as opposed to other commercial facilities cannot be projected, the commercial waste generation rate noted above would yield a conservative estimate of project impacts. Residential solid waste generation is derived by multiplying the potential number of dwelling units that could occur in the Swanston TVSP project area by the City's guideline of 2.57 people per housing unit (this average household size reflects the type of housing proposed in the future transit village).

Wastewater. The proposed Swanston TVSP project could result in a variety of land uses and increases in population that would generate wastewater. This analysis used the equivalent single-family dwelling

[26] City of Sacramento, Municipal Code, Chapter 17.72, *Recycling and Solid Waste Regulations*, <http://ordlink.com/codes/sacramento/index.htm>, Accessed June 19, 2006.

[27] City of Sacramento, *Environmental Impact Report for the Township 9 Subdivision*, SCH#2006072007, May 2006, p. 6.10-5.

units (ESD) for proposed land uses to generate future wastewater volumes.[28] The ESD is a unit that refers to the average wastewater flow generated by a single-family dwelling unit. Any land use type can be converted to these units. For this analysis, the conservative estimate of 300 gallons per day (gpd) per ESD per parcel was used. This is the combined conservative estimate of three persons per household times 100 gallons per day per person, as set forth in the Kimley-Horn infrastructure evaluation that is available for review at the City's office.

Water. The analysis in this section focuses on the nature and magnitude of the change in levels of water use associated with the implementation of the proposed Swanston TVSP project as compared to existing and projected water use in the City's water service area. To determine potential impacts, water demands were estimated from demand projection calculations and quantitative evaluation of data for the proposed Swanston TVSP project, along with existing land uses, approved projects, and proposed development.

The impacts described below address development that could occur within the Strategic Plan area and development that could occur within the Long-Term Plan area. An accurate projection of water demands can be developed using demand factors based on land use sectors. The expected water use from the Swanston TVSP project area was determined by analyzing the zoning designation and then assigning a demand factor for each use. The demand reported here is abstracted from the Kimley-Horn and Associates infrastructure evaluation, which is available for review at the City's office.

Energy. To determine whether implementation of the proposed Swanston TVSP project would result in impacts on electricity and natural gas supplies, the projected increase in energy demand for each utility was analyzed and calculated using a per-square-foot/per-acre or per-dwelling-unit consumption rate.

Standards of Significance

A significant impact would occur if the proposed Swanston TVSP project would:

- 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;
- 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;
- create an increase in water demand of more than 10 million gallons per day;
- substantially degrade water quality; or
- generate stormwater that would exceed the capacity of the stormwater system (this standard is addressed in Section 6.7, Hydrology).

[28] Kimley-Horn and Associates, Inc, *Swanston Station Transit Village Infrastructure Report,* July 2008, Appendix E

Environmental Analysis

In order to determine impacts for each resource, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant impacts to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section, UT refers to Utilities.

Strategic Plan Area — Year 2025

UT-1. Development that could occur within the Strategic Plan area would increase demand for solid waste facilities; however, the increase would not warrant construction or expansion of solid waste facilities. (LTS)

As shown in Table 6.10-9, development that could occur within the Strategic Plan area would result in the generation of approximately 1,178 tons per year, a net increase of about 331 tons per year over existing conditions. The net increase in solid waste from the new uses that could develop in the Strategic Plan area would be below the significance threshold of 500 tons of solid waste per year.

Table 6.10-9
Solid Waste Generation in the Strategic Plan Area

	Units[a]	Generation Rate	Waste in Pounds/Day	Waste in Tons/Day
Proposed New Land Uses				
Residential	941 residents	5 lbs/person/day	4,705	2.4
Commercial	70,000 sf	2.5 lbs/100 sf/day	1,750	0.9
Total per day			**6,455**	**3.2**
Total per year			**2,356,075**	**1,178**
Existing Land Uses that could be Replaced				
Residential	57 residents	5 lbs/person/day	285	0.14
Commercial	147,690 sf	2.5 lbs/100 sf/day	3,692	1.85
Warehouse	130,526 sf	5 lbs/1000 sf/day	653	0.33
Total per day			**4,630**	**2.32**
Total per year			**1,689,950**	**847**
Net Change (per day)			**1,825**	**0.88**
Net Change (per year)			**666,125**	**331**

Source: Marty Strauss, Solid Waste Division, City of Sacramento, October 8, 2007.

Notes:

Numbers do not add due to rounding.

a. Only includes land uses within the Strategic Plan area that would be rezoned and the uses modified.

There is currently capacity to accommodate the solid waste that could be generated within the Strategic Plan area based on the capacity at the Lockwood Landfill. However, as stated above, private waste haulers operate in the City of Sacramento, so the destination of the solid waste is uncertain. Nonetheless, there are several landfills in northern California and northwestern Nevada with adequate capacity that could serve development within the Strategic Plan area.[29] They include the following:

- L and D Landfill, Sacramento County, 5,190,536 cubic yards remaining capacity.
- Sacramento County (Kiefer) Landfill, Sacramento County, 86,163,462 cubic yards remaining capacity.
- Foothill Sanitary Landfill, San Joaquin County, 94,969,466 cubic yards remaining capacity.
- Forward Landfill, San Joaquin County, 40,031,058 cubic yards remaining capacity.
- North County Landfill, San Joaquin County, 13,239,032 cubic yards remaining capacity.
- Hay Road Landfill, Solano County, 22,815,505 cubic yards remaining capacity.
- Potrero Hills Landfill, Solano County, 8,200,000 cubic yards remaining capacity.
- Fink Road Landfill, Stanislaus County, 10,000,000 cubic yards remaining capacity
- Yolo County Central Landfill, Yolo County, 16,122,000 cubic yards remaining capacity.
- Norcal Waste Systems Ostrom Road LF Inc., Yuba County, 11,252,490 cubic yards remaining capacity.
- Lockwood Landfill, Sparks, Nevada, 37,500,000 cubic yards remaining capacity.

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 development that could occur within the Strategic Plan area, other landfills would be available to accept solid waste from the area without substantially affecting capacity.

In compliance with AB 939, the City of Sacramento's Comprehensive Zoning Ordinance contains provisions pertaining to solid waste recycling. In 1991, an amendment was added (Section 3, Chapter 4) to the Zoning Ordinance to address recycling and solid waste disposal requirements for new and existing developments. These provisions require that all commercial (including retail), office, industrial, public/quasi-public, and 5-unit or more multiple-family residential developments prepare a recycling program before issuance of a building permit. The required recycling program also includes the development of a construction plan to identify the recyclable materials being used in the construction of the proposed structures, a demolition plan identifying the proposed recycling of reusable or recyclable building materials in the

[29] California Integrated Waste Management Board, *Active Landfill Profiles*, <www.ciwmb.ca.gov> (November 13, 2007).

demolition of any existing structures, and an educational program about recycling. Development that could occur within the Strategic Plan area 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.

Because there is sufficient capacity at various landfills that could serve development that could occur within the Strategic Plan area and because this development 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.

UT-2. Development that could occur within the Strategic Plan area would result in the generation and discharge of additional wastewater. While the projected increase in wastewater flows would not require modifications at the SRWTP, the projected increase in wastewater flows would require improvements to the wastewater conveyance system. (PS)

Service to the Strategic Plan area is entirely within the City of Sacramento service area; there would be no effect to wastewater services provided by SASD. The net increase in wastewater flows from development within the Strategic Plan area is presented in Table 6.10-10.

The SRWTP is permitted to treat an ADWF of 181 mgd and a daily peak wet weather flow of 392 mgd. Currently, the SRWTP treats an average of 155 mgd. As shown in Table 6.10-10, development that could occur within the Strategic Plan area would generate a net increase of 0.07 mgd of dry weather flows. This increase would not exceed the dry weather capacity of the plant and would not require expansion of the SRWTP. Therefore, development within the Strategic Plan area would not require or result in the construction of new or expanded wastewater treatment facilities, the construction of which could cause significant environmental effects.

Table 6.10-10
Wastewater Flows in the Strategic Plan Area

Service Area	Existing Total Average Daily Sewer Flow (mgd)	Proposed Total Average Daily Sewer Flow (mgd)[a]	Net Increase Total Average Daily Sewer Flow (mgd)
City of Sacramento	0.133	0.205	0.072

Source: Kimley-Horn and Associates, Inc. *Swanston Station Transit Village Infrastructure Report*, July 2008, Appendix E, adapted by PBS&J, November 2008.

Note:

a. Only includes land uses within the Strategic Plan area that would be rezoned and the uses modified.

The increased wastewater flows were applied to the existing wastewater system to determine the adequacy of the pipes in the Strategic Plan area. Improvements identified by Kimley-Horn for the Strategic Plan area include upgrading minor pipes that are less than 8 inches in diameter to 8 inches in diameter and, in general, increasing the 8-inch-diameter lines to 12-inch-diameter

lines. Recommended sewer improvements in this area are presented in Figure 2-15 in the Project Description and would primarily affect Dixieanne Avenue, Calvados Avenue, Arden Way, Evergreen Street, Green Street, and Lexington Street. According to the proposed Swanston Station Specific Plan, the improvements would be funded through the City's Capital Improvement Program, special financing mechanisms, or developers, if required by the City. The proposed Swanston Station Specific Plan acknowledges funding constraints with each of these sources, and identifies several other sources for the City to explore. The improvements would be implemented at a schedule to be determined by the City to serve development within the Swanston TVSP project area.[30] The infrastructure report prepared for the proposed Swanston Station Specific Plan focuses on the improvements needed to serve the project area; there may be downstream impacts from improvements in the project area. These downstream impacts could be potentially significant.

In order to accommodate the new development that could occur within the Strategic Plan area, construction of expanded wastewater conveyance facilities would be needed, the construction of which could cause significant environmental effects. These impacts are typical of construction activities, and include temporary traffic delays, noise, disturbance to street trees and possibly nesting birds, fugitive dust emissions, and possible erosion and hazardous materials exposure. These impacts are addressed in other technical sections in Chapter 6 of this EIR and are mitigated to less than significant through standard construction best management practices.

As required by law, all utility connections would be constructed in accordance with City standards to ensure an adequately sized and properly constructed sewer conveyance system.

MITIGATION MEASURE. The following measure would reduce downstream impacts to the wastewater collection system to less than significant.

UT-2.1 *Sewer Study and Necessary Improvements.* Prior to occupancy of new development, project applicants shall perform individual sewer studies to confirm that wastewater lines that serve the project as well as downstream would operate acceptably in accordance with Section 9 of the City Design Standards. If the sewer study determines that a project would result in capacity deficiencies that would not comply with the City's standards, then a corrective program shall be required. The program shall include participation by the project applicant and result in improvements that enable the wastewater collection system to satisfy the City's design standards.

UT-3. Development that could occur in the Strategic Plan area would increase water demand but would not exceed available sources of water supply. While the projected increase in water demand would not require modifications to water supply deliveries or the City's water treatment plants, improvements to the wastewater conveyance system would be necessary. (LTS)

[30] Sacramento City Department of Utilities, Dave Schamber, personal communication, February 3, 2009.

Table 6.10-11 shows that development that could occur within the Strategic Plan area would potentially use 107.5 acre-feet per year, or 95,977 gpd. This water demand represents a net increase of about 57.5 acre-feet per year, or 51,368 gpd over existing conditions which is below the significance threshold of 10 million gallons per day.

Table 6.10–11
Water Demands in the Strategic Plan Area

	MGD	Acre-Feet/Year
Existing Calculated Demand	0.045	50
Projected Water Demand[a]	0.096	107.5
Net Change	**0.051**	**57.5**

Source: Kimley-Horn and Associates, Inc. *Swanston Station Transit Village Infrastructure Report*, July 2008, Appendix G, adapted by PBS&J, November 2008.

Note:

a. Only includes land uses within the Strategic Plan area that would be rezoned and the uses modified.

Development that could occur within the Strategic Plan area 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. Overall water consumption for 2006 (the most recent year for which data are available) totaled 138,671 AF, which is 75,390 AF less than the maximum diversion amount specified in the USBR settlement contract for 2007 (214,000 AFA). If the increased demand from development within the Strategic Plan area is added to the 2006 demand of 138,671, the total demand in the City would be 138,729 AFA, which is 75,271 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 will continue to increase simultaneously with customer demands. As a result, the City has sufficient water supply under its water rights and entitlements and secured in the City/USBR settlement contract to serve the Strategic Plan area.

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 average daily demand from development that could occur within the Strategic Plan area is 0.10 mgd and the net change in demand from existing is expected to be 0.05 mgd. Maximum day demands would be greater. It should be noted that this was accounted for in the City's 2006 UWMP maximum day demand projections through the year 2030. Adding the water demand from the Strategic Plan area to the City's water demand results in a water demand of approximately 232.05 mgd. The SRWTP and FWTP 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 FWTP are limited by the City's WFA

PSA. In either case, the City's maximum combined treatment capacity is sufficient to serve development within the Strategic Plan area, and additional treatment capacity, such as the capacity that would be provided by the water treatment plant being evaluated as part of the SRWRS, would not be required.

Water service in the Strategic Plan area would be provided by the City of Sacramento through connections to the existing transmission water lines along Arden Way, Dixieanne Avenue, El Camino Avenue, Clay Street, Erickson Street and Manning Street. The City's water infrastructure standard for the Swanston TVSP project area is a minimum 8-inch diameter water main, with 12-inch mains spaced in grid intervals of one half mile. Many of the existing water mains are 2-inch, 4-inch, and 6-inch, which are undersized for providing fire protection. No immediate improvements to the current water distribution system are necessary to ensure water supply to the Strategic Plan area. However, future development would require upsizing of existing water mains to meet City standards for fire protection. In particular, adequate water pressure must be available to meet fire flow requirements per City requirements.

Improvements identified by Kimley-Horn for the Strategic Plan area include upgrading minor pipes that are less than 8 inches in diameter to 8 inches and, in general, increasing the 8-inch-diameter lines to 12-inch-diameter lines. Recommended water line improvements in this area are presented in Figure 2-14 in the Project Description and would primarily affect Dixieanne Avenue, Calvados Avenue, Erickson Street, Evergreen Street, and Green Street. According to the proposed Swanston Station Specific Plan, the improvements would be funded through the City's Capital Improvement Program. The proposed Swanston Station Specific Plan acknowledges funding constraints, and identifies several other sources for the City to explore. The improvements would be implemented at a schedule to be determined by the City to serve development within the Swanston TVSP project area.[31]

In order to accommodate the new development that could occur within the Strategic Plan area, construction of expanded water distribution facilities would be needed, the construction of which could cause significant environmental effects. These impacts are typical of construction activities, and include temporary traffic delays, noise, disturbance to street trees and possibly nesting birds, fugitive dust emissions, and possible erosion and hazardous materials exposure. These impacts are addressed in other technical sections in Chapter 6 of this EIR and are mitigated to less than significant through standard construction best management practices.

In summary, the City has sufficient treatment capacity to serve development that could occur within the Strategic Plan area. On-site water conveyance and delivery improvements to meet the City's 8-inch water main standard are included in the project design and would be approved by the Department of Utilities prior to installation. However, hydraulic modeling is recommended to be performed for the study area to confirm that the main sizes would be adequate to meet City standards.[32] As appropriate, any impacts associated with the installation

[31] Sacramento City Department of Utilities, Dave Schamber, personal communication, February 3, 2009.
[32] Kimley-Horn and Associates, Inc., *Swanston Station Transit Village Infrastructure Report*, July 2008, p. 43.

of water supply infrastructure on-site are evaluated as part of the construction-related impacts analyzed in the other technical sections in Chapter 6 of this EIR.

MITIGATION MEASURE. None required; however, implementation of the following mitigation measure would ensure that adequate water supply is provided to new development prior to occupancy. The mitigation measure would also ensure that adequate water pressure would be provided under fire flow conditions. This would ensure that impacts remain less than significant.

UT-3.1 *Hydraulic Modeling and Necessary Improvements.* Prior to occupancy of new development, project applicants shall perform hydraulic modeling to confirm that water main sizes are adequate to meet the following City standards:

- A maximum velocity of 10 feet per second
- Fire flow demands of:
  1. 1,500 gallons per minute for single-family
  2. 2,000 gallons per minute for multi-family
  3. 3,000 gallons per minute for commercial/industrial

The hydraulic modeling shall be submitted to the City's Department of Utilities for confirmation and approval. If the hydraulic modeling indicates that improvements to the water distribution system are needed, these improvements will become conditions of project approval. As appropriate, major improvements that benefit a number of property owners may be funded through the City's Capital Improvement Program; otherwise, the Department of Utilities might require project applicants to improve the system on their own.

UT-4. Development that could occur within the Strategic Plan area would have a less-than-significant impact on electricity generation, transmission, or distribution, because the increase in electrical demand would not warrant construction or expansion of facilities. (LTS)

Development that could occur within the Strategic Plan area would result in a net increase in the use of electricity in the Strategic Plan area to light, heat, and air condition new development. Based on the information provided in Table 6.10-12, the net increase in total annual electricity consumption in the Strategic Plan area is estimated to be approximately 1.0 MW per year.

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. There are existing electrical transmission facilities in the Swanston TVSP project area. Because the increase in demand for energy from development that could occur within the Strategic Plan area would be relatively small, it is not anticipated that

additional electrical generation facilities would be required. However, if additional facilities are required, the type and location of those facilities cannot be determined at this time. In addition, the construction and operation of those facilities would be the responsibility of SMUD, which would also be responsible for any necessary environmental documentation for those new facilities.

Table 6.10-12
Electricity Demand in the Strategic Plan Area

	Units[a]	Demand Factor	Estimated Electrical Demand
Proposed New Land Uses			
Residential	366 du	4.22 kW/du/year	1,545 kW/year
Commercial	70,000 sf	0.0056 kW/sf/year	392 kW/year
Total			**1.9 MW/year**
Existing Land Uses that could be Replaced			
Residential	22 du	4.22 kW/du/year	92.8 kW/year
Commercial	147,690 sf	0.0056 kW/sf/year	827 kW/year
Warehouse	130,526 sf	0.0015 kW/sf/year	1.96 kW/year
Total			**0.9 MW/year**
Net Change			**1.0 MW/year**

Source: Gary Shimizu, P.E., SMUD Distribution Services, Written communication, November 1, 2006.

Notes:

Electricity demand based on calculations from SMUD.

a. Only includes land uses within the Strategic Plan area that would be rezoned and the uses modified.

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. Construction activities for the installation of new electrical lines and facilities would be similar to those for other utility upgrades required to accommodate development that could occur within the Strategic Plan area. Impacts from these construction activities could include temporary traffic delays, noise, disturbance to street trees and possibly nesting birds, fugitive dust emissions, and possible erosion and hazardous materials exposure. These impacts are addressed in other technical sections in Chapter 6 of this EIR and are mitigated to less than significant through standard construction best management practices. As a result, future development within the Strategic Plan area would not result in substantial physical effects due to the provision of electrical service, so that the impacts would be considered less than significant.

UT-5. Development that could occur within the Strategic Plan area would result in a less-than-significant impact on natural gas production, transmission, or storage, because the increase in natural gas demand would not warrant construction or expansion of facilities. (LTS)

Development that could occur within the Strategic Plan area would result in a net increase in the use of natural gas. Based on the information provided in Table 6.10-13, the net increase in total annual natural gas consumption in the Strategic Plan area is estimated to be 350,064 Therms per year.

Table 6.10-13
Natural Gas Demand in the Strategic Plan Area

	Units[a]	Demand Factor	Estimated Natural Gas Demand
Proposed New Land Uses			
Residential	366 du	1,440 Therms/du/year	527,040 Therms/year
Commercial	70,000 sf or 1.6 acres	63,600 Therms/acre/year	101,760 Therms/year
Total			**628,800 Therms/year**
Existing Land Uses that could be Replaced			
Residential	22 du	1,440 Therms/du/year	31,680 Therms/year
Commercial	147,690 sf or 2.81 acres	63,600 Therms/acre/year	178,716 Therms/year
Warehouse	130,526 sf or 6.70 acres	10,200 Therms/acre/year	68,340 Therms/year
Total			**278,736 Therms/year**
Net Change			**350,064 Therms/year**

Source: EIP Associates, *North Roseville Specific Plan DEIR 1997,* 2003; EIP Associates, *University of California, Los Angeles 2002 Long Range Development Plan Draft Environmental Impact Report,* February 2003.

Note:

a. Only includes land uses within the Strategic Plan area that would be rezoned and the uses modified.

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 natural gas is supplied by PG&E from sources in California, Canada, the Permian, San Juan, and Anadarko Basins in the southwestern states, and from the Rocky Mountain area, there has not been an issue of supply within PG&E's widespread service area. Accordingly, PG&E would be able to meet the projected demand from development that could occur within the Strategic Plan area. As a result, impacts would be considered less than significant.

Long-Term Plan Area - Buildout

UT-6. Development that could occur within the Long-Term Plan area would increase demand for solid waste facilities; however, the increase would not warrant construction or expansion of solid waste facilities. (LTS)

As shown in Table 6.10-14, development that could occur within the Long-Term Plan area would result in the production of approximately 7,216 tons of solid waste per year, an increase of about 4,677 tons over existing conditions which is well above the significance threshold of 500 tons of solid waste per year.

The Lockwood Landfill alone currently accepts an average of 7,700 tons of solid waste per day, 2.9 million tons of solid waste per year, and has a remaining capacity of 32.5 million tons, resulting in approximately 11 years remaining capacity for waste. As noted above, plans to double the size of the landfill by 2008 are underway, which would more than double remaining capacity. The permitted capacity for the Kiefer Landfill is 117,400,000 cubic yards (10,815 tons/day) and, as of 2000, the landfill had a remaining capacity of 86,163,462 cubic yards (73 percent). The landfill has an estimated closure date of 2064. If the Lockwood Landfill or Kiefer Landfill cannot serve development that could occur within the Long-Term Plan area, other landfills would be available to accept solid waste from the Swanston TVSP project area without substantially affecting capacity.

Consequently, the increase in waste production from development that could occur within the Long-Term Plan area would likely not require expanded solid waste facilities. Therefore, the impact of development within the Long-Term Plan area on landfill capacity would be less than significant.

Table 6.10-14
Solid Waste Generation in the Long-Term Plan Area

	Units[a]	Generation Rate	Waste in Pounds	Waste in Tons
Proposed New Land Uses				
Residential	5,730 residents	5 lbs/person/day	28,650 lbs/day	14.3 tons/day
Commercial	435,515 sf	2.5 lbs/100 sf/day	10,888 lbs/day	5.4 tons/day
Total per day			**39,538 lbs/day**	**19.8 tons/day**
Total per year			**14,431,324 lbs/year**	**7,216 tons/year**
Existing Land Uses that could be Replaced				
Residential	339 residents	5 lbs/person/day	1,695	0.85
Commercial	292,306 sf	2.5 lbs/100 sf/day	7,308	3.65
Office	205,683 sf	1 lb/100 sf/day	2,057	1.03
Industrial	570,843 sf	5 lbs/1000 sf/day	2,854	1.43
Total per day			**13,914 lbs/day**	**6.96 tons/day**
Total per year			**5,078,498 lbs/year**	**2,539 tons/year**
Net Change (per day)			**25,624 lbs/day**	**12.84 tons/day**
Net Change (per year)			**9,352,826 lbs/year**	**4,677 tons/year**

Source: Marty Strauss, Solid Waste Division, City of Sacramento, October 8, 2007.

Note:

a. Only includes land uses within the Long-Term Plan area that would be rezoned.

UT-7. Development that could occur within the Long-Term Plan area would generate additional wastewater flow in the City of Sacramento and SASD service areas. While the projected increase in wastewater flows would not require modifications at the SRWTP, the projected increase in wastewater flows would require improvements to the wastewater conveyance system. (PS)

At buildout, development that could occur within the Long-Term Plan area would generate a net increase of approximately 0.576 mgd of wastewater (Table 6.10-15). As the SRWTP currently treats 155 mgd and has the capacity to treat 181 mgd, the net increase in wastewater from development within the Long-Term Plan area is not expected to require expansion of the SRWTP facilities. Therefore, development within the Long-Term Plan area would not require or result in the construction of new or expanded wastewater treatment facilities, the construction of which could cause significant environmental effects.

Table 6.10-15
Wastewater Flows in the Long-Term Plan Area

Service Area	Existing Total Average Daily Sewer Flow (mgd)	Proposed Total Average Daily Sewer Flow (mgd)[a]	Net Increase Total Average Daily Sewer Flow (mgd)
City of Sacramento	0.393	0.673	0.280
SASD	0.070	0.367	0.296
Total	**0.463**	**1.04**	**0.576**

Source: Kimley-Horn and Associates, Inc. *Swanston Station Transit Village Infrastructure Report*, July 2008, Appendix E, adapted by PBS&J, November 2008.

Note:

a. Only includes land uses within the Long-Term Plan area that would be rezoned.

With the proposed increase in average flows expected to occur as a result of development that could occur within the Long-Term Plan area, existing mains in both the City of Sacramento and SASD service areas would need to be upsized. Recommended improvements to the existing sanitary sewer system are presented in Figure 2-15 in the Project Description and include increasing the size of the pipes located in Harvard Street, Manning Street, Knoll Street, Princeton Street, Frienza Avenue, El Camino Avenue, Dixieanne Avenue, Calvados Avenue, Arden Way, Green Street, Lexington Street, Selma Street, and Clay Street.

Pipes were identified in the Long-Term Plan area as below the minimum City requirement of 8 inches in diameter. Future development that could occur within the area served by the City (west of tracks) would eventually be required to upgrade these pipes in order to meet City standards. Upgrading pipes in the SASD portion (east of tracks) of the Swanston TVSP project area would not be required by law, but it is expected that these pipes would need to be upgraded as well in order to support future development. Improvements would be funded through the City's Capital Improvement Program, special financing mechanisms, or developers if required by the City. The proposed Swanston Station Specific Plan acknowledges funding

constraints with each of these sources, and identifies several other sources for the City to explore. The improvements would be implemented at a schedule to be determined by the City to serve development within the Swanston TVSP project area.[33] The infrastructure report prepared for the proposed Swanston Station Specific Plan focuses on the improvements needed to serve the project area; there may be downstream impacts from improvements in the project area. These downstream impacts could be potentially significant.

In order to accommodate the new development that could occur within the Long-Term Plan area, construction of expanded wastewater conveyance facilities would be needed, the construction of which could cause significant environmental effects. These impacts are typical of construction activities, and include temporary traffic delays, noise, disturbance to street trees and possibly nesting birds, fugitive dust emissions, and possible erosion and hazardous materials exposure. These impacts are addressed in other technical sections in Chapter 6 of this EIR and are mitigated to less than significant through standard construction best management practices.

As required by law, all utility connections would be constructed in accordance with City standards to ensure an adequately sized and properly constructed sewer conveyance system

MITIGATION MEASURE. Implementation of Mitigation Measure UT-2.1, which calls for preparation of sewer studies and making the necessary improvements to avoid capacity deficiencies, would ensure that adequate wastewater conveyance capacity is provided to new development prior to occupancy. This measure shall be included as a condition of project approval and would reduce wastewater conveyance system impacts to a less-than-significant level.

UT-8. Development that could occur within the Long-Term Plan area would not exceed available sources of water supply. While the projected increase in water demand would not require modifications to water supply deliveries or the City's water treatment plants, improvements to the wastewater conveyance system would be necessary. (PS)

As shown in Table 6.10-16, development that could occur within the Long-Term Plan area would generate a total demand for water of approximately 718 AFA or an annual average demand of 0.641 MGD (641,000 gpd) at maximum buildout, an increase of about 431 AFA or an average annual demand of 0.3814 MGD (384,000 gpd) over existing conditions which is below the significance threshold of 10 million gallons per day.

Development that could occur within the Long-Term Plan area 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

[33] Sacramento City Department of Utilities, Dave Schamber, personal communication, February 3, 2009.

consumption for 2006 (the most recent year for which data are available) totaled 138,671 AF, which is 75,390 AF less than the maximum diversion amount specified in the USBR settlement contract for 2007 (214,000 AFA). If the increased demand from development within the Long-Term Plan area is added to the 2006 demand of 138,671, the total demand in the City would be 139,102 AFA, which is 74,898 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 will 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 Long-Term Plan area.

Table 6.10-16
Water Demand in the Long-Term Plan Area

	MGD	AFA
Existing Calculated Demand	0.257	287
Projected Water Demands[a]	0.641	718
Net Change in Demand	**0.384**	**431**

Source: Kimley-Horn and Associates, Inc. *Swanston Station Transit Village Infrastructure Report*, July 2008, Appendix G, adapted by PBS&J, November 2008.

Note:

a. Only includes land uses within the Long-Term Plan area that would be rezoned.

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). Average demand from development that could occur within the Long-Term Plan area is 0.64 mgd and the net change from existing is expected to be 0.39 mgd. Maximum day demands would be greater. It should be noted that this was accounted for in the City's 2006 UWMP maximum day demand projections through the year 2030. Adding the water demand from the Long-Term Plan area to the City's water demand results in a water demand of approximately 232.39 MGD. The SRWTP and FWTP 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 FWTP are limited by the City's WFA PSA. In either case, the City's maximum combined treatment capacities are sufficient to serve development within the Long-Term Plan area, and additional treatment capacity, such as the capacity that would be provided by the water treatment plant being evaluated as part of the SRWRS, would not be required.

Water service for the Long-Term Plan area would be provided by the City of Sacramento through connections to the existing transmission water lines. The infrastructure report prepared for the proposed Swanston Station Specific Plan indicated that adequate water pressure must be available to meet fire flow requirements per City requirements. The project would install a

new looped water system with a series of water lines ranging in size from 6-inches and 12-inches. Recommended improvements to the existing water system are presented in Figure 2-14 in the Project Description and include increasing the size of the pipes along Harvard Street, Manning Street, Frienza Avenue, El Camino Avenue, Dixieanne Avenue, Calvados Avenue, Arden Way, Green Street, Lexington Street, Selma Street, and Clay Street. According to the proposed Swanston Station Specific Plan, the improvements would be funded through the City's Capital Improvement Program. The proposed Swanston Station Specific Plan acknowledges funding constraints, and identifies several other sources for the City to explore. The improvements would be implemented at a schedule to be determined by the City to serve development within the Swanston TVSP project area.[34]

In order to accommodate the new development that could occur within the Long-Term Plan area, construction of expanded water distribution facilities would be needed, the construction of which could cause significant environmental effects. These impacts are typical of construction activities, and include temporary traffic delays, noise, disturbance to street trees and possibly nesting birds, fugitive dust emissions, and possible erosion and hazardous materials exposure. These impacts are addressed in other technical sections in Chapter 6 of this EIR and are mitigated to less than significant through standard construction best management practices.

In summary, the City has sufficient treatment capacity to serve development that could occur within the Long-Term Plan area. 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. However, hydraulic modeling is recommended to be performed for the study area to confirm that the main sizes would be adequate to meet City standards.[35] 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 in Chapter 6 of this EIR.

MITIGATION MEASURE. Implementation of Mitigation Measure UT-3.1, which calls for individual project applicants to perform hydraulic modeling and to make necessary improvements to the water distribution system, would ensure that adequate water supply is provided to new development prior to occupancy. The mitigation measure would also ensure that adequate water pressure would be provided under fire flow conditions. As a result, this measure would ensure that impacts remain less than significant.

UT-9. Development that could occur within the Long-Term Plan area would increase the demand for electricity and natural gas services. The increase would require consideration of new or expanded service facilities at some point in the long-range future. (LTS)

[34] Sacramento City Department of Utilities, Dave Schamber, personal communication, February 3, 2009.

[35] Kimley-Horn and Associates, Inc., *Swanston Station Transit Village Infrastructure Report,* July 2008, Page 43.

At buildout, development that could occur within the Long-Term Plan area would demand approximately 11.8 MW of electricity and 3.8 million Therms of natural gas per year (see Tables 6.10-17 and 6.10-18), an increase of about 5.5 MW of electricity and 1.1 million Therms of natural gas over existing conditions, respectively. This increase would require the development or enhancement of electrical and gas facilities in order to serve the Long-Term Plan area. The environmental impacts associated with the installation of new facilities would need to be analyzed by each development under separate environmental review as the utilities are extended. Although it is unknown at this time how SMUD and PG&E would accommodate the increase in energy demand, both utility providers would install new distribution facilities as needed to serve development within the Long-Term Plan area, according to California Public Utilities Commission rules. 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 Long-Term Plan area. Development within the Long-Term Plan area would not result in substantial physical effects due to the provision of electrical and natural gas service. Therefore, impacts would be considered less than significant.

Table 6.10-17
Electricity Demand in the Long-Term Plan Area

	Units[a]	Demand Factor	Estimated Electrical Demand
Proposed New Land Uses			
Residential	2,230 du	4.22 kW/du/year	9,410 kW/year
Commercial	435,515 sf	0.0056 kW/sf/year	2,439 kW/year
Total			**11.8 MW/year**
Existing Land Uses that could be Replaced			
Residential	132 du	4.22 kW/du/year	557.0 kW/year
Commercial	292,306 sf	0.0056 kW/sf/year	1637 kW/year
Office	205,683 sf	0.0046 kW/sf/year	94.6 k/W/year
Industrial	570,843 sf	0.007 kW/sf/year	3995.9 kW/year
Total			**6.3 MW/year**
Net Change			**5.5 MW/year**

Source: Gary Shimizu, P.E., SMUD Distribution Services, Written communication, November 1, 2006.

Notes:

Electricity demand based on calculations from SMUD.

a. Only includes land uses within the Long-Term Plan area that would be rezoned.

Table 6.10-18
Natural Gas Demand in the Long-Term Plan Area

	Number of Units/Acres[a]	Demand Factor	Estimated Natural Gas Demand
Proposed New Land Uses			
Residential	2,230 du	1,440 Therms/du/year	3,211,200 Therms/year
Commercial	435,515 sf or 10 acres	63,600 Therms/acre/year	636,000 Therms/year
Total			**3,847,200 Therms/year**
Existing Land Uses that could be Replaced			
Residential	132 du	1,440 Therms/du/year	190,080 Therms/year
Commercial	292,306 sf or 19.17 acres	63,600 Therms/acre/year	1,219,212 Therms/year
Office	205,683 sf or 13.5 acres	63,600 Therms/acre/year	858,600 Therms/year
Industrial	570,843 sf or 37.44 acres	10,200 Therms/acre/year	381,910 Therms/year
Total			**2,649,802 Therms/year**
Net Change			**1,197,398 Therms/year**

Source: EIP Associates, *North Roseville Specific Plan DEIR 1997,* 2003; EIP Associates, *University of California, Los Angeles 2002 Long Range Development Plan Draft Environmental Impact Report,* February 2003.

Note:

a. Only includes land uses within the Long-Term Plan area that would be rezoned.

Cumulative Analysis

The cumulative context for solid waste services includes all development within the Sacramento Regional County Solid Waste Authority service area. This includes the cities of Sacramento and Citrus Heights and unincorporated areas of the County.

Cumulative wastewater impacts to the SRWTP are based on consideration of all future growth within the service area of the SRWTP, the SASD and the City of Sacramento.

The cumulative analysis for water supply, distribution, and storage considers the potential environmental effects of supplying water to the Swanston TVSP project area in addition to existing demands and other anticipated water demands that may be served by the City of Sacramento through year 2025.

UT-10. Solid waste generated by the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the Sacramento Regional County Solid Waste Authority service area, would have a less-than-significant cumulative impact because it would not exceed landfill capacity. (LTS)

The proposed Swanston TVSP project, in combination with other development within the Sacramento Regional County Solid Waste Authority service area, would increase the production of solid waste per year and result in a cumulative increase in the disposal of solid

waste to landfills. 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 waste collected by the City of Sacramento, is undergoing an expansion that will 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 County General Plan and city general plans, 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. The existence of significant capacity at the City's primary landfills, the exporting of solid waste and aggressive recycling policy would result in a less-than-significant impact on a cumulative level.

UT-11. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the SRWTP service area, would not increase wastewater flows that could exceed treatment capacity at the SRWTP and/or wastewater collection infrastructure. (LTS)

The proposed Swanston TVSP project in combination with other development within the SRWTP service area, would increase population in the City and result in a cumulative increase in wastewater flows to the SRWTP. This increase includes sewage received from the SASD service area as well as the City service area. The average daily dry weather flow to the SRWTP at full buildout of the City General Plan is estimated at 129.1 mgd and peak flow is estimated at 305.9 mgd. As previously discussed, the SRWTP currently receives an average dry weather flow of 155 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. However, based on the Sacramento Area Council of Government's (SACOG) regional population projections, SRCSD's Regional 2020 Master Plan accommodates 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. Therefore, the cumulative impact of future development on SRWTP treatment facilities would be less than.

The proposed Swanston TVSP project in combination with other development would require improvements to the wastewater conveyance system within the service area of the City and SASD. Improvements could include upgrading minor pipes that are less than 8 inches in diameter and possibly replacing sewer mains as is necessary upon future development. As required by law, all utility connections would be constructed in accordance with City standards to ensure an adequately sized and properly constructed sewer conveyance system. Further, implementation and extension of utility infrastructure would be fully funded and constructed by each project prior to occupancy and in a manner that would minimize the potential for utility disruption. It is expected that the short-term impacts associated with the construction of

wastewater conveyance infrastructure (e.g., air quality, noise, traffic) would be similar to that of the proposed Swanston TVSP project. Therefore, the cumulative impact of future development on the wastewater conveyance system would be less than.

UT-12. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City's service area, would contribute to cumulative increases in water demand throughout the City; however, the impact would be less than significant since there are adequate water supplies. (LTS)

The proposed Swanston TVSP 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 6.10-19. 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 645,278.

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 Department of Water Resources 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.[36] Again, 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 SRWTP. Assuming a maximum treatment capacity of 50,000 AFA at the FWTP and 180,000 AFA at the SRWTP, the current drought limiting scenario allows a surface water production of 230,000 AFA. Furthermore, the City has sustainable groundwater production of 24,000 AFA, which results in total water supply capacity of 266,600 AFA during a Conference Year or Hodge Flow condition. Again, this exceeds the 2030 projected citywide 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 Swanston TVSP project

[36] 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.

Table 6.10-19
Water Supply and Demand Comparison during "Conference Years" (AFA)[a]

	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[b]	98,200[b]	98,200[b]	98,200[b]
Sacramento River	81,800	81,800	81,800	81,800	81,800	81,800
Total Surface Water Supply	**205,000[c]**	**227,500[c]**	**230,000**	**230,000**	**230,000**	**230,000**
Groundwater Supplies[d]	33,600	33,600	33,600	33,600	33,600	33,600
Total Water Supply[b]	**238,600**	**261,100**	**263,600**	**263,600**	**263,600**	**263,600**
City Demand and Wholesale/ Wheeling Demand[e]	146,647	161,401	178,253	196,759	217,182	239,805
Net Project Demand	*~*	*58*	*58*	*58*	*58*	*58*
Total Demand	**146,647**	**161,459**	**178,311**	**196,817**	**217,240**	**239,863**
Available Supply	**58,353**	**99,641**	**85,289**	**66,783**	**46,360**	**23,737**

Source: PBS&J, November 2007; adapted from City of Sacramento Urban Water Management Plan.

Notes:

a. "Conference Year," defined by the WFA, when the projected unimpaired inflow to Folsom Reservoir is less than 400,000 acre-feet.

b. Limited by present Sacramento River WTP capacity not WFA agreement.

c. 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.

d. Based on City's current groundwater production.

e. Demands during Hodge Flow and Conference Years are reduced by 6,616 AFA as no sales from the City to Sacramento Suburban are required.

and projected citywide growth. Table 6.10-20 shows the City's supply and demand under below-Hodge flow conditions; notably, the table illustrates that the City can meet annual citywide demands now and over a 20-year planning horizon. Therefore, the proposed Swanston TVSP project and buildout of the General Plan would not exceed water supplies in the City. This is considered a less-than-significant cumulative impact.

UT-13. Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City's service area, would contribute to cumulative demand on water supply treatment and distribution facilities throughout the City that exceeds the estimated capacity of the water treatment plants and sustainable withdrawal from the groundwater. (PS)

Although much of the downtown area is already developed, it is likely that the land uses within the City's service area would intensify in the future as development pressure throughout the metropolitan area increases; this proposed Swanston Station Specific Plan is an example of such intensified development.

Table 6.10-20
Peak Day Surface Water Supply Capacity (Existing Facilities) and Demand Comparison during Normal Flow (Above Hodge) Conditions (MGD)

	2005	2010	2015	2020	2025	2030
American River[a]	200	200	200	200	200	200
Sacramento River[a]	160	160	160	160	160	160
Total Surface Water Supply	**360**	**360**	**360**	**360**	**360**	**360**
Groundwater Supply	30	30	30	30	30	30
Total Water Supplies	**390**	**390**	**390**	**390**	**390**	**390**
City Demand and Wholesale/ Wheeling Demands[b]	235.7	261.9	291.5	324.5	361.2	402
Net Project Demand	~	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*
Total Water Demand		**261.96**	**291.56**	**324.56**	**361.26**	**402**
Available Capacity without New Facilities		**128.04**	**98.44**	**65.44**	**28.74**	**-12**

Source: PBS&J, November 2007.

Notes:

a. Surface supply is based on nominal plant capacity.

b. Based on 2.2 percent annual growth rate between 2004 and 2030 demand.

The intensification of uses and buildout of the General Plan could result in the need for upgrades to the City's water distribution and/or treatment systems. As such, the City has historically constructed, expanded and improved its water diversion, treatment and transmission facilities as needed to accommodate increasing water supply demands, and it is anticipated that the City will continue to do so now and in the future. This approach does not present any issues regarding the adequacy of the City's water supply, since the City's existing water rights and entitlements are sufficient to supply all City demands at buildout.[37]

The most appropriate approach to identify when the City will require its next additional increment of diversion and treatment facility capacity is to analyze maximum day demand. Maximum day demand at buildout of development that could occur within the Strategic Plan area would be approximately 0.05 MGD and would contribute to demands placed on the City's

[37] 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.

potable water service area.[38] With development that could occur within the Long-Term Plan area, additional water demand would increase by 0.38 MGD.

Table 6.10-20 shows the maximum day surface water supply and demand under normal flow conditions. Table 6.10-21 shows a treatment capacity reduction at the FWTP 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 22 MGD is added to the treated surface water, this results in a total water delivery of 282 MGD during below-Hodge flow conditions. Assuming a more 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, a treatment capacity deficit could occur in 2020 as shown in Table 6.10-21. The City could expect a maximum day demand capacity deficit of approximately 14.56 MGD at that time.[39] The deficit would increase over subsequent years and in 2030, under below-Hodge flow conditions the projected capacity deficit would increase to 92 MGD or up to 122 MGD deficit without pumping groundwater. Therefore, during below-Hodge flow conditions, development within the Strategic Plan area along with buildout of the City's General Plan would create a maximum day deficit beginning in 2020. This is considered a potentially significant cumulative impact, and the contribution of the proposed Swanston TVSP project to demand would be cumulatively considerable.

MITIGATION MEASURE. The City is aware of this shortfall, and has developed a number of ways in which to mitigate the potential future maximum day demand capacity deficit. The discussion below describes available mitigation options. Generally, these options would allow the City a degree of flexibility to implement appropriate mitigations in sequence or in combination to reduce the potentially significant cumulative impact to a less-than-significant level.[40]

The most likely project, due to current progress, is the construction of an additional diversion and treatment facility on the Sacramento River whether as part of the SRWRS project or as a City-only project. This project as well as the other mitigation options identified would allow the City some degree of flexibility in how the City chooses to reduce the potentially significant cumulative impact to a less-than-significant level. (LTS)

---

[38] It should be noted that this was accounted for in the City's 2006 UWMP maximum day demand projections through the year 2030. Jim Peifer, City of Sacramento Personal communication August 3, 2007.

[39] It is important to note that the City's PSA precludes delivery of 20 MGD to Sacramento Suburban Water District; therefore, citywide cumulative demand is reduced by 20 MGD. Sacramento Suburban Water District, Purveyor Specific Agreement, June 2003.

[40] As recently noted by the California Supreme Court in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* 40 Cal.4th 412, 432, (2007), CEQA does not require that all facilities necessary to treat and deliver the water supply for future build-out of a long-term land use plan be approved or built when the land use plan is approved, as this would require water planning to far outpace land use planning.

Table 6.10-21
Peak Day Surface Water Supply Capacity (Existing Facilities) and Demand Comparison during Below Hodge Flow Conditions (MGD)

	2005	2010	2015	2020	2025	2030
American River[a]	100	100	100	100	100	100
Sacramento River[b]	160	160	160	160	160	160
Total Surface Water Supply	**260**	**260**	**260**	**260**	**260**	**260**
Groundwater Supply	30	30	30	30	30	30
Total Water Supplies	**290**	**290**	**290**	**290**	**290**	**290**
City Demand and Wholesale/ Wheeling Demands[c]	235.7	261.9	291.5	324.5	361.2	402
Net Project Demand	*~*	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*
Total Water Demand[d]	**235.7**	**241.96**	**271.56**	**304.56**	**341.26**	**382**
Available Capacity without New Facilities	**54.3**	**48.04**	**18.44**	**-14.56**	**-51.26**	**-92**

Source: PBS&J, November 2007.

Notes:

a. American River diversion is limited 100 MGD during Hodge flow conditions.

b. Sacramento WTP peak day supply is based on the nominal capacity of the plant.

c. Based on a constant 2.2 percent annual growth rate between 2004 and 2030 demand.

d. 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").

UT-13.1 *Maximum Day Demand Conservation in the Proposed Swanston TVSP Project.* The City's 2006 UWMP presents three future demand projection scenarios spread over a 25-year planning horizon, they include a "no conservation" scenario, a 7.5 percent conservation scenario, and a 25.6 percent conservation scenario.

Assuming that as a mitigation measure the Strategic Plan area could achieve 7.5 percent conservation in average day demands, this would roughly save approximately an annual average of 7,189 gpd and reduce average annual demands to 99.44 AFA down from the calculated demand of 107.9 AFA for a savings of 8.06 AFA. The conservation savings achieved in the Swanston TVSP project area would not reduce the maximum day demands enough to overcome the 2020 citywide capacity deficit; therefore, this ultimately is a citywide issue and the City would be need to the address future potential maximum day demand deficit on a larger scale to reduce the potentially significant cumulative impact to a less-than-significant level.

UT-13.2 *Diversion and WTP as Cost-sharing Partner in Sacramento River Water Reliability Study*. The City is a partner on the Sacramento River Water Reliability Study, which is investigating alternatives for an additional 365 cfs (235 MGD) diversion on the Sacramento River and 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 as shown in Table 6.10-22. Upon implementation of this new diversion and WTP plant project, the potentially significant cumulative impact would be reduced to a less-than-significant cumulative impact.

Table 6.10-22
Peak 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[a]	100	100	100	100	100	100
Sacramento River[b]	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	30	30	30	30	30	30
Total Water Supplies	**290**	**290**	**290**	**435**	**435**	**435**
City Demand and Wholesale/ Wheeling Demands[c]	235.7	261.9	291.5	324.5	361.2	402.0
Project Demand	~	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*
Total Water Demand[d]	**235.7**	**242.0**	**271.6**	**304.6**	**341.3**	**382.0**
Available Capacity with new facilities	**54.3**	**48.0**	**18.4**	**130.4**	**93.7**	**53.0**

Source: PBS&J, November 2007.

Notes:

a. American River diversion is limited 100 MGD during Hodge flow conditions.

b. Sacramento WTP peak day supply is based on the nominal capacity of the plant.

c. Based on a constant 2.2 percent annual growth rate between 2004 and 2030 demand.

d. 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").

The SRWRS is undergoing environmental review under CEQA and NEPA, in addition to compliance with Endangered Species Act and other applicable regulatory requirements. This process began in 2002 with the authorization of Public Law 106 – 554 and is currently ongoing. USBR is the federal lead agency and Placer County Water Agency is the local lead agency. The draft

environmental documentation is scheduled to be completed in the spring of 2008 and would be certified in early 2009. USBR plans to issue a Record of Decision in spring 2009.[41]

The construction and operation of a second Sacramento River diversion and WTP could result in, at a minimum, the following potentially significant environmental impacts:

- Exposure of soils to erosion and loss of topsoil during construction;
- Surface water quality degradation (cumulative impact);
- Destruction or disturbance of subsurface archeological or paleontological resources;
- Construction-related air emissions;
- Construction and operations-related noise impacts;
- Visual and/or light and glare impacts;
- Loss of protected species and degradation or loss of their habitats;
- Conversion of existing agricultural lands or resources;
- Degradation of fisheries habitat (cumulative impact); and
- Exposure to pre-existing listed and unknown hazardous materials contamination.

Mitigation measures would need to be developed to reduce any potentially significant impacts to less-than-significant levels. As such, due to the timing uncertainties associated with the long-term water supply infrastructure necessary to overcome the cumulative maximum day demands deficit in 2020, project-specific mitigation measures would need to be tailored to the proposed Swanston TVSP project. The following are illustrative of the types of mitigation measures that could be implemented to avoid or reduce those impacts listed above to less-than-significant levels:

- Reduction in operational and construction air emissions as required by SMAQMD;
- Avoidance of surface water pollution through control of on-site stormwater flows, protection of topsoils or stockpiles from wind and water erosion, and implementation of related BMPs;

[41] Initial Alternatives Report. Final Version, March 2005. Sacramento River Reliability Study. Updated by personal communication with Jim Peifer, City of Sacramento and Sammie Cervantes, USBR, August 9, 2007.

- Minimization of operational and construction noise through the use of noise attenuation measures;
- Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise compensate for effects to biological resources;
- Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;
- Avoidance of hazardous materials effects through appropriate investigation and remediation of any on-site hazards; and
- Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.

The City, as a lead or responsible agency, would be required to implement mitigation measures identified for each mitigation project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.

UT-13.3 *City of Sacramento Only Sacramento River Diversion and WTP.* Another mitigation option would be for the City to be the sole operator of the second Sacramento River diversion and Elverta Road WTP project. Under this option, the diversion and WTP would be scaled down to provide the additional capacity needed to meet only the City's maximum day demands when diversion limitations apply at FWTP under the City WFA PSA. As presented in the SRWRS, the City would most likely construct capacity to divert roughly 235 cfs and could treat up to 145 MGD at the new WTP. This new diversion and WTP would avoid any future maximum day capacity deficits through 2030 and beyond, as shown in Table 6.10-22, the new 145 WTP would provide capacity to meet all demands through 2030.[42] This was presented as one of the alternatives in the SRWRS; therefore, it is reasonable to assume this as a feasible mitigation measure. Upon implementation of this diversion and WTP project, the potentially significant cumulative impact would be reduced to a less-than-significant cumulative impact.

As with the previous SRWRS alternative, this City-only project requires its own environmental review, whether as part of the SRWRS or as an independent project, in addition to compliance with all applicable regulatory requirement.

The construction and operation of a second Sacramento River diversion and WTP as described above could in, at a minimum, result in the following potentially significant environmental impacts:

[42] Sacramento River Water Reliability Study Executive Summary, Initial Alternatives Report, Final Version, March 2005.

- Exposure of soils to erosion and loss of topsoil during construction;
- Surface water quality degradation (cumulative impact);
- Natural drainage courses and hydrology;
- Construction-related air emissions;
- Construction and operations-related noise impacts;
- Visual and/or light and glare impacts;
- Loss of protected species and degradation or loss of their habitats;
- Conversion of existing agricultural lands or resources;
- Degradation of fisheries habitat (cumulative impact); and
- Exposure to pre-existing listed and unknown hazardous materials contamination.

Mitigation measures would need to be developed to reduce any potentially significant impacts to less-than-significant levels. As such, due to the timing uncertainties associated with the long-term water supply infrastructure necessary to overcome the cumulative maximum day demands deficit in 2020, project-specific mitigation measures would need to be tailored to the proposed Swanston TVSP project. The following are illustrative of the types of mitigation measures that could be implemented to avoid or reduce those impacts listed above:

- Reduction in operational and construction air emissions as required by SMAQMD;
- Avoidance of surface water pollution through control of on-site stormwater flows, protection of topsoils or stockpiles from wind and water erosion, and implementation of related BMPs;
- Minimization of operational and construction noise through the use of noise attenuation measures;
- Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise compensate for effects to biological resources;
- Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;
- Avoidance of hazardous materials effects through appropriate investigation and remediation of any on-site hazards; and
- Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.

The City, as a lead or responsible agency, would be required to implement mitigation measures identified for each mitigation project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.

UT-13.4 *Increased Groundwater Pumping*. As previously discussed, the City maintains 32 wells for potable use; 23 wells are actively used to supply drinking water.[43] The total capacity of the wells is approximately 22 MGD and producing up to 24,000 AFA. In 2000 - 2005 the City's annual average groundwater pumping was 22,992 acre-ft.[44]

The average annual demand of development that could occur within the Strategic Plan area is estimated at 0.05 MGD. In comparison to citywide demands of 325 MGD in 2020 and up to 402 MGD in 2030 above-Hodge conditions, the proposed Swanston TVSP project's demand contribution is less than considerable. Nonetheless, under a dry year scenario, the project would increase demand on the City's water system infrastructure. In an effort to minimize the project's demand, the project could add new wells to the City's groundwater system paid for through developer or other water connection fees. Assuming a new groundwater well could pump roughly 1,000 gpm or 1.44 MGD, one new well would be needed to meet the project's peak day demands and offset the demand placed on the City's water system. Furthermore, each new project would have to pay their fair share to fund new groundwater wells to offset project-specific demands.

The City's water supply infrastructure is designed to serve the entire citywide service area and new infrastructure ties into the existing system to meet both average and maximum day demands. The City supplements the surface water capacity by pumping groundwater to meet the maximum day demands. If no surface water diversion and treatment capacity is added by 2025, the City would need to more than double the peak day pumping rate to meet customer demands. This could not be achieved with the current well capacities and new wells would have to be installed. Upon implementation of this mitigation measure, the potentially significant cumulative impact would be reduced to a less-than-significant cumulative impact. This analysis assumes that additional wells would be installed in the SGA groundwater area.

If selected as appropriate mitigation, implementation of this mitigation measure could require environmental analysis to assess if the construction or operation of new wells could have any adverse environmental consequence. The new wells, appurtenances and infrastructure could result in the following potentially significant environmental impacts:

---

[43] Dan Sherry, City of Sacramento, Utilities Department. Status of groundwater wells, June 23, 2005.

[44] Calculated from the City of Sacramento, Department of Utilities, Operational Statistics Annual Reports.

- Exposure of soils to erosion and loss of topsoil during construction:
- Construction-related air emissions;
- Destruction of buried archeological or paleontological resources;
- Changes in natural drainage courses and hydrology;
- Construction and operations-related noise impacts;
- Visual and/or light and glare impacts;
- Conversion of existing agricultural lands or resources;
- Drawdown of groundwater in the North American Subbasin; and
- Exposure to pre-existing listed and unknown hazardous materials contamination.

In addition, although this groundwater pumping mitigation measure could supply potable water to meet proposed site demands and offset a service area capacity deficit; this mitigation measure could also cause rapid drawdown of a sustained groundwater basin the results of which are counter to the SGA Groundwater Management Plan and WFA. Additionally, increasing groundwater withdrawals could adversely affect other groundwater pumping activities in the region, or cause dramatic changes within known and unknown groundwater contamination plumes in the Subbasin.

Mitigation measures would be to need developed to reduce any potentially significant impacts to less than significant levels. As such, due to the timing uncertainties associated with the long-term water supply infrastructure necessary to overcome the cumulative maximum day demands deficit in 2020, project-specific mitigation measures would need to be tailored to the proposed Swanston TVSP project. The following are illustrative of the types of mitigation measures that could be implemented to avoid or reduce those impacts listed above to less-than-significant levels:

- Reduction in operational and construction air emissions as required by SMAQMD;
- Avoidance of surface water pollution through control of on-site stormwater flows, protection of top soils or stock piles from wind and water erosion, and implementation of related BMPs;
- Minimization of operational and construction noise through the use of noise attenuation measures;
- Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise compensate for effects to biological resources;

- Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;
- Avoidance of hazardous materials effects through appropriate investigation and remediation of any on-site hazards; and
- Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.

The City, as a lead or responsible agency, would be required to implement mitigation measures identified for each mitigation project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.

UT-14 Development that could occur under the proposed Swanston TVSP project (Strategic Plan area and Long-Term Plan area), in combination with other development within the City of Sacramento, could exceed the electrical or natural gas supply and transmission capabilities. However, the continued development of resources and facilities by SMUD and PG&E in response to energy demands makes this a less than significant cumulative impact. (LTS)

Currently there are multiple projects under consideration for development within the City of Sacramento. All of these future projects would create a significant electricity and natural gas demand above what utility providers are currently 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 continues to develop and implement plans to ensure that electricity would be available to supply energy to the City at full implementation of the City's General Plan Update over the next 25 years.[45] Because SMUD is able to meet all future projected demands, there would be no significant cumulative impacts in terms of either supply or a potential need for added facilities. The cumulative impact related to the supply of electricity and the need for additional or expanded facilities is less than significant.

With regard to natural gas, the proposed Swanston TVSP project would also result in permanent and continued use of this resource. PG&E's demand projections are continuously

[45] SMUD, SMUD and the Environment, http://www.smud.org/community-environment/index.html, accessed November 27, 2007.

updated, and PG&E's system has ample capacity to ensure continued levels of service to all customers within the region. For this reason, the need for natural gas in the Swanston TVSP project area would not jeopardize 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.

Future development within the region would increase residential, commercial, and office needs for electricity and natural gas. Development within 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. It is expected that the short-term impacts associated with the construction of wastewater conveyance infrastructure (e.g., air quality, noise, traffic) would be similar to that of the proposed Swanston TVSP project. Although the details of how SMUD and PG&E would accommodate the energy demand of the proposed Swanston TVSP project is unknown at this time, both utility providers would install new distribution facilities as needed to serve the buildout of the proposed Swanston TVSP project, according to California Public Utilities Commission 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 Swanston TVSP project area. This is a less-than-significant cumulative impact.

THIS PAGE INTENTIONALLY LEFT BLANK

6.11 TRANSPORTATION

Introduction

This section of the EIR describes potential impacts to transportation facilities that serve the community of North Sacramento that may result from the proposed Swanston TVSP project. Facilities included in this assessment are local roadways, freeways, pedestrian and bicycle routes, transit services, parking, and heavy rail.

The impacts of the proposed Swanston TVSP project are evaluated according to the standards and methodologies set forth by the City of Sacramento and the State of California Department of Transportation (Caltrans). The traffic analyses are based on peak-hour levels of service (LOS) for key study area intersections, roadway segments and freeway facilities, and daily traffic volumes for roadway segments. The analysis has been conducted for the following scenarios:

- Existing Conditions
- Baseline Conditions
- Baseline plus Project (Strategic Plan) Conditions
- Cumulative (2025) No Project Conditions
- Cumulative (2025) plus Project (Strategic Plan) Conditions
- Long Term (2050) No Project Conditions
- Long Term (2050) plus Project (Long-Term Plan) Conditions

Intersections, with existing traffic controls, and roadway segments evaluated in this analysis are shown in Figure 6.11-1.

Intersections

1. El Camino Avenue at Del Paso Boulevard
2. El Camino Avenue at Evergreen Street
3. El Camino Avenue at Lexington Street
4. El Camino Avenue at Van Ness Street
5. Arden Way at Del Paso Boulevard
6. Arden Way at Royal Oaks Drive/Beaumont Street
7. Arden Way at Evergreen Street
8. Arden Way at Harvard Street
9. Arden Way at Capital City Freeway (Business 80) West Bound (WB) Off-Ramp

10. Arden Way at Capital City Freeway (Business 80) East Bound (EB) On-Ramp
11. Evergreen Street at Dixieanne Avenue
12. Evergreen Street at Calvados Avenue
13. Auburn Boulevard/Van Ness Street at Frienza Avenue

Roadway Segments

1. El Camino Avenue – east of Lexington Street
2. Arden Way – west of Royal Oaks Drive/Beaumont Street
3. Arden Way – west of Evergreen Street
4. Dixieanne Avenue – east of Beaumont Street
5. Calvados Avenue – east of Beaumont Street
6. Evergreen Street – north of Arden Way
7. Royal Oaks Drive – south of Arden Way

Freeway Facilities

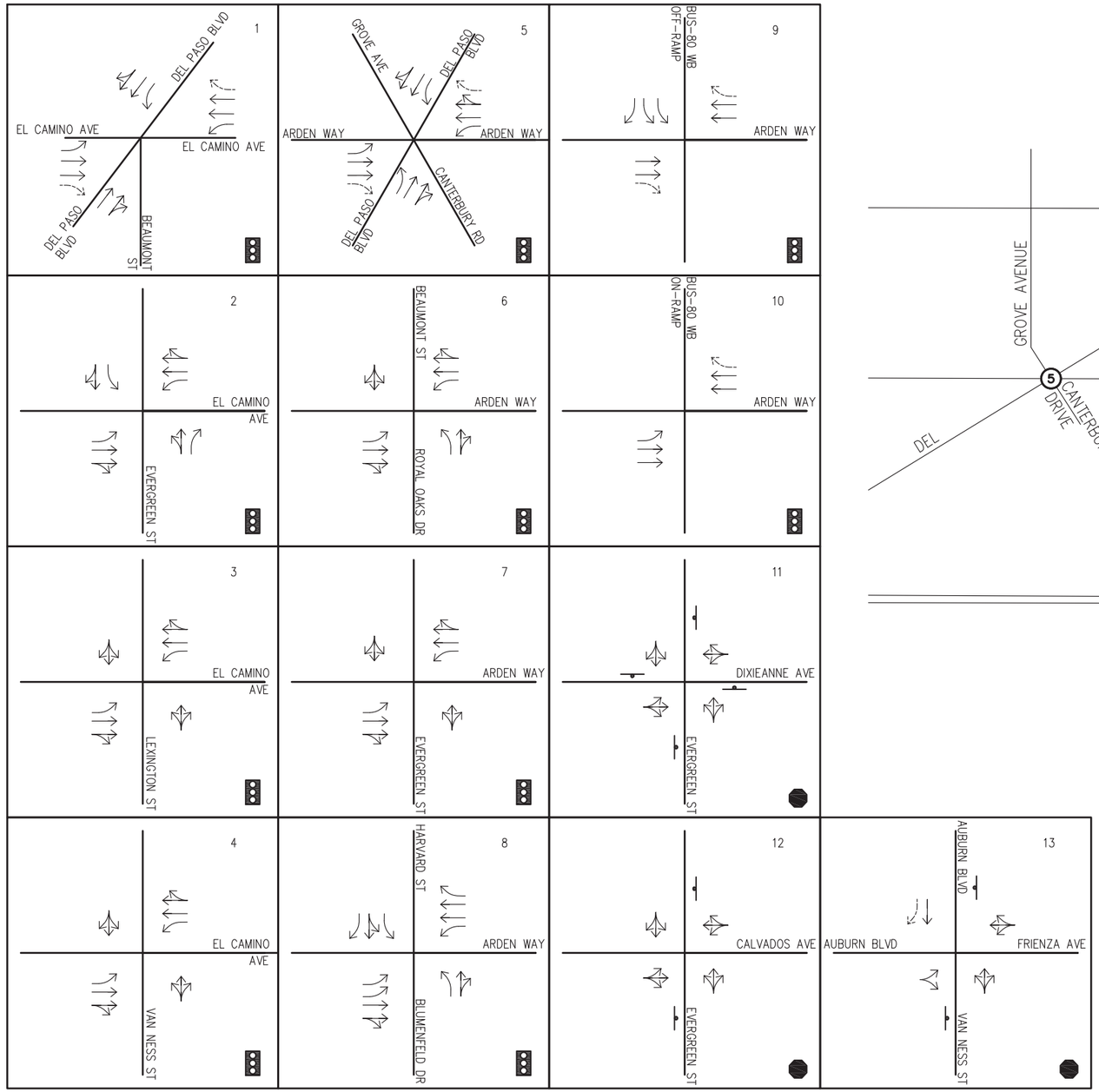
Diverge

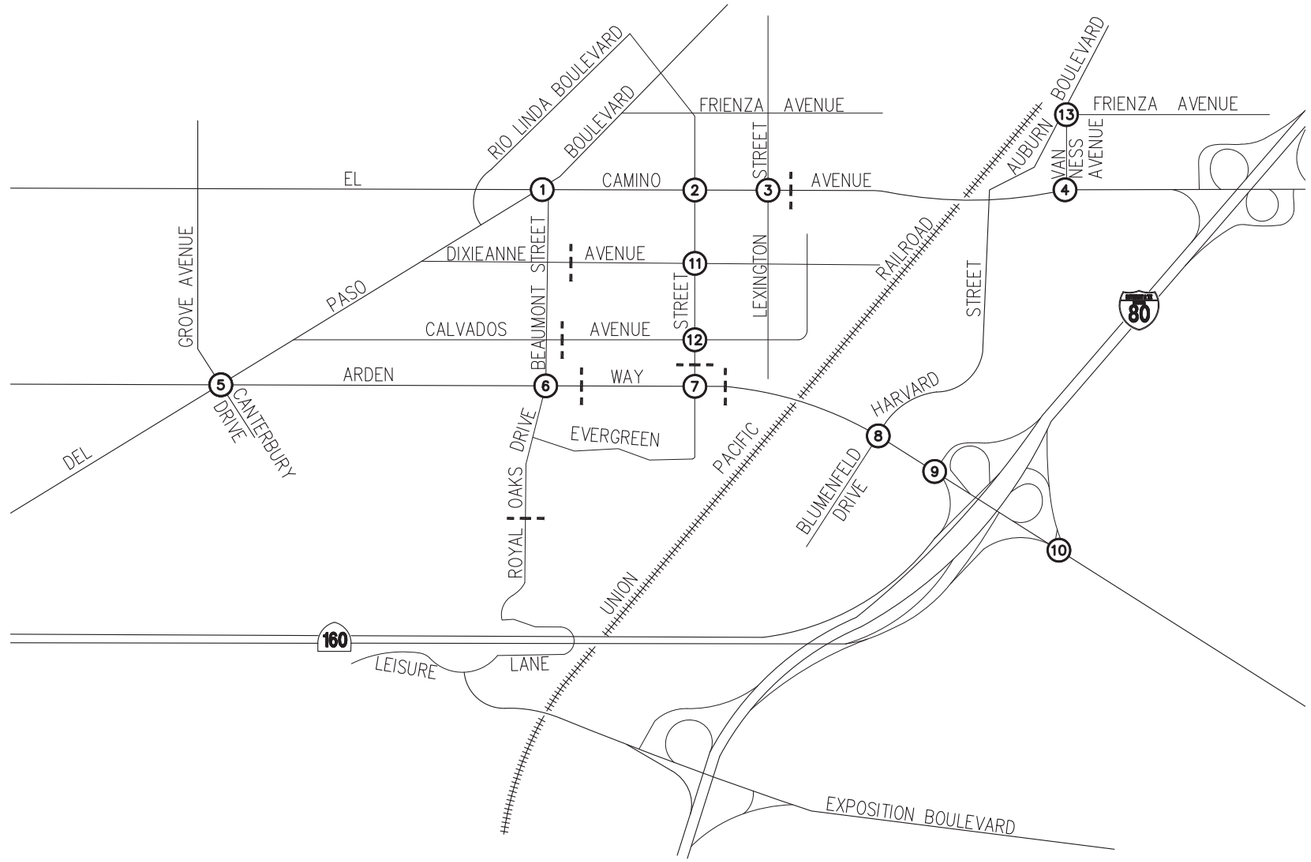
1. Northbound (NB) Bus-80 exit to El Camino Avenue
2. Southbound (SB) Bus-80 exit to El Camino Avenue
3. NB Bus-80 exit to Arden Way
4. SB Bus-80 exit to Arden Way
5. NB State Route (SR)-160 exit to Arden Way

Merge

1. NB Bus-80 merge with EB El Camino Avenue NB entrance ramp
2. SB Bus-80 merge with EB El Camino Avenue entrance ramp
3. NB Bus-80 merge with EB/WB Arden Way entrance ramp
4. SB Bus-80 merge with Arden Way entrance ramp (left)
5. SB SR-160 merge with WB Arden Way entrance ramp

This section also documents the effects of the proposed Swanston TVSP project on bicycle, pedestrian, parking, transit, and heavy rail facilities.





LEGEND:

- ① STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- UN-SIGNALIZED INTERSECTION
- STOP SIGN
- STUDY ROADWAY SEGMENT
- FREE MOVEMENT

NORTH
NOT TO SCALE

Source: Kimley-Horn and Associates, Inc., 2007.

FIGURE **6.11-1**

Study Facilities and Lane Configurations

During the circulation of the NOP, one comment related to transportation was received. The State of California Public Utilities Commission (CPUC) commented that any development projects adjacent to or near the rail corridor in the City should be planned with the safety of the rail corridor in mind. These safety considerations include but are not limited to planning for grade separations for major thoroughfares, improvements to existing at-grade highway rail crossings to accommodate increased traffic volumes, and appropriate fencing to limit access of trespassers onto the railroad right of way. The CPUC also noted that new crossings or modifications to existing crossings would require the authority of the CPUC. The proposed Swanston TVSP project encompasses an existing at-grade crossing of Royal Oaks Drive, at the intersection with Arden Way, and the previously proposed pedestrian overcrossing of the Union Pacific railroad, between the USAA Complex and the Swanston Light Rail Station.

Setting

Roadway Network

The primary roadways in the vicinity of the Swanston TVSP project area are described below.

Capital City Freeway (Business Loop 80 or Bus-80) is an east-west freeway located in the immediate vicinity of the Swanston TVSP project area. There are two interchanges that provide direct access to the project area: El Camino Avenue and Arden Way. The Bus-80 connects downtown Sacramento with northeast Sacramento County and serves approximately 180,500 vehicles per day[1] with three lanes in each direction.

State Route 160 (SR-160) is an east-west freeway located approximately one-half mile south of the Swanston TVSP project area. Project area traffic can access SR-160 via Royal Oaks Drive or Arden Way. SR-160 serves approximately 37,000 vehicles per day[2] with two lanes in each direction.

Arden Way is a four-lane, east-west roadway near the southern boundary of the Swanston TVSP project area. Arden Way becomes Garden Highway west of the project area. To the east, Arden Way connects the project area with the communities of Arden Oaks and Arden Park before terminating at the American River. In the vicinity of the project area, Arden Way serves approximately 23,500 vehicles per day.[3]

El Camino Avenue is a four-lane, east-west arterial along the northern boundary of the Swanston TVSP project area. El Camino Avenue extends from Interstate 80 (I-80) in the western Sacramento County to the west, through the project area, to Fair Oaks Boulevard to the east. In the vicinity of the project area, El Camino Avenue serves approximately 25,500 vehicles per day.[3]

Evergreen Street is a two-lane, north-south roadway located in the middle of the Swanston TVSP project area. Evergreen Street becomes Lampass Avenue north of Del Paso Boulevard and, south of

[1] Caltrans Traffic and Vehicle Data Systems Unit, www.dot.ca.gov/hw/traffops/saferesr/trafdata/2006all.htm.
[2] Caltrans Traffic and Vehicle Data Systems Unit, www.dot.ca.gov/hw/traffops/saferesr/trafdata/2006all.htm.
[3] Kimley-Horn and Associates, Inc., October 16 and 18, 2007.

Arden Way, becomes an east-west roadway which terminates at Royal Oaks Drive. In the vicinity of the project area, Evergreen Street serves approximately 6,000 vehicles per day.[4]

Harvard Street is a north-south roadway located east of the Regional Transit (RT) and Amtrak/Union Pacific Railroad (UPRR) rail corridor. North of Silica Avenue, Harvard Street is a two-lane roadway with a posted speed limit of 25 mph. South of Silica Avenue, Harvard Street becomes a four-lane collector roadway with a center two-way-left-lane and a posted speed limit of 35 mph.

Lexington Street is a two-lane, north-south roadway located in the middle of the Swanston TVSP project area. Lexington Street extends from Glenrose Avenue to the north to Calvados Avenue to the south.

Dixieanne Avenue is a two-lane, east-west local street that bisects the Swanston TVSP project area. Dixieanne Avenue extends between Del Paso Boulevard and Clay Street.

The remaining roadways in or serving the Swanston TVSP project area are local or residential streets.

Traffic Operations

This section describes operating conditions at intersections, roadway segments, and freeway ramps within or near the Swanston TVSP project area. Intersection turning movement and 24-hour roadway segment counts were performed in October 2007. Figure 6.11-2 shows the results of these counts and existing traffic controls at the key intersections. Furthermore, the volumes for Bus-80 (Year 2005) mainline and the most current ramp traffic volumes were obtained from Caltrans.[5,6]

Intersections. Analysis of significant environmental impacts at intersections is based on the concept of Level of Service (LOS). The LOS of an intersection is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of Service used in this study were determined using methods defined in the *Highway Capacity Manual, 2000* (HCM) and appropriate traffic analysis software.

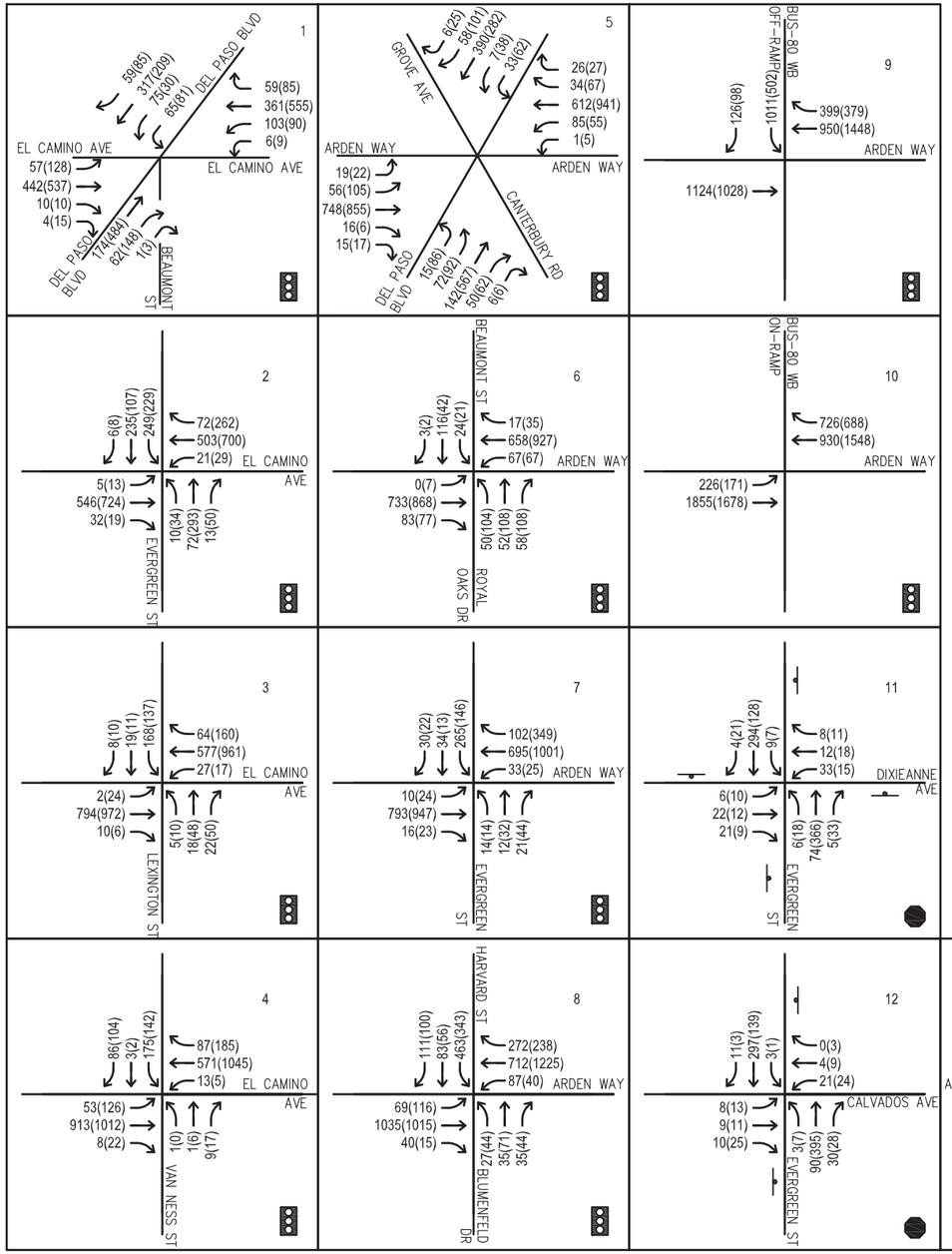
The HCM includes procedures for analyzing signalized and unsignalized intersections. The signalized intersection procedure defines LOS as a function of average control delay per vehicle for the intersection as a whole. The unsignalized intersection procedure defines LOS as a function of average control delay for each minor street approach movement. The unsignalized procedures apply to intersections with two-way stop control (TWSC) and all-way stop control (AWSC). However, per the City's Traffic Impact Guidelines, overall intersection control delay is used in reporting LOS for unsignalized intersections. Table 6.11-1 presents unsignalized and signalized intersection LOS definitions as defined in the HCM.

---

4 Kimley-Horn and Associates, Inc., October 16 and 18, 2007.

5 Year 2005 volumes were used for the mainline as they were generally higher than 2006 volumes.

6 Caltrans Traffic and Vehicle Data Systems Unit, http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2006all.htm.



LEGEND:

XX	AM PEAK–HOUR TRAFFIC VOLUME
(XX)	PM PEAK–HOUR TRAFFIC VOLUME
	SIGNALIZED INTERSECTION
	UN–SIGNALIZED INTERSECTION
	STOP SIGN
(1)	STUDY INTERSECTIONS
◇1	STUDY ROADWAY SEGMENT

SEGMENT	DAILY VOLUME
◇1	25,724
◇2	23,110
◇3	23,565
◇4	1,888
◇5	971
◇6	6,123
◇7	5,830

NORTH
NOT TO SCALE

***Source*:** Kimley-Horn and Associates, Inc., 2007.

FIGURE **6.11-2**
Existing Traffic Volumes

Table 6.11-1
Unsignalized and Signalized Intersection Level of Service Criteria

Level of Service (LOS)	Unsignalized	Signalized
	Average Control Delay (sec/veh)	Control Delay per Vehicle (sec/veh)
A	10	10
B	> 10–15	> 10–20
C	> 15–25	> 20–35
D	**> 25–35**	**> 35–55**
E	**> 35–50**	**> 55–80**
F	**> 50**	**> 80**

Source: Highway Capacity Manual, 2000.
Note: Unacceptable LOS shown in **bold**.

Table 6.11-2 presents the existing peak-hour operating conditions for the study intersections. Traffic count data are presented in Appendix E.

As indicated in Table 6.11-2, the study intersections operate from LOS A to LOS F during the AM and PM peak-hours. Four intersections operate at unacceptable LOS: El Camino Avenue/Evergreen Street (in the PM), Arden Way/Del Paso Boulevard (in the AM and PM), Arden Way/Harvard Street (in the PM), and Auburn Boulevard/Van Ness Street (in the PM). The first three intersections are signalized; the fourth intersection has stop signs on two of the approaches. (Analysis worksheets for this scenario are presented in Appendix E.)

The intersection analysis also includes the delay experienced by vehicular traffic on the roads crossing the light rail line, when a train is passing. The analysis is based on an earlier study[7] that was conducted to evaluate the traffic signal parameters for the Arden Way corridor in the Swanston TVSP project area. The traffic signal timings implemented as a result of the ITS project are reflected in the Synchro analysis used for the earlier ITS project and the current Swanston TVSP traffic impact analysis.

Roadway Segments. Roadway segment LOS definitions are based on the City's Traffic Impact Guidelines.[8] All study roadway segments are assumed to be classified as "Arterial, low access control." Table 6.11-3 presents the applicable roadway segment LOS definitions.

Table 6.11-4 presents the existing peak-hour operating conditions for the study roadway segments. The study roadway segments operate from LOS A to LOS D during the AM and PM peak-hours; only the segment along El Camino east of Lexington operates at an unacceptable LOS D.

[7] Kimley-Horn and Associates, Inc., *Arden Way Traffic Engineering and ITS Integration Project*, February 22, 2006.
[8] *Traffic Impact Guidelines*, City of Sacramento, February 28, 1996.

Table 6.11-2
Existing Intersection Levels of Service

#	Intersection	Traffic Control	AM Peak-Hour Delay (seconds)	AM Peak-Hour LOS	PM Peak-Hour Delay (seconds)	PM Peak-Hour LOS
1	El Camino Avenue at Del Paso Boulevard	Signal	26.9	C	32.7	C
2	El Camino Avenue at Evergreen Street	Signal	22.7	C	**48.0**	**D**
3	El Camino Avenue at Lexington Street	Signal	7.4	A	8.2	A
4	El Camino Avenue at Van Ness Street	Signal	12.1	B	13.8	B
5	Arden Way at Del Paso Boulevard	Signal	**67.3**	**E**	**87.9**	**F**
6	Arden Way at Royal Oaks Drive/ Beaumont Street	Signal	11.8	B	11.8	B
7	Arden Way at Evergreen Street	Signal	16.9	B	17.4	B
8	Arden Way at Harvard Street	Signal	32.8	C	**41.2**	**D**
9	Arden Way at Business 80 WB Off-Ramp	Signal	17.0	B	10.2	B
10	Arden Way at Business 80 EB On-Ramp	Signal	4.4	A	6.3	A
11	Evergreen Street at Dixieanne Avenue	AWSC	9.4	A	11.9	B
12	Evergreen Street at Calvados Avenue	TWSC[a]	1.4/12.6 (WB)	A/B	2.0/16.5 (WB)	A/C
13	Auburn Boulevard/Van Ness Street at Frienza Avenue	TWSC[a]	2.0/14.9 (EB)	A/B	**39.6/98.9 (EB)**	**E/F**

Source: Kimley-Horn and Associates, 2007.

Notes:

Unacceptable LOS shown in **bold**.

a. Average intersection control delay/worst minor approach (worst minor movement approach direction).

Table 6.11-3
Roadway Segment Level of Service Criteria

Facility Type	Number of Lanes	Maximum Volume for Given Service Level A	B	C	D	E
Arterial, Low Access Control	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**

Source: Traffic Impact Guidelines, City of Sacramento, February 28, 1996.

Note: Unacceptable LOS shown in **bold**.

Table 6.11-4
Existing Roadway Segment Levels of Service

Location	Number of Lanes	ADT (veh/day)	LOS
El Camino Ave. east of Lexington St.	4	**25,724**	**D**
Arden Way West of Royal Oaks Dr./Beaumont St.	4	23,110	C
Arden Way West of Evergreen St.	4	23,565	C
Dixieanne Ave. east of Beaumont St.	2	1,888	A
Calvados Ave. east of Beaumont St.	2	971	A
Evergreen St. north of Arden Way	2	6,123	A
Royal Oaks Dr. south of Arden Way	2	5,830	A

Source: Kimley-Horn and Associates, 2007.
Note: Unacceptable LOS shown in **bold**.

Freeway Merge/Diverge Segments.[9] The determination of freeway ramp junction (merge and diverge) LOS is based on the density of vehicles within the corresponding merge or diverge influence area. The HCM establishes the influence area as 1,500 feet in advance of diverge points and 1,500 feet extending past merge points. Table 6.11-5 presents freeway ramp junction LOS definitions, and existing Bus-80 freeway ramp junction levels of service are presented in Table 6.11-6.

As indicated in Table 6.11-6, the existing Bus-80 freeway ramp junctions operate from LOS B to LOS F during the AM and PM peak-hours. Nine out of the ten ramp locations selected for study operate at unacceptable LOS. The merge from Arden Way to southbound Bus-80 operates at LOS F in both the AM and PM peak hour. Analysis worksheets for this scenario are presented in Appendix E.

Pedestrian and Bicycle Facilities

The Swanston TVSP project area generally lacks bicycle and pedestrian facilities. The lack of sidewalks is likely due to frontage improvements being constructed only adjacent to parcels that have been developed in recent years. A lack of recent developments has resulted in aged streets largely without curbs, gutters, and sidewalks in a majority of the Swanston TVSP project area.

With the exception of the segment of Harvard Street south of Silica Avenue, there are currently no designated bike lanes on Swanston TVSP project area roadways. Furthermore, the El Camino Avenue and Arden Way bridges over the Sacramento Regional Transit (RT) District and Amtrak/UPRR tracks provide the only pedestrian connections to both sides of the tracks in the Swanston TVSP project area.

[9] The traffic analysis indicated that implementation of the Swanston TVSP project would result in a reduction in vehicle trips on I-80 between Arden Way and West El Camino Avenue, when compared to buildout of the Swanston TVSP project area under General Plan land use assumptions; i.e., the project would result in fewer trips being assigned to the freeway. Based on these results, and in consultation with the various planning agencies overseeing this study, it was determined that a freeway mainline analysis was not required, and therefore was not conducted.

Table 6.11-5
Freeway Ramp Merge and Diverge Level of Service Criteria

Level of Service (LOS)	Density (pc/mi/ln)[a]
A	< 10
B	> 10–20
C	> 20–28
D	> 28–35
E	> 35
F	**Demand Exceeds Capacity**

Source: Highway Capacity Manual, 2000.

Notes:

Unacceptable LOS shown in **bold**.

a. Passenger Cars per Mile per Lane

Table 6.11-6
Existing Freeway Ramp Junction Levels of Service

		AM Peak-Hour			PM Peak-Hour		
Location	**Junction Type**	**Total Volume**	**Density (pc/mi/ln)**	**LOS**	**Total Volume**	**Density (pc/mi/ln)**	**LOS**
EB El Camino Ave. to NB Bus-80 (loop ramp)	Merge	120	18.3	B	**158**	**31.8**	**D**
EB El Camino Ave. to SB Bus-80 (slip ramp)	Merge	**337**	**35.3**	**F**	451	22.1	C
EB/WB Arden Way to NB Bus-80 (slip ramp)	Merge	628	22.1	C	**806**	**35.1**	**F**
EB/WB Arden Way to SB Bus-80 (loop ramp)	Merge	**834**	**85.4**	**F**	**1123**	**47.0**	**F**
WB Arden Way to SB SR-160 (loop ramp)	Merge	359	27.2	C	192	15.8	B
NB Bus-80 to El Camino Ave.	Diverge	915	12.2	B	**1090**	**25.3**	**F**
SB Bus-80 to El Camino Ave.	Diverge	**269**	**42.9**	**F**	359	27.2	C
NB Bus-80 to Arden Way	Diverge	760	22.4	C	**1003**	**38.7**	**F**
SB Bus-80 to Arden Way	Diverge	**718**	**46.7**	**F**	**819**	**31.3**	**D**
NB SR-160 to Arden Way	Diverge	528	12.6	B	**1889**	**37.8**	**F**

Source: Kimley-Horn and Associates, 2007.

Note: Unacceptable LOS shown in **bold**.

Parking Facilities

On-street parking is generally permitted along Arden Way through the Swanston TVSP project area. Conversely, on-street parking is generally prohibited along El Camino Avenue with the exception of the south side of the roadway between Lexington Street and Clay Street. On-street parking is generally allowed on most residential streets in and around the Swanston TVSP project area.

Transit Facilities

There are three RT light rail transit (LRT) stations in or near the Swanston TVSP project area, the Swanston Station, the Royal Oaks Station, and the Arden/Del Paso Station. All three stations serve the RT Light Rail Blue Line which stretches from Watt Avenue/I-80 to Meadowview Road. The Swanston Station currently averages 228 daily boardings[10] and also accommodates 311 vehicles at its park-and-ride lot. The Royal Oaks Station currently averages 282 daily boardings[11] but does not provide a park-and-ride facility. The Arden/Del Paso Station serves as a transit hub, offering a connection point to bus lines and is located approximately 3,800 feet west of the Royal Oaks Station, west of the Swanston TVSP project area.

The bus routes in the area of the proposed Swanston TVSP project are shown in Figure 6.11-3. There are three RT bus routes in the vicinity, Routes 20, 22, and 23. All three bus routes traverse the Swanston TVSP project area on Arden Way en route to their common termination point at the Arden/Del Paso Station. Route 20 is a relatively short route that connects the Arden Del Paso Station, through the Swanston TVSP project area to Country Club Plaza. Weekday service frequency varies from approximately 40 minutes to over an hour, and service is provided from approximately 6:00 a.m. to 7:00 p.m. Route 22 connects the Arden/Del Paso Station, through the Swanston TVSP project area, to the area of Fair Oaks Boulevard and Palm Drive in Carmichael. Weekday service is approximately every hour from about 7:30 a.m. to 8:30 p.m. Route 23 connects the Arden/Del Paso Station, through the Swanston TVSP project area to the Sunrise Mall and other locations in the City of Citrus Heights. Weekday service frequency varies from 8 minutes to approximately 40 minutes from approximately 5:00 a.m. to 10:30 p.m. These three bus routes have stops at various locations along Arden Way.[12]

Heavy Rail

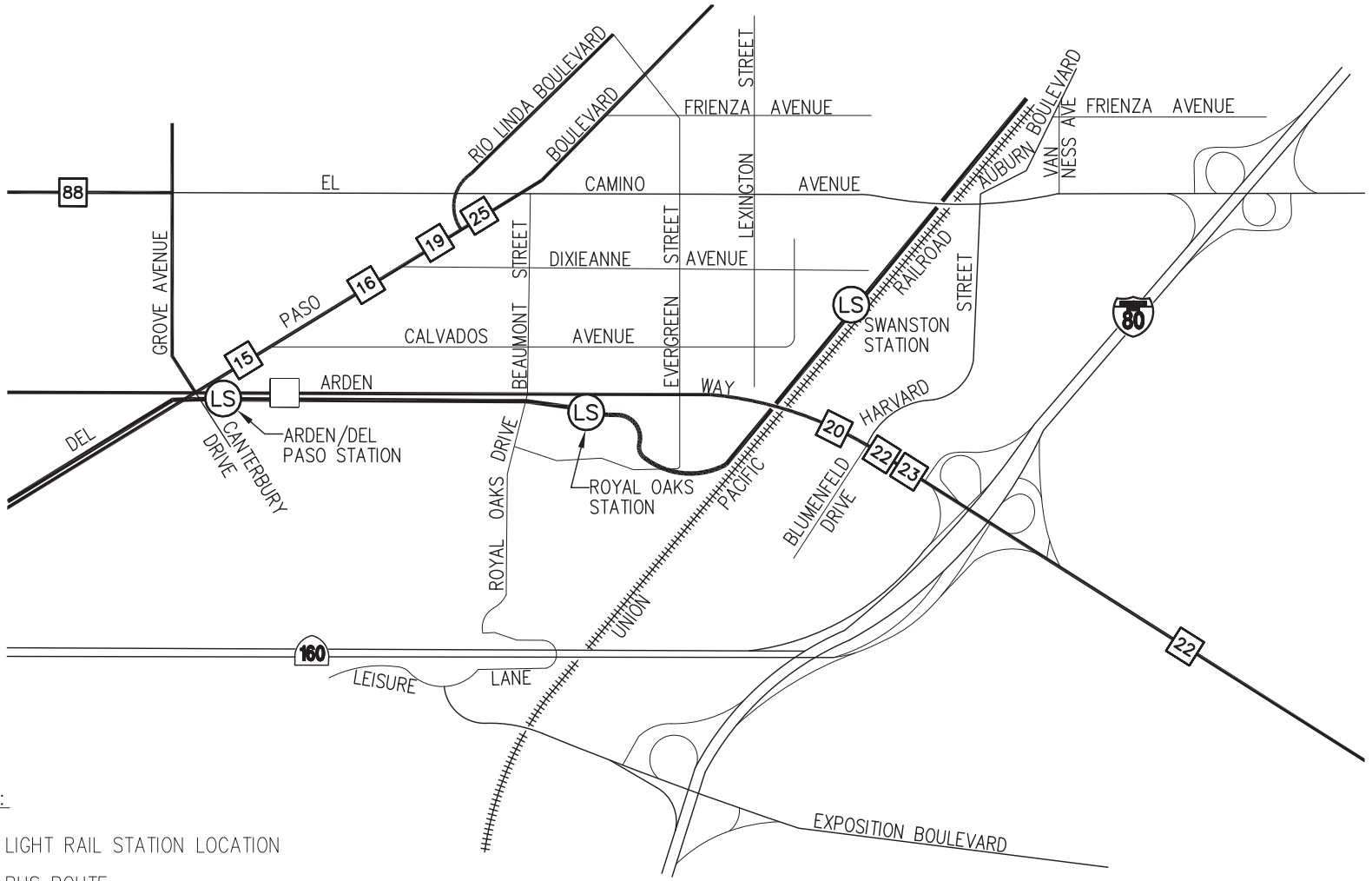
The Swanston TVSP project area is bisected by a pair of UPRR tracks. The tracks are used by freight and Amtrak trains and have grade-separated intersections at Arden Way and El Camino Avenue. The tracks serve approximately 64 freight and Amtrak trains per day.

---

[10] Bay Area Economics, March 3, 2006.

[11] Sacramento Regional Transit Light Rail, www.sacrt.com/TLC/NortheastLine/EconomicProfiles/RoyalOaks.pdf.

[12] Regional Transit Routes and Schedules, http://www.sacrt.com/schedules/current/routes.stm.



***Source*:** Kimley-Horn and Associates, Inc., 2007.

FIGURE **6.11-3**

Existing Transit Service

Grade Crossings

The light rail line crosses study roadways at five locations. The El Camino Avenue and Arden Way crossings are grade separated. The crossings of Evergreen Street, the driveway to the Caltrans warehouse at 2001 Evergreen Street, and Royal Oaks Drive are at grade.

The three existing at-grade crossings are owned and operated by Sacramento Regional Transit (RT) and were designed and constructed to meet RT's System Safety Program Plan (SSPP).[13] The SSPP is a master plan document that presents a comprehensive safety program for bus and rail operations within RT's service area. RT provides for the safety of its employees, contractors, patrons and the public by enforcing safety legislation and all applicable environmental, health and security provisions contained within regulatory authority administered through the California Occupational Safety and Health Administration (CALOSHA), the California Public Utilities Commission (CPUC), the California Environmental Protection Agency (CalEPA), and through standard provisions in each contract.

The Royal Oaks crossing has good visibility and sight lines, and relatively low traffic volumes (5830 ADT in 2007). Motor vehicle traffic flows at speeds between 25 and 45 miles per hour. Based on these general conditions, and the above-mentioned regulations, the following safety measures have been implemented at this crossing:

- Flashing light signal
- Audible warning
- Automatic gates
- Fencing along the tracks to limit access

The Evergreen Street crossing has the following safety measures:

- Flashing light signal
- Audible warning
- Automatic gates

The Caltrans driveway crossing has the following safety measures:

- Flashing light signal
- Automatic gates

RT has a separate project, currently underway to straighten and double track the Northeast Corridor light rail line through the Lumberjack property near the Royal Oaks Light Rail Station. The at-grade crossing to the Caltrans warehouse will be removed as part of this project, and the location where the

[13] Sacramento Regional Transit. *Short Range Transit Plan, 2000 to 2008*.

tracks cross Evergreen Street will be moved. The new at-grade crossings will be designed and constructed in accordance with all applicable safety regulations as stipulated by CPUC.[14]

For any proposed pedestrian crossings of the rail line, CPUC regulations will need to be observed in the future planning and design of uses alongside or crossing the rail line.

Applicable Plans and Policies

Federal and State

No federal or State plans or policies are applicable to the proposed Swanston TVSP project.

Local

City of Sacramento General Plan. The City of Sacramento General Plan outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The Circulation Element includes the following overall transportation goals:

- Create a safe, efficient surface transportation network for the movement of people and goods.
- 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.
- Maintain a desirable quality of life, including good air quality, while supporting planned land use and population growth.

The following goals and policies from the Circulation Element are applicable to the proposed Swanston TVSP project:

Streets and Roads, Goal D: Work towards achieving an overall Level of Service C on the City's local and major street systems.

Transit, Goal B, Policy 3: Work with Regional Transit in reviewing public and private construction projects and supporting Regional Transit recommendations and improvements.

Parking, Goal A: Provide adequate off-street parking for new development and reduce the impact of on-street parking in established areas.

Pedestrianways, Goal A, Policy 1: Require new subdivisions in planned unit developments to have safe pedestrian walkways that provide direct links between streets and major destinations such as bus stops, schools, parks, and shopping centers.

[14] Dave Stewart, California Public Utilities Commission, phone conversation, January 16, 2009.

Pedestrianways, Goal A, Policy 3: Encourage existing and new commercial and office establishments to develop and enhance pedestrian pathways using planting, trees and creating pedestrian crosswalks through parking areas or over major barriers such as freeways or canals.

Pedestrianways, Goal A, Policy 4: Encourage mixed use developments to generate higher pedestrian activity.

Pedestrianways, Goal A, Policy 5: Require developments to provide street-separated pedestrian access to shopping centers, business activity centers and transit stations and facilities.

Bikeways, Goal B, Policy 11: Require future developments to conform to the Bikeways Master Plan.

The City is currently in the process of releasing an updated General Plan.[15] A major emphasis of the update is the interconnection between land use and transportation. The new policies and goals are intended to discourage development patterns that lead to dependence on the automobile, and instead promote alternative development patterns that will be more supportive of public transportation, the preservation of open space, and will lead to the revitalization of central cities and existing communities. The update includes several Smart Growth Principles that are embodied by the proposed Swanston TVSP project:

- Mix land uses and support vibrant city centers
- Foster walkable, close-knit neighborhoods
- Provide a variety of transportation choices
- Support land use, transportation management, infrastructure and environmental planning programs that reduce vehicle emissions and improve air quality
- Discourage urban sprawl, promote infill development and the concentration of development in the urban core of the region

As part of the effort to meet its adopted Smart Growth Principles, the City will be re-evaluating several of its current transportation policies, such as Level of Service (LOS). As stated above, the current General Plan that was in effect during the preparation of this EIR has a goal of LOS C for all roadways and intersections within the City. While LOS C ensures mobility for vehicles traveling on City roadways, it does not really take into account the mobility of pedestrians and bicyclists. For example, to maintain LOS C conditions within the City, many roadways will need to be widened, which will create longer crossing distances for pedestrians and bicyclists. The current LOS C standard does not allow the City to balance land use decisions with traffic flow considerations and often results in costly EIR and traffic studies for infill development projects. Therefore, for these and other reasons, the City will be re-evaluating the LOS policy during the General Plan Update process.

[15] City of Sacramento. *Draft 2030 General Plan*. http://www.sacgp.org/documents.html. May 6, 2008.

North Sacramento Community Plan. The following goals and policies from the Transportation Element of the North Sacramento Community Plan are applicable to the proposed Swanston TVSP project.

- Strive towards development of a comprehensive transportation system that allows safe and efficient movement of people and goods within and through the community.
- Reduce impact of through traffic within residential areas and adjacent to elementary schools.
- Support the preservation of existing levels of bus service and work towards the realization of bus and light rail transit service improvements in the future.
- Continue efforts towards completion of a comprehensive bikeway system which emphasizes commuter routes.
- Provide adequate street improvements to insure pedestrian safety.

Pedestrian Friendly Street Standards. The City's Pedestrian Friendly Street Standards were approved in 2004. The standards include street cross-sections for use in areas that are residential, commercial (e.g., office park), or industrial. In 2004, the City Council approved an amendment to the City Code that allows modifications of the standards for infill areas. This exemption is intended to allow flexibility in the City standards so that the street improvements will not become an undue burden on infill projects.

2010 Sacramento City and County Bikeway Master Plan. The 2010 Bikeway Master Plan was approved by the Sacramento County Board of Supervisors and the Sacramento City Council in 1993 and 1995, respectively. The Bike Master Plan provides a framework for ensuring bikeways are connected and serve various areas of the City and County.

Impact Assessment and Mitigation Measures

Methods of Analysis

Trip Generation. The number of trips anticipated to be generated by the proposed Swanston TVSP project was derived using data included in the *Trip Generation Manual*, 7th Edition, published by the Institute of Transportation Engineers (ITE).

Development within the proposed Strategic Plan area (expected to occur between now and 2025) is estimated to generate approximately 4,967 total daily trips from new uses only. The proposed Swanston TVSP project (including development within the Strategic Plan and the Long-Term Plan areas) is estimated to generate about 15,300 daily trips from new uses and development by buildout. As noted in Chapter 2, Project Description, the timeframe for buildout is entirely speculative and will depend largely on market conditions. Since a relatively small area and level of development is anticipated to occur through 2025, it is not unreasonable to assume a relatively long horizon for buildout of the entire Swanston TVSP project area. For purposes of this analysis, it has been assumed that buildout would occur by the year 2050.

Trip Internalization. A major assumption associated with the "transit village" concept is that it would result in different traffic impacts, when compared to the status quo development pattern associated with the existing General Plan. First and foremost, the proposed Swanston Station Specific Plan would encourage residents and visitors to use alternative modes of travel, such as light rail, bus, bicycle, and walking for their trips. The light rail station is located within a ½-mile radius of a large part of the community, and would provide high frequency service during peak hours to downtown Sacramento. There would be a network of sidewalks and trails that would make it possible for people to safely walk and bike throughout the community. There would also be the provision of amenities and design features, such as street lighting, crosswalks, shade trees, and bike parking, policies that would facilitate intermodal connections, e.g., a person would be able to bike from their home to the light rail station, and park their bike at the station, or bring it on-board with them. Land uses would be clustered together more compactly. This would result in shorter walking distances, further contributing to the tendency of people to walk, as opposed to getting in their cars and driving. There would also be a mixture of land uses in close proximity to each other. As a result, residential areas would be close to offices, and retail. Residents would be able to walk or bike to work. Office workers would be able to walk to nearby restaurants for lunch. This land use pattern would contribute to a higher degree of "trip internalization," that is, trips staying within the borders of the Swanston TVSP project area. As a result, total trips are reduced by 13.9 percent daily (and 14.6 percent during the PM peak hour).

In contrast, the land uses associated with the existing General Plan tend to be lower density, residential and commercial development that typifies much of the Sacramento urban area. This type of development pattern is much more auto oriented. Because it is lower density, land uses are more spread out and beyond the walking distance of the average person. Land uses are also segregated, and, in many cases, there is very little retail mixed in with office complexes, or with residential subdivisions. Finally, these communities are really designed for automobiles, as opposed to alternative travel modes. In many cases, sidewalks are not present everywhere, there are no bike facilities, and public transit service is poor. Even if someone wanted to make a trip by an alternative mode, it would be difficult for them to do so.

Although the proposed Swanston TVSP project may generate approximately the same number of person trips, the percentage of those trips that are made by automobile should be lower, while the percentage of those trips that are made by transit, bicycling, and walking should be higher. Also, the percentage of trips that are "internalized" should be higher with the proposed Swanston TVSP project.

Mode Split. Mode split is a term that refers to the percentage of trips that are made by each of the available travel modes, for a given area. For example, on a nationwide basis, 76 percent of commute trips are made by people who drive alone, 12 percent are made by people in carpools, 5 percent are made by public transit, 3 percent are made by walking, 0.4 percent are made by bicycling.[16] The mode split for development that could occur within the Swanston TVSP project area assumes that one percent of the project's trips would be via alternate travel modes, and 99 percent would be made by

[16] U.S. Census Bureau. 2000 Census Supplemental Survey Summary. Table P047: Means of Transportation to Work. August 2001.

automobile. This conservative assumption is consistent with the relatively small size of the Strategic Plan area (23 acres). In other locations near light rail stations (for example the 65th Street/University Transit Village Plan), a transit mode split of seven percent has been assumed. The seven percent mode split is also considered to be conservative for the purpose of analyzing environmental impacts, but still recognizes that land uses near light rail stations tend to generate more non-vehicular (bike and walk) trips than locations situated further from a transit station. Table 6.11-7 presents a comparison of net new trips that would be generated by land uses that could be developed within the Strategic Plan area, using alternate transit mode split assumptions of one percent and seven percent. Due to the relatively small size of the Strategic Plan area, the effect of the seven percent alternate mode split assumption is minor and would not alter the results of the study.

Table 6.11-7
Net Trip Comparison for 1% and 7% Transit Ridership

		Net AM Peak Hour Trips			Net PM Peak Hour Trips		
Transit Trips Assumed	**Net Daily Trips**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
1%	-1,250	-105	82	-23	-41	-137	-177
7%	-1,714	-112	70	-42	-63	-157	-220

Source: Kimley-Horn and Associates, 2007.

Pass-by Trips. A pass-by trip reduction was also applied to the commercial uses. This reduction of 30 percent accounts for vehicles that stop at commercial or residential uses in the Swanston TVSP project area, when they are already in the area, en route to another use. It is in this sense that the second stop becomes a "pass-by" stop rather than a separate and dedicated vehicle trip, and reduces the total vehicle trips on roads within the Swanston TVSP project area.

It is reasonable to assume that the transit mode split assumption would increase from the one percent assumption that was made for the Strategic Plan area, as development occurs in the Long-Term Plan area and more of the linkages between the Swanston TVSP project area and light rail station are completed. For example, current data indicate that the actual transit mode split is closer to 20 percent for the more urbanized part of the Sacramento region, close to downtown.[17] The Swanston TVSP project area is approximately three miles from downtown Sacramento. Given time, as development continues to occur, downtown Sacramento will continue to expand and become even more of an activity center. Therefore, although the ultimate transit mode split in the Swanston TVSP project area may not reach 20 percent, it is reasonable to expect that it will be significantly greater than 1 percent.

For the purposes of estimating the vehicle trip reduction and internalization rates for the Swanston TVSP project area, a review of observed data from another transit-oriented development in the Sacramento region was performed. The midtown Sacramento neighborhood is located approximately one mile east of downtown and the State Capitol. This is an older mixed use neighborhood, with a grid street pattern, relatively high residential density, a good balance of jobs and housing, a good balance of

[17] Sacramento Regional Transit, Strategic Plan: 2004-2009, page 18.

retail and non-retail jobs, it is relatively walkable, and close to LRT. Midtown also has income levels well above the regional average. The Sacramento Area Council of Governments (SACOG) household survey from 2002 indicates that the daily trip generation rate for households in Midtown was almost 50 percent lower than the standard ITE trip generation rate for this type of land use (multi-story apartment complexes and condominiums). For the purposes of this analysis, a more conservative 20 to 30 percent vehicle trip reduction rate was assumed for the Swanston TVSP project area.

Net Effect. Based on all of the above, development that could occur within the Strategic Plan area is anticipated to result in approximately 1,332 fewer daily vehicle trips on area roads, compared to current trip rates. In other words, the existing uses that would be replaced by new development in the Strategic Plan area, have greater trip generation characteristics than the new uses. Furthermore, it is estimated that full implementation of the proposed Swanston TVSP project (Strategic Plan area and the Long-Term Plan area) would lead to the elimination of approximately 7,300 daily vehicle trips and about 1,300 PM peak hour vehicle trips in the Swanston TVSP project area, compared to existing zoning.

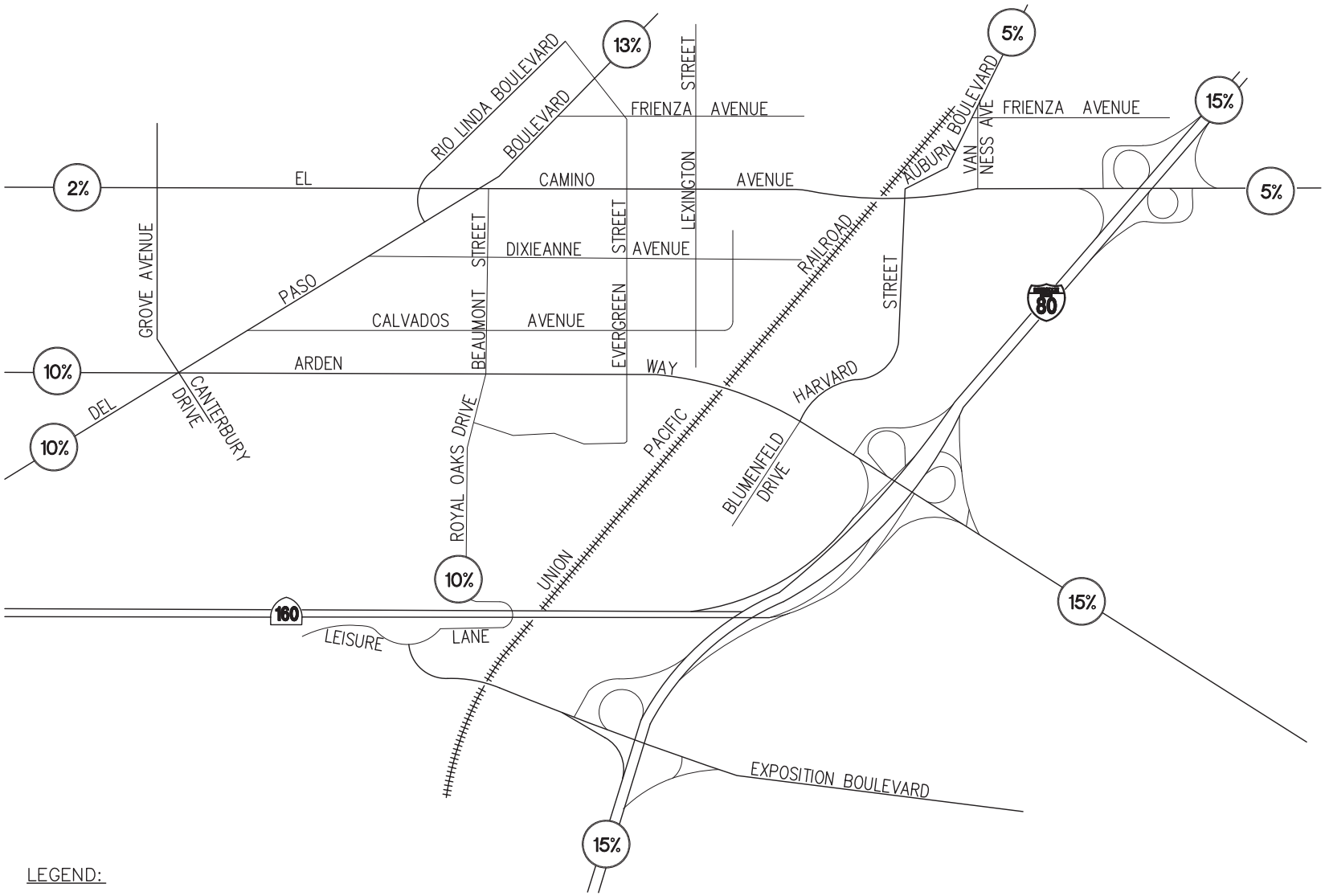
Trip Distribution. The distribution of traffic generated by the proposed Swanston TVSP project was based on the SACOG SACMET 2027 Travel Demand Model and observations of travel patterns in the vicinity of the Swanston TVSP project area. The resulting traffic volume distribution attributed to the proposed Swanston TVSP project is illustrated in Figure 6.11-4.

Baseline Conditions. The above existing conditions were adjusted to reflect recently approved or pending development projects. These "baseline" traffic conditions were developed to include planned and approved projects within the study area that would increase traffic volumes on the study area transportation facilities and affect operating conditions. The following projects have been approved by the City at the time the traffic study for this EIR was prepared, and are included in the Baseline Conditions analysis:

- 2001 Del Paso Blvd. Mixed-Use Building (P06-141)
- 501 Arden Way Mixed-Use Building (P06-033)
- Expo Office Development (P06-033)
- 2456 Rio Linda Blvd. Multi-tenant Commercial Building (P05-147)

Land use information for these projects was obtained from the City, and associated trips were added to the existing traffic conditions to establish Baseline Conditions.

Project Horizon and Related Assumptions. This analysis recognizes that the buildout of the Swanston TVSP project area will depend on market conditions, which cannot be readily anticipated far into the future. The market overview through 2025 resulted in the potential development associated with the Strategic Plan area. When full buildout might occur for the much larger Long-Term Plan area is highly speculative. For the purposes of this EIR, it is assumed that buildout would occur around the year 2050. Should the proposed Swanston TVSP project be built out before the year 2050, the projected daily project vehicle trips would remain the same as currently projected. It should be noted



***Source*:** Kimley-Horn and Associates, Inc., 2007.

FIGURE **6.11-4**

Trip Distribution

that Swanston TVSP project area traffic conditions might differ slightly (no more than a few percentage points) from those shown in the attached roadway LOS analysis, depending on the year in which the proposed project is completed. Unrelated development in the surrounding Sacramento neighborhoods contributes high volumes of pass-by traffic to roads in the vicinity of the proposed Swanston TVSP project, and these volumes will change over time, unrelated to the proposed Swanston TVSP project.

Intersections. Table 6.11-8 presents the Baseline peak-hour operating conditions for the study intersections. Traffic volumes for this scenario are presented in Figure 6.11-5.

As indicated below, the study intersections operate from LOS A to LOS F during the AM and PM peak-hours under Baseline Conditions. The same four intersections identified as operating at unacceptable LOS under existing conditions would continue to function in less than desirable levels of delay. Analysis worksheets for this scenario are presented in Appendix E.

Roadway Segments. Table 6.11-9 presents the Baseline operating conditions for the roadway segments. As indicated in Table 6.11-9, the study area roadway segments operate from LOS A to LOS D during the AM and PM peak-hours. El Camino Avenue, east of Lexington Street, continues to operate at unacceptable LOS D, similar to existing conditions. Notably, two roadway segments along Arden Way (west of Royal Oaks and west of Evergreen) degrade to LOS D under Baseline Conditions; both were at an acceptable LOS C under existing conditions.

Freeway Merge/Diverge Segments. Baseline Bus-80 freeway ramp junction levels of services are presented in Table 6.11-10, which shows that the Baseline Bus-80 freeway ramp junctions operate from LOS B to LOS F during the AM and PM peak-hours. The same ramps that perform poorly in existing conditions would operate at less than desired LOS under Baseline Conditions. Analysis worksheets for this scenario are presented in Appendix E.

Determination of Impact. Project impacts were determined by comparing Baseline Conditions without the proposed Swanston TVSP project to Baseline Plus proposed Swanston TVSP Project Conditions.

Standards of Significance

The City[18] and Caltrans[19] have defined specific thresholds for establishing significant environmental impacts. The proposed Swanston TVSP project would have a significant impact with regard to traffic and circulation if it would:

[18] *Traffic Impact Guidelines*, City of Sacramento, February 28, 1996.
[19] Guide for the Preparation of Traffic Impact Studies, Caltrans, December 2002.

Table 6.11-8
Baseline Conditions – Intersection Levels of Service

#	Intersection	Traffic Control	AM Peak-Hour Delay (seconds)	AM Peak-Hour LOS	PM Peak-Hour Delay (seconds)	PM Peak-Hour LOS
1	El Camino Avenue at Del Paso Boulevard	Signal	27.1	C	33.5	C
2	El Camino Avenue at Evergreen Street	Signal	22.7	C	**48.3**	**D**
3	El Camino Avenue at Lexington Street	Signal	7.4	A	8.2	A
4	El Camino Avenue at Van Ness Street	Signal	12.3	B	14.8	B
5	Arden Way at Del Paso Boulevard	Signal	**68.1**	**E**	**105.3**	**F**
6	Arden Way at Royal Oaks Drive/Beaumont Street	Signal	12.1	B	12.4	B
7	Arden Way at Evergreen Street	Signal	16.8	B	17.6	B
8	Arden Way at Harvard Street	Signal	32.5	C	**41.6**	**D**
9	Arden Way at Business 80 WB Off-Ramp	Signal	17.0	B	9.8	A
10	Arden Way at Business 80 EB On-Ramp	Signal	4.5	A	7.3	A
11	Evergreen Street at Dixieanne Avenue	AWSC	9.4	A	11.9	B
12	Evergreen Street at Calvados Avenue	TWSC[a]	1.4/12.6 (WB)	A/B	2.0/12.8 (WB)	A/B
13	Auburn Boulevard/Van Ness Street at Frienza Avenue	TWSC[a]	2.1/15.1 (EB)	B/C	**46.3/116.0 (EB)**	**E/F**

Source: Kimley-Horn and Associates, 2007.

Notes:

Unacceptable LOS shown in **bold**.

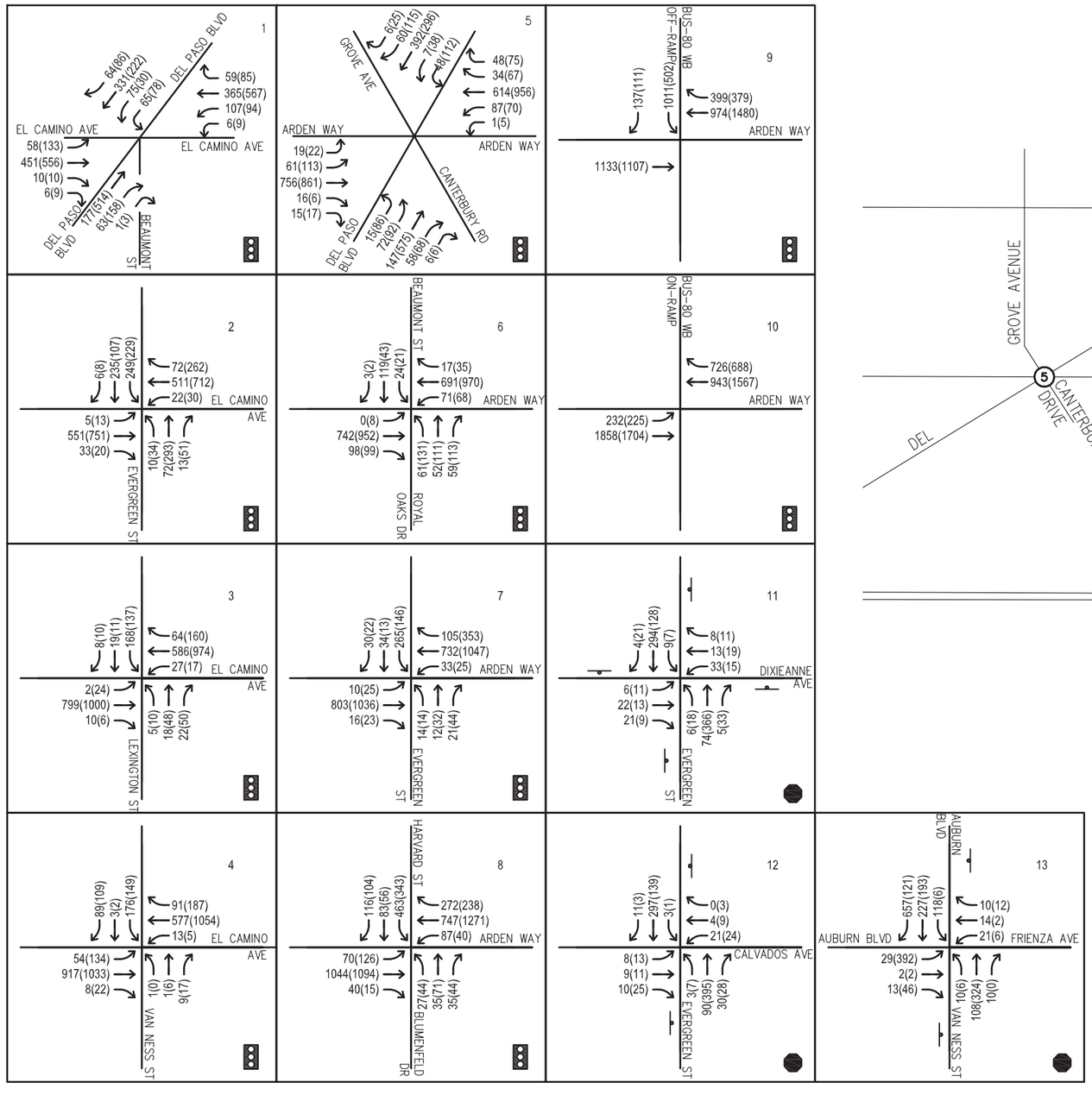
a. Average intersection control delay/worst minor approach (worst minor movement approach direction).

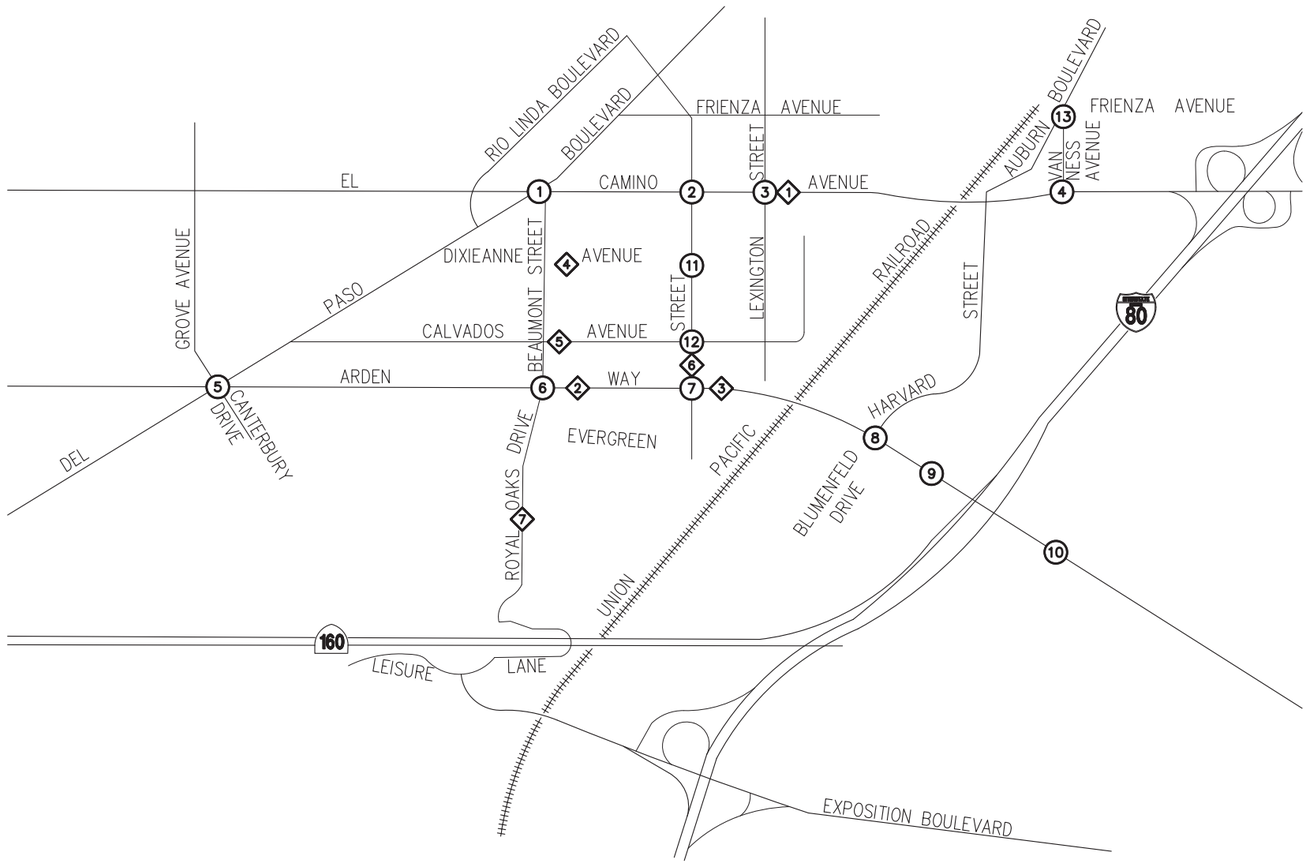
Table 6.11-9
Baseline Conditions – Roadway Segment Levels of Service

Location	Number of Lanes	ADT (veh/day)	LOS
El Camino Ave. east of Lexington St.	4	**26,183**	**D**
Arden Way west of Royal Oaks Dr./Beaumont St.	4	**25,275**	**D**
Arden Way west of Evergreen St.	4	**25,126**	**D**
Dixieanne Ave. east of Beaumont St.	2	1,952	A
Calvados Ave. east of Beaumont St.	2	971	A
Evergreen St. north of Arden Way	2	6,123	A
Royal Oaks Dr. south of Arden Way	2	6,510	A

Source: Kimley-Horn and Associates, 2007.

Note: Unacceptable LOS shown in **bold**.





LEGEND:

- XX AM PEAK-HOUR TRAFFIC VOLUME
- (XX) PM PEAK-HOUR TRAFFIC VOLUME
- SIGNALIZED INTERSECTION
- UN-SIGNALIZED INTERSECTION
- STOP SIGN
- (1) STUDY INTERSECTIONS
- ◇1 STUDY ROADWAY SEGMENT

SEGMENT	DAILY VOLUME
◇1	26,183
◇2	25,275
◇3	25,126
◇4	1,952
◇5	971
◇6	6,123
◇7	6,510

NORTH
NOT TO SCALE

***Source*:** Kimley-Horn and Associates, Inc., 2007.

FIGURE **6.11-5**

Baseline Traffic Volumes

Table 6.11-10
Baseline Conditions – Freeway Ramp Junction Levels of Service

Location	Junction Type	AM Peak-Hour			PM Peak-Hour		
		Total Volume	Density (pc/mi/ln)	LOS	Total Volume	Density (pc/mi/ln)	LOS
EB El Camino Ave. to NB Bus-80 (loop ramp)	Merge	120	18.3	B	**158**	**31.9**	**F**
EB El Camino Ave. to SB Bus-80 (slip ramp)	Merge	**337**	**35.3**	**F**	451	22.1	C
EB/WB Arden Way to NB Bus-80 (slip ramp)	Merge	630	22.1	C	**838**	**35.0**	**F**
EB/WB Arden Way to SB Bus-80 (loop ramp)	Merge	**834**	**85.4**	**F**	**1145**	**47.2**	**F**
WB Arden Way to SB SR-160 (loop ramp)	Merge	359	27.2	C	192	15.8	B
NB Bus-80 to El Camino Avenue	Diverge	915	12.2	B	**1090**	**25.3**	**F**
SB Bus-80 to El Camino Avenue	Diverge	**269**	**42.9**	**F**	359	27.2	C
NB Bus-80 to Arden Way	Diverge	711	22.5	C	**1016**	**38.8**	**F**
SB Bus-80 to Arden Way	Diverge	**729**	**46.8**	**F**	**832**	**31.5**	**D**
NB SR-160 to Arden Way	Diverge	528	12.6	B	**1889**	**37.8**	**F**

Source: Kimley-Horn and Associates, 2007.
Note: Unacceptable LOS shown in **bold**.

Intersections

- Cause the LOS of the intersections to degrade from LOS A, B, or C to LOS D, E, or F
- For intersections that are already operating at LOS D, E, or F without the project, increase the average delay by 5 seconds or more at an intersection.

Roadway Segments

- Cause the LOS or a roadway segment to degrade from LOS A, B, or C to LOS D, E, or F.
- For roadway segments that are already operating at LOS D, E, or F without the project, increase the vehicle to capacity (v/c) ratio by 0.02 or more on a roadway.

Freeway Merge/Diverge Segments

- Cause the LOS of the freeway mainline facility to degrade from LOS A, B, C, D, or E to LOS F, or
- Cause the LOS of a Merge/Diverge segment to decrease below that of the mainline, or
- For facilities that are already operating at LOS F without the project, result in an increase in the Measure of Effectiveness (MOE) identified for the facility type.

Bicycle Facilities

- Eliminate or adversely affect an existing bikeway facility in a way that discourages the bikeway use.
- Interfere with the implementation of a proposed bikeway.
- Result in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts.

Pedestrian Facilities

- Adversely affect the existing pedestrian facility or result in unsafe conditions for pedestrians, including unsafe pedestrian/bicycle or pedestrian/motor vehicle conflicts.

Transit Facilities

- Cause the project-generated ridership, when added to the existing or future ridership, to exceed existing and/or planned system capacity. Capacity is defined as the total number of passengers the system of buses and light rail vehicles can carry during the peak hours of operation.
- Adversely affect the transit system operations or facilities in a way that discourages ridership (e.g., removes shelter, reduces park and ride).

Parking

- Result in parking demand that exceeds the available or planned parking supply.

Environmental Analysis

In order to determine impacts for each resource, a level of significance is determined and reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant impacts to a less-than-significant level, the impacts are classified as "significant and unavoidable effects (SU)." For this section, TR refers to Transportation.

Strategic Plan Area – Year 2025

TR-1. Development that could occur within the Strategic Plan area would have a less-than-significant impact on study intersections in the Swanston TVSP project area. (LTS)

Trips projected for development that could occur within the Strategic Plan area (see Table 6.11-11) were added to Baseline Conditions, and the intersection LOS was derived using the same methodology to estimate existing intersection operations. As indicated in Table 6.11-8, the study intersections under Baseline Conditions operate from LOS A to LOS F during the AM and PM peak-hours. None of the other study intersections that operate at LOS C or better would deteriorate to unacceptable levels, and none of the other study intersections that

Table 6.11-11
Baseline and Baseline Plus Project (Strategic Plan) Intersection Levels of Service

#	Intersection	Traffic Control	AM Peak-Hour				PM Peak-Hour			
			Baseline		Baseline Plus Project		Baseline		Baseline Plus Project	
			Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS
1	El Camino Avenue at Del Paso Boulevard	Signal	27.1	C	26.5	C	33.5	C	33.3	C
2	El Camino Avenue at Evergreen Street	Signal	22.7	C	22.6	C	48.3	D	43.6	D
3	El Camino Avenue at Lexington Street	Signal	7.4	A	7.4	A	8.2	A	8.2	A
4	El Camino Avenue at Van Ness Street	Signal	12.3	B	12.7	B	14.8	B	14.6	B
5	Arden Way at Del Paso Boulevard	Signal	68.1	E	68.5	E	105.3	F	103.6	F
6	Arden Way at Royal Oaks Drive/Beaumont Street	Signal	12.1	B	12.0	B	12.4	B	12.4	B
7	Arden Way at Evergreen Street	Signal	16.8	B	19.5	B	17.6	B	14.3	B
8	Arden Way at Harvard Street	Signal	32.5	C	32.9	C	41.6	D	41.1	D
9	Arden Way at Business 80 WB Off-Ramp	Signal	17.0	B	16.8	B	9.8	A	10.2	B
10	Arden Way at Business 80 EB On-Ramp	Signal	4.5	A	4.9	A	7.3	A	6.5	A
11	Evergreen Street at Dixieanne Avenue	AWSC	9.4	A	9.2	A	11.9	B	11.0	B
12	Evergreen Street at Calvados Avenue	TWSC[a]	1.4/12.6	A/B	1.4/12.4	A/B	2.0/12.8	A/B	2.1/14.3	A/B
13	Auburn Boulevard/Van Ness Street at Frienza Avenue	TWSC	2.1/15.1	B/C	2.1/15.2	A/C	46.3/116.0	E/F	43.9/109.8	E/F

Source: Kimley-Horn and Associates, 2007.

Notes:

No intersection would be significantly affected by the addition of trips from development in the Strategic Plan area.

a. Average intersection control delay/worst minor approach (worst minor movement approach direction)

currently operate at unacceptable levels (LOS D, E, or F) would experience an increase in delay greater than 5 seconds. The traffic for this scenario is presented in Figure 6.11-6, and worksheets for this scenario are presented in Appendix E. Since development within the Strategic Plan area would not cause the LOS of the intersections to degrade from LOS A, B, or C to LOS D, E, or F, the impact of development within the Strategic Plan area on intersections would be less than significant.

TR-2. Development that could occur within the Strategic Plan area would have a less-than-significant effect on study roadway segments in the Swanston TVSP project area. (LTS)

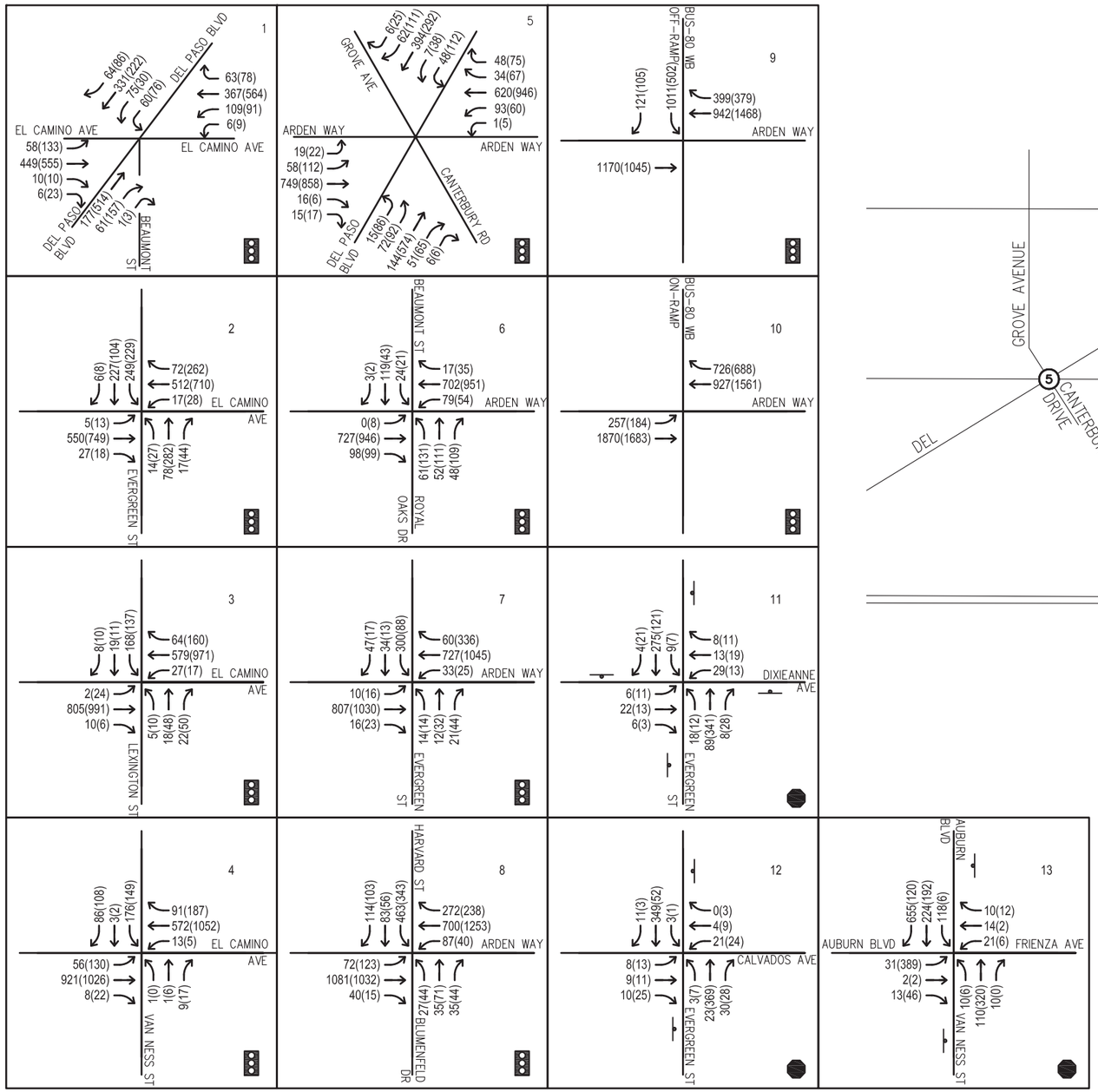
Table 6.11-12 presents the Baseline plus proposed Swanston TVSP project peak-hour operating conditions for the study roadway segments. As indicated in Table 6.11-9, the study roadway segments under Baseline Conditions operate from LOS A to LOS D during the AM and PM peak-hours. The same three roadway segments projected to operate at LOS D under Baseline Conditions would operate at LOS D with Strategic Plan traffic volumes.

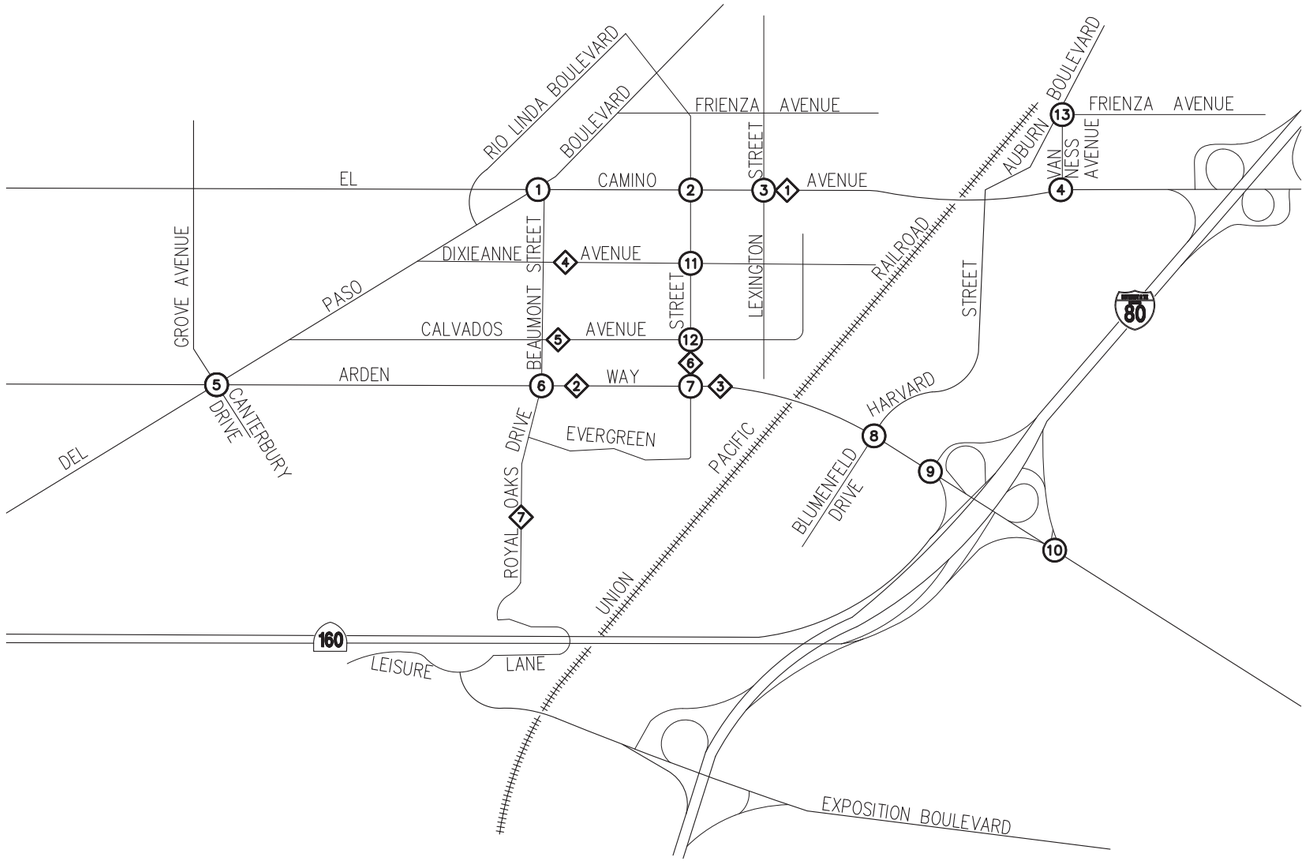
The addition of the traffic that could occur as a result of development within the Strategic Plan area is projected to result in reduced volumes on the roadway segments, as indicated in Table 6.11-12, because the proposed new uses would generate fewer auto trips than the existing land uses they would replace. The resulting traffic volumes from potential development within the Strategic Plan area would not cause an increase in v/c of 0.02 or greater on the roadway segments, and the impact of development within the Strategic Plan area to roadway segments would be less than significant.

TR-3. Development that could occur within the Strategic Plan area would not adversely affect the Business-80 ramps. (LTS)

Business-80 freeway ramp junction levels of service with the addition of Strategic Plan traffic are presented in Table 6.11-13. As shown, many of the ramps to Business-80 would operate at unacceptable levels in the AM and PM peak hour. Analysis worksheets for this scenario are presented in Appendix E.

While a number of ramps would operate at LOS F, an unacceptable level according to Caltrans, the volumes would not change sufficiently from Baseline Conditions to affect operations. Thus, in the AM and PM peak hours, impacts to the Business-80 ramps would also be less than significant.





LEGEND:

XX	AM PEAK-HOUR TRAFFIC VOLUME
(XX)	PM PEAK-HOUR TRAFFIC VOLUME
	SIGNALIZED INTERSECTION
	UN-SIGNALIZED INTERSECTION
	STOP SIGN
(1)	STUDY INTERSECTIONS
◇1	STUDY ROADWAY SEGMENT

SEGMENT	DAILY VOLUME
◇1	26,049
◇2	24,971
◇3	24,567
◇4	1,695
◇5	971
◇6	5,231
◇7	6,302

NORTH
NOT TO SCALE

***Source*:** Kimley-Horn and Associates, Inc., 2007.

FIGURE **6.11-6**
Baseline Plus Proposed Traffic Volumes

Table 6.11-12
Baseline and Baseline Plus Project (Strategic Plan) Roadway Segment Levels of Service

Location	# of Lanes	Baseline		Baseline Plus Project	
		ADT (veh/day)	LOS	ADT (veh/day)	LOS
El Camino Avenue east of Lexington Street	4	26,183	D	26,049	D
Arden Way west of Royal Oaks Drive/Beaumont Street	4	25,275	D	24,971	D
Arden Way west of Evergreen Street	4	25,126	D	24,567	D
Dixieanne Avenue east of Beaumont Street	2	1,952	A	1,695	A
Calvados Avenue east of Beaumont Street	2	971	A	971	A
Evergreen Street north of Arden Way	2	6,123	A	5,231	A
Royal Oaks Drive south of Arden Way	2	6,510	A	6,302	A

Source: Kimley-Horn and Associates, 2007.

Note

No roadway segment would be significantly affected by the addition of trips from development in the Strategic Plan area.

Table 6.11-13
Baseline and Baseline Plus Project (Strategic Plan) Ramp Junction Levels of Service

Location	Junction Type	AM Peak-Hour						PM Peak-Hour					
		Baseline			Baseline Plus Project			Baseline			Baseline Plus Project		
		Total Volume	Density (pc/mi/ln)	LOS	Total Volume	Density	LOS	Total Volume	Density (pc/mi/ln)	LOS	Total Volume	Density	LOS
EB El Camino Avenue to NB Bus-80 (loop ramp)	Merge	120	18.3	B	120	18.4	B	158	31.9	F	158	31.8	F
EB El Camino Avenue to SB Bus-80 (slip ramp)	Merge	337	35.3	F	337	35.3	F	451	22.1	C	451	22.1	C
EB/WB Arden Way to NB Bus-80 (slip ramp)	Merge	630	22.1	C	639	22.1	C	838	35.0	F	813	35.1	F
EB/WB Arden Way to SB Bus-80 (loop ramp)	Merge	834	85.4	F	850	85.5	F	1145	47.2	F	1129	47.1	F
WB Arden Way to SB SR-160 (loop ramp)	Merge	359	27.2	C	359	27.2	C	192	15.8	B	192	15.8	B
NB Bus-80 to El Camino Avenue	Diverge	915	12.2	B	915	12.2	B	1090	25.3	F	1090	25.3	F
SB Bus-80 to El Camino Avenue	Diverge	269	42.9	F	269	42.8	F	359	27.2	C	359	27.2	C
NB Bus-80 to Arden Way	Diverge	711	22.5	C	755	22.4	C	1016	38.8	F	1010	38.8	F
SB Bus-80 to Arden Way	Diverge	729	46.8	F	713	46.6	F	832	31.5	D	826	31.4	D
NB SR-160 to Arden Way	Diverge	528	12.6	B	528	12.6	B	1889	37.8	F	1889	37.8	F

Source: Kimley-Horn and Associates, 2007.

Note: No ramps would be significantly affected by the addition of trips from development in the Strategic Plan area.

TR-4. Development that could occur within the Strategic Plan area would expand bicycle access within the Swanston TVSP project area. As a result, proposed improvements within the Strategic Plan area would be expected to have beneficial effects on bicycle circulation. (B)

One objective of the proposed Swanston TVSP project is to encourage bicycle, pedestrian, and transit travel modes. As a result, the proposed Swanston TVSP project, especially development that could occur within the Strategic Plan area, would not eliminate or adversely affect existing bicycle facilities in the immediate vicinity of the Swanston TVSP project area, or interfere with planned bikeways as identified in the 2010 Sacramento City and County Bikeway Master Plan. Rather, the proposed Swanston TVSP project envisions a number of new bicycle facilities where none currently exist (see Figure 6.11-7).

The Pedestrian Friendly Street Standards require placement of bike lanes and separated sidewalks on collector and arterial streets. However, existing buildings and rights-of-way do not permit both separated sidewalks and on-street bicycle lanes. Additionally, Arden Way is an arterial street, and the bike lanes are not proposed on that roadway due to right-of-way constraints. Nevertheless, the bicycle and pedestrian facilities that are proposed within the Strategic Plan area would link activity centers within and around the vicinity of the proposed Swanston TVSP project. Furthermore, the proposed Swanston TVSP project is not anticipated to result in unsafe conditions for bicyclists, since the facilities are proposed to be constructed in accordance with City design standards. As such, bicycle facility improvements associated with development that could occur within the Strategic Plan area are considered to be less than significant. In fact, given the expansion and promotion of bicycle connections and opportunities, the proposed bicycle facility improvements could be considered to have a beneficial effect on this non-motorized mode of travel.

TR-5. Development that could occur within the Strategic Plan area would improve pedestrian facilities throughout the Swanston TVSP project area. As a result, the proposed improvements within the Strategic Plan area would be expected to have a beneficial effect on pedestrian circulation and accessibility. (B)

The proposed Swanston TVSP project is not anticipated to adversely affect existing pedestrian facilities or result in unsafe conditions for pedestrians. By contrast, the proposed Swanston TVSP project, especially development that could occur within the Strategic Plan area, calls for the addition of curbs, gutters, and sidewalks, thus enhancing pedestrian facilities. As with the bicycle facilities described above in Impact TR-4, development within the Strategic Plan area would improve pedestrian facilities (see Figure 6.11-7), and impacts to pedestrian facilities would be less than significant. Given the expansion and promotion of pedestrian connections and opportunities, pedestrian facility improvements associated with development within the Strategic Plan area could be considered to have a beneficial effect on this non-motorized mode of travel.

***Source*:** MIG, 2007.

FIGURE **6.11-7**

Pedestrian and Bicycle Circulation

TR-6. Development that could occur within the Strategic Plan area would increase the potential ridership for bus and LRT service. The increased demand on Sacramento Regional Transit services would be less than significant. (LTS)

Data from Sacramento Regional Transit indicates bus lines in the vicinity of the Swanston TVSP project area run at less than half of capacity during peak times. In addition, based on trip generation estimates approved by City staff, there would be a nominal increase in riders of the transit system. Currently, LRT service operates at four trips per hour at the Swanston and Royal Oaks Light Rail Stations. Future plans for the Swanston Light Rail Station include adding three additional trips per peak hour period to account for future increased ridership. The latest light rail capacity model projects the addition of three trips per peak time period would be needed by January 2012.[20] As a result, the impact of development that could occur within the Strategic Plan area on Sacramento Regional Transit operations is less than significant.

TR-7. Development that could occur within the Strategic Plan area would not be expected to result in a parking impact, since existing parking standards for the proposed uses would remain in effect. (LTS)

The proposed Swanston Station Specific Plan includes policies to guide development of parking for land uses within the Swanston TVSP project area. Specifically, the Design Guidelines listed in the proposed Swanston Station recommend the following:

- Ensure all surface parking in new developments is located behind or to the side of residential, commercial, and mixed-use structures.
- Explore reducing commercial parking requirements if parking spaces are provided in lots that are shared with other buildings, especially if the building uses have different peak-demand time periods.
- Explore the option of using existing parking garages as shared parking facilities for transit riders.
- Encourage the development of parking structures east of the UPRR tracks to provide parking spaces for transit riders and new commercial and mixed-use buildings. Articulate parking structures to minimize the presence of blank walls and large entries.
- Explore the possibility for a portion of the parking requirements of individual projects to be satisfied by on-street parking.
- Provide opportunities for developers to un-bundle parking to allow residents to choose whether or not they rent and/or own their own parking space.

[20] Greta Vohlers, Sacramento Regional Transit, Email to Kimley-Horn and Associates, October 26, 2007.

- Explore ways to attenuate runoff from existing and planned parking lots with options such as permeable paving and swales.

These guidelines are intended to enhance the design and appearance of parking facilities within the Strategic Plan area. With respect to parking supply and demand, it is expected that entitlement requests for projects within the Strategic Plan area would be required to be consistent with the above policies, as well as other City standards concerning parking. As a result, development that could occur within the Strategic Plan area would not alter existing parking ratios for various land uses and thus impacts within the Strategic Plan area on parking are considered to be less than significant.

TR-8. Development that could occur within the proposed Strategic Plan area would not have any effect on heavy rail operation. (NI)

Development that could occur within the Strategic Plan area would not propose modifications to the heavy rail or improvements that would affect heavy rail operations. Development within the Strategic Plan area would not directly result in the need for increased freight rail service, and the proposed development is not located within close proximity to an Amtrak station. As a result, development within the Strategic Plan area would not have any foreseeable effect on heavy rail operations.

Cumulative Analysis

As a context to understanding the potential cumulative impacts of the proposed Swanston TVSP project in combination with other projected development, this section describes traffic conditions expected in the Year 2025 conditions, at the time the Strategic Plan area is expected to have developed. Output from the SACMET regional travel demand model were obtained[21] and used to determine Year 2025 conditions. The SACMET model output includes Base Year 2005 conditions and Year 2035 traffic conditions. To determine 2025 traffic conditions, Year 2005 and forecasted Year 2035 traffic volumes were used to derive annual growth rates for various roadway segments within the study area. These annual growth rates were then applied to Baseline Conditions traffic volumes to establish Cumulative (2025) model conditions traffic volumes.

For the purposes of this EIR, land uses outside of the Swanston TVSP project area are assumed to develop to Year 2025 in accordance with the existing City General Plan. Within the Swanston TVSP project area, the only growth forecast is the development associated with development that could occur within the Strategic Plan area. Since the market assessment anticipated no other background growth in the Swanston TVSP project area, No Project conditions for the cumulative scenario assume the existing conditions in the Swanston TVSP project area. Because the SACMET model assumes that the Swanston TVSP project area would grow in accordance with the General Plan, modifications to the model land use database were necessary. First, trips for General Plan land use designations within the

[21] Raju Penmetsa, Sacramento Area Council of Governments, email to Kimley-Horn and Associates, October 16, 2007.

Swanston TVSP project area were deducted from the study intersections and roadway segments. Second, trips for the existing land uses within the Swanston TVSP project were added to the facilities to establish Cumulative (2025) No Project Conditions.

TR-9 Development that could occur within the Strategic Plan area, in combination with other growth in the plan area vicinity, would have a less-than-significant cumulative intersection LOS impact. (LTS)

Table 6.11-14 presents the Cumulative No Project peak-hour operating conditions for the study intersections. The resulting peak-hour volumes are presented in Figure 6.11-8. Under Cumulative No Project Conditions, seven intersections are projected to operate at unacceptable LOS: El Camino/Del Paso, El Camino/Evergreen, Arden Way/Del Paso, Arden Way/Royal Oaks, Arden Way/Harvard, Arden Way/Business 80 westbound off-ramp, and Auburn/Van Ness.

Under Cumulative with Project (Strategic Plan) Conditions, six intersections would operate at unacceptable levels; the one intersection projected to improve is Arden Way/Business-80 westbound off-ramp. This improvement occurs because the type of development that could occur within the Strategic Plan area (transit oriented, higher density, mixed use) enables higher intensity development to generate the same number, or fewer auto vehicle trips per day than a traditional suburban, low density, auto-oriented development pattern. Although development that could occur within the Strategic Plan area may result in more person trips per day, it would generate fewer auto vehicle trips than the existing uses, which are assumed to remain in place under the Cumulative No Project Conditions. Moreover, in the future, cumulative conditions with development that could occur within the Strategic Plan area would improve relative to the Cumulative No Project Conditions at all intersections except Arden Way/Harvard, which would experience slightly greater delays. The resulting peak-hour volumes are those presented in Figure 6.11-9, contained under the discussion of development within the Strategic Plan area.

TR-10. Development that could occur within the Strategic Plan area, in combination with other growth in the plan area vicinity, would have a less-than-significant cumulative roadway segment LOS impact. (LTS)

Table 6.11-15 presents the Cumulative No Project peak-hour operating conditions for the study roadway segments. Under Cumulative No Project Conditions for development that could occur within the Strategic Plan area, the SACMET model shows four roadway segments would operate at an unacceptable LOS E: El Camino east of Lexington, Arden Way/Del Paso, Arden Way west of Royal Oaks, Arden Way west of Evergreen, and Royal Oaks south of Arden Way.

Table 6.11-14
Cumulative and Cumulative Plus Project (Strategic Plan) Intersection Levels of Service

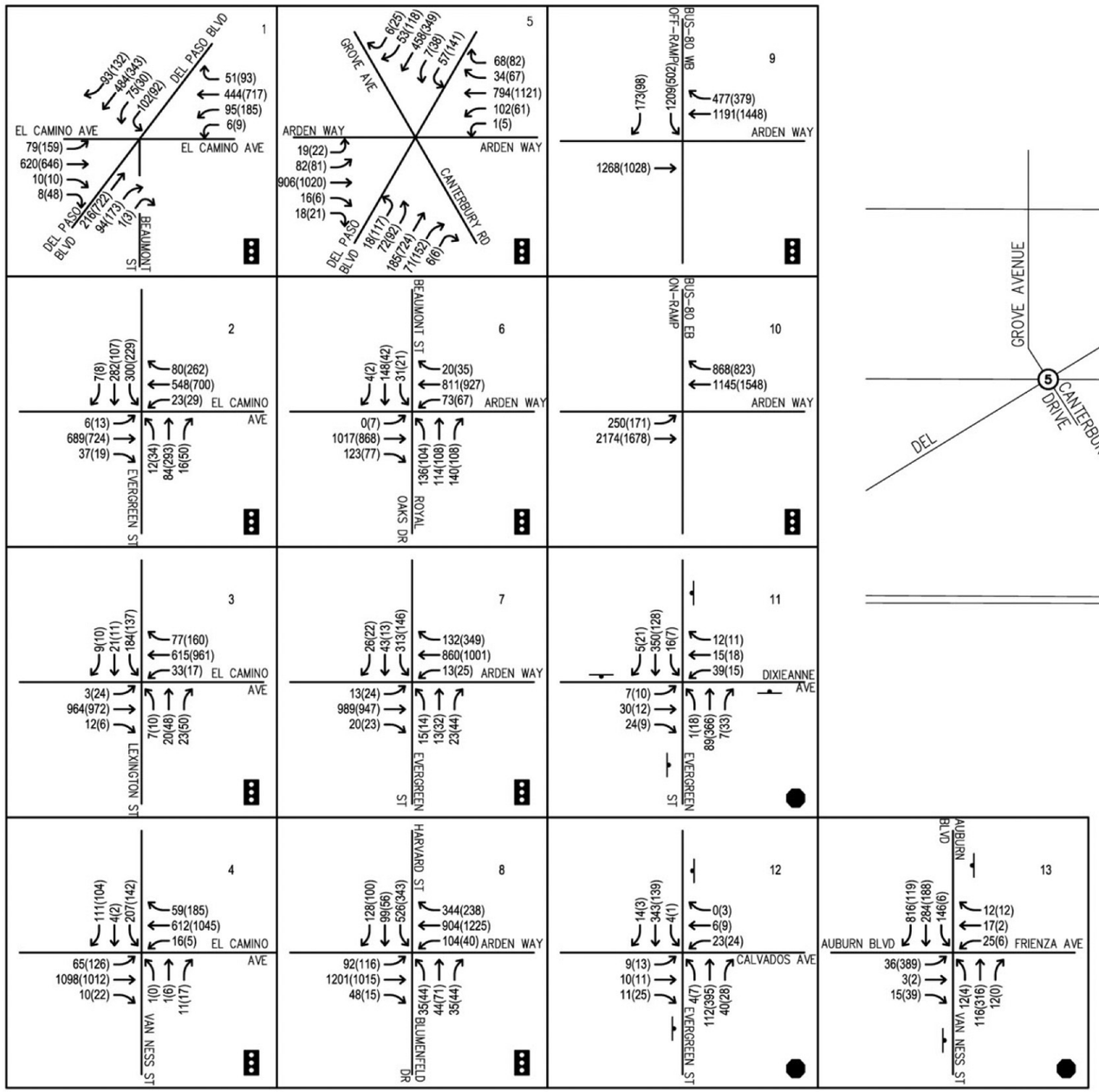
#	Intersection	Traffic Control	AM Peak-Hour				PM Peak-Hour			
			Cumulative		Cumulative Plus Project		Cumulative		Cumulative Plus Project	
			Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS
1	El Camino Avenue at Del Paso Boulevard	Signal	31.9	C	30.1	C	48.9	D	35.9	D
2	El Camino Avenue at Evergreen Street	Signal	26.3	C	25.3	C	71.8	E	61.3	E
3	El Camino Avenue at Lexington Street	Signal	7.5	A	7.5	A	9.1	A	9.0	A
4	El Camino Avenue at Van Ness Street	Signal	13.0	B	13.0	B	11.9	B	11.0	B
5	Arden Way at Del Paso Boulevard	Signal	84.1	F	84.7	F	174.4	F	167.0	F
6	Arden Way at Royal Oaks Drive/Beaumont Street	Signal	20.3	C	18.7	B	40.7	D	37.8	D
7	Arden Way at Evergreen Street	Signal	20.5	C	22.0	C	16.5	B	15.3	B
8	Arden Way at Harvard Street	Signal	37.0	D	38.1	D	42.0	D	41.1	D
9	Arden Way at Business 80 WB Off-Ramp	Signal	29.2	C	29.4	C	49.1	D	28.2	C
10	Arden Way at Business 80 EB On-Ramp	Signal	5.6	A	5.8	A	8.9	A	8.5	A
11	Evergreen Street at Dixieanne Avenue	AWSC	10.4	B	9.7	A	18.0	C	13.1	B
12	Evergreen Street at Calvados Avenue	TWSC[a]	1.5/13.8	A/B	1.5/14.0	A/B	2.2/17.1	A/C	2.3/14.5	A/B
13	Auburn Boulevard/Van Ness Street at Frienza Avenue	TWSC	2.4/18.8	A/C	2.4/18.7	A/C	155.2/403.8	F/F	142.7/369.5	F/F

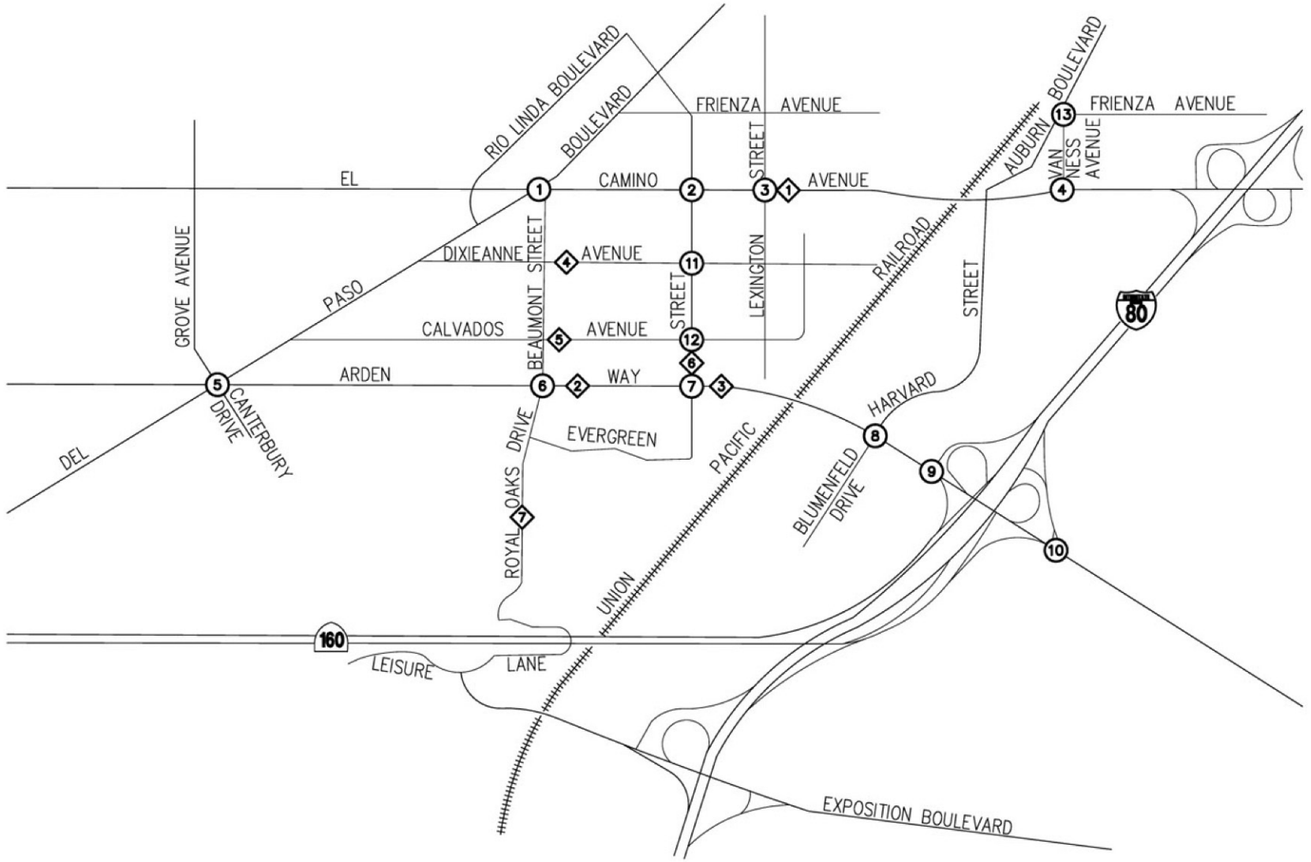
Source: Kimley-Horn and Associates, 2007.

Notes:

No intersection would be significantly affected by the addition of trips from development in the Strategic Plan area plus other development anticipated by the General Plan.

a. Average intersection control delay/worst minor approach (worst minor movement approach direction).





LEGEND:

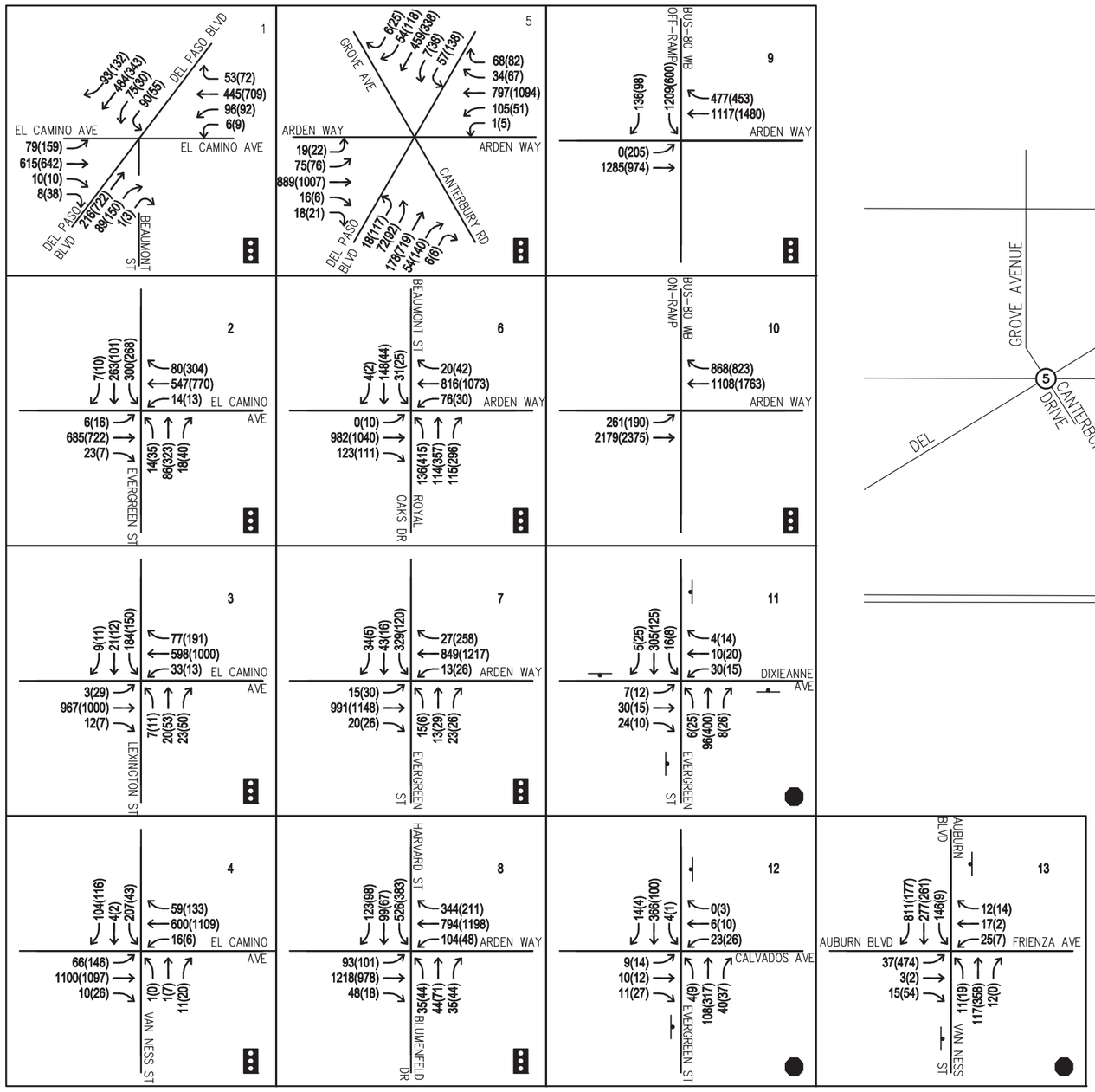
XX	AM PEAK-HOUR TRAFFIC VOLUME
(XX)	PM PEAK-HOUR TRAFFIC VOLUME
	SIGNALIZED INTERSECTION
	UN-SIGNALIZED INTERSECTION
	STOP SIGN
①	STUDY INTERSECTIONS
◇1	STUDY ROADWAY SEGMENT

SEGMENT	DAILY VOLUME
◇1	27,337
◇2	28,668
◇3	28,492
◇4	2,532
◇5	1,085
◇6	6,384
◇7	13,619

NORTH
NOT TO SCALE

Source: Kimley-Horn and Associates, Inc., 2008.

FIGURE **6.11-8**
Cumulative No Project Traffic Volumes



LEGEND:

XX	AM PEAK-HOUR TRAFFIC VOLUME
(XX)	PM PEAK-HOUR TRAFFIC VOLUME
	SIGNALIZED INTERSECTION
	UN-SIGNALIZED INTERSECTION
	STOP SIGN
(1)	STUDY INTERSECTIONS
◇1	STUDY ROADWAY SEGMENT

SEGMENT	DAILY VOLUME
◇1	26,922
◇2	27,943
◇3	27,362
◇4	2,296
◇5	1,085
◇6	5,051
◇7	13,411

NORTH
NOT TO SCALE

***Source*:** Kimley-Horn and Associates, Inc., 2007.

FIGURE **6.11-9**

Cumulative Plus Project Traffic Volumes

Table 6.11-15
Cumulative and Cumulative Plus Project (Strategic Plan) Roadway Segment Levels of Service

Location	# of Lanes	Cumulative		Cumulative plus Project	
		ADT (veh/day)	LOS	ADT (veh/day)	LOS
El Camino Avenue east of Lexington Street	4	27,337	E	26,922	D
Arden Way west of Royal Oaks Drive/Beaumont Street	4	28,668	E	27,943	E
Arden Way west of Evergreen Street	4	28,492	E	27,362	E
Dixieanne Avenue east of Beaumont Street	2	2,532	A	2,296	A
Calvados Avenue east of Beaumont Street	2	1,085	A	1,085	A
Evergreen Street north of Arden Way	2	6,384	A	5,051	A
Royal Oaks Drive south of Arden Way	2	13,619	E	13,411	D

Source: Kimley-Horn and Associates, 2007.

Note:

No roadway segments would be significantly affected by the addition of trips from development in the Strategic Plan area plus other development anticipated by the General Plan.

Under Cumulative with Project (Strategic Plan) Conditions, the same four segments would have unacceptable LOS; however, the predicted roadway volumes would be lower with development that could occur within the Strategic Plan area, than under Cumulative No Project Conditions. In fact, two segments that would operate at LOS E under Cumulative No Project Conditions would improve to LOS D. The reduction in volumes would occur because the proposed uses within the Strategic Plan area have lower vehicle trip generation characteristics than the existing uses they replace, and which are included as part of the Cumulative No Project Conditions. As a result, the cumulative impacts to roadway segments in Year 2025 would be less than significant.

TR-11. Development that could within the Strategic Plan area, in combination with other growth in the plan area vicinity, would have a less-than-significant cumulative impact on freeway ramps. (LTS)

Table 6.11-16 presents the Cumulative No Project peak-hour operating conditions for the study freeway ramps. Under Cumulative No Project Conditions, nine out of the ten freeway ramps are projected to operate at an unacceptable LOS F. (Analysis worksheets for this scenario are presented in Appendix E.)

The Strategic Plan area analysis shows that development that could occur within this area would not adversely affect the freeway ramp junction levels of service. The Cumulative Plus Project (Strategic Plan) vehicle volumes are lower than the Cumulative No Project volumes at every studied ramp, in both the AM and PM peak hours. Development within the Strategic Plan area would, therefore, be considered to contribute no impact to the cumulative impacts.

Under Cumulative with Project (Strategic Plan) Conditions (see Table 6.11-16), the same freeway ramps would have unacceptable LOS; the predicted lane density would be about the same as under Cumulative No Project Conditions. (Analysis worksheets for this scenario are presented in Appendix E.) As a result, the cumulative impacts to roadway segments with the Strategic Plan in Year 2025 would be less than significant.

TR-12. Development that could occur within the Strategic Plan area, in combination with other growth in the plan area vicinity, would not adversely affect pedestrian, bicycle, or transit circulation. (LTS)

The Cumulative with Project (Strategic Plan) Conditions would essentially be the same as that of the Baseline with Project (Strategic Plan) Conditions. In other words, the development that could occur within the Strategic Plan area would not adversely affect bicycle, pedestrian, or transit facilities or inhibit implementation of a planned bikeway, with the exception of bike lanes on Arden Way. Arden Way is proposed to include separated sidewalks, but there is not adequate right-of-way to also accommodate bike lanes. Rather than create cumulative impacts,

Table 6.11-16
Cumulative and Cumulative Plus Project (Strategic Plan) Ramp Junction Levels of Service

Location	Junction Type	AM Peak-Hour						PM Peak-Hour					
		Cumulative			Cumulative plus Project			Cumulative			Cumulative plus Project		
		Total Volume	Density (pc/mi/ln)	LOS	Total Volume	Density	LOS	Total Volume	Density (pc/mi/ln)	LOS	Total Volume	Density	LOS
EB El Camino Avenue to NB Bus-80 (loop ramp)	Merge	129	20.7	C	128	20.7	C	140	34.8	F	138	35.4	F
EB El Camino Avenue to SB Bus-80 (slip ramp)	Merge	331	36.5	F	330	36.6	F	404	23.4	C	399	23.5	C
EB/WB Arden Way to NB Bus-80 (slip ramp)	Merge	711	24.4	C	690	24.6	C	753	38.0	F	693	39.0	F
EB/WB Arden Way to SB Bus-80 (loop ramp)	Merge	865	89.1	F	839	89.2	F	1065	50.8	F	980	51.0	F
WB Arden Way to SB SR-160 (loop ramp)	Merge	380	28.6	D	368	28.5	D	198	17.5	B	182	17.4	B
NB Bus-80 to El Camino Avenue	Diverge	980	14.8	B	975	14.8	B	960	26.5	F	949	26.8	F
SB Bus-80 to El Camino Avenue	Diverge	264	44.4	F	263	44.4	F	322	28.6	D	318	28.6	D
NB Bus-80 to Arden Way	Diverge	861	26.0	C	861	26.0	C	936	39.9	F	861	39.5	F
SB Bus-80 to Arden Way	Diverge	747	48.4	F	715	48.2	F	777	32.6	D	715	32.4	D
NB SR-160 to Arden Way	Diverge	682	15.4	B	663	15.4	B	1953	43.1	F	1797	43.1	F

Source: Kimley-Horn and Associates, 2007.

Notes:

No ramps would be significantly affected by the addition of trips from development in the Strategic Plan area plus other development anticipated by the General Plan.

the circulation improvements anticipated during development within the Strategic Plan area would improve bicycle and pedestrian facilities in the Swanston TVSP project area and connectivity and accessibility to the Sacramento Regional Transit bus and light rail systems. As a result, development within the Strategic Plan would not contribute to cumulative impacts related to pedestrian or bicycle circulation, and would result in less-than-significant cumulative transit impacts.

Long-Term Plan Area - Buildout

The proposed Swanston Station Specific Plan contains land use designations, design, open space, and circulation recommendations for buildout of the Swanston TVSP project area. However, there is no clear timetable for when land use changes in the Long-Term Plan area might occur, and could be used as input for an analysis of traffic patterns, circulation effects on other modes of transportation, or parking.

Given the uncertainty associated with the ultimate shape, form, intensity, and timing (after 2025) that development within the Long-Term Plan area will take, as well as the inaccuracies associated with the estimation of traffic impacts for a scenario that extends 25 years beyond the currently available analytical tools (SACOG's regional model), resulted in the adoption of a much more qualitative analysis approach being conducted for the Long-Term Plan. (For the same reasons, it is not useful to predict future cumulative conditions with the Long-Term Plan.) The methodological approach for development that could occur under the Long-Term Plan area is to describe the land use assumptions that are being made for buildout, identify development and transportation trends that are most likely to occur over the next 40 to 50 years when buildout of the proposed Swanston TVSP project would be anticipated, and to present conclusions and discussion of impacts in "relative" terms, i.e., transportation impacts would be higher or lower than one of the other scenarios (such as the existing General Plan) that allowed analysis with a higher degree of confidence and precision.

One of the assumptions about development that could occur within the Long-Term Plan area is that the revised zoning districts identified for the Swanston TVSP project area would, over time, replace land uses permitted under the existing zoning districts. Using this assumption, estimates of the trip generation for the full development, or buildout, of the Swanston TVSP project area can be compared to the trip generation for the existing zoning, to determine the relative impact of the proposed Swanston TVSP project.

Based on this comparison, the total proposed Swanston TVSP project, which includes development within the Strategic Plan and Long-Term Plan areas, would generate about 7,300 fewer daily and about 1,300 fewer PM peak-hour vehicle trips than development under existing zoning. During the AM peak-hour, the proposed Swanston TVSP project may result in about 30 more trips than the existing zoning. As a result, the proposed Swanston TVSP project would have less impact than the existing zoning on roadway segments and during the PM peak hour intersection impacts would be less. During the AM peak-hour, the proposed Swanston TVSP project may impact critical intersections, like Arden Way at Del Paso Boulevard, more than development under the existing zoning.

TR-13. Development that could occur within the Long-Term Plan area would have a potentially significant impact on study intersections in the Swanston TVSP project area. (PS)

The estimation of intersection impacts and the level of service depend on detailed information or assumptions about how traffic approaching an intersection will behave, in terms of proceeding straight through the intersection, or turning left or right. This behavior, in turn, is a function of the type of trip (e.g., work related or shopping related, etc.) and the likely path that motorists will take between their starting point and their destination. In the case of the full buildout of the proposed Swanston TVSP project (which would occur at the time of full implementation of the Long-Term Plan), with its indeterminate timeframe, making such assumptions about travel through intersections approximately 50 years in the future becomes highly speculative.

Impact TR-1 for the Strategic Plan area shows one intersection at an unacceptable LOS for the AM peak and three such intersections during the PM peak. All other study intersections would operate at acceptable levels at LOS A or LOS B. In the future under buildout, it is highly unpredictable how traffic operations would be, not only because of the considerations identified above, but also because a number of existing uses that contribute to the current LOS would be replaced by new uses that could occur within the Long-Term Plan area.

In general, it is anticipated that the overall number of vehicle trips generated within the Swanston TVSP project area, including the Long-Term Plan area, would diminish over time, compared to the continued development under existing zoning, due to the more transit-oriented development pattern of the proposed Swanston TVSP project. The total number of daily trips is projected to decrease by 7,300, compared to trips under existing zoning.

The vision for the study area, over the 50 year planning horizon, is to transition from a typical low-density, auto oriented suburb to something more akin to the development surrounding many BART stations, such as in Walnut Creek, or the mid-town Sacramento area. The area around the light rail station would become more developed, with higher density development, and more of a mixture of land uses in close proximity to each other. The components of the transit-oriented development, the individual pieces that would make it work, would also come with time. These pieces include improved sidewalks, bike infrastructure, amenities such as street lighting and shade trees, and shower facilities in offices. Gradually, it would become more feasible to use alternative modes, such as walking, biking, and public transit, instead of the automobile for every trip. There would be more people living and working in the same amount of space. At some point it would become easier to walk across the street for lunch, than to get in a car and drive somewhere. At that point, it is estimated that the majority of trips made by those living and working within the Swanston TVSP project area would be by alternative modes. Although the level of development may increase with time, the number of auto trips per unit of development, whether per household or per square foot of commercial development, would be significantly reduced.

By the same token, the level of through auto traffic on the surrounding roadway network, especially El Camino Avenue, Arden Way, and Del Paso Boulevard, is expected to continue to rise. However, the study area's contribution to traffic levels on these roadways and their intersections is expected to remain steady, or decline.

It is recognized that the future baseline conditions against which the actual impacts of development that could occur within the Long-Term Plan area may be different than the conditions and patterns that exist as forecast throughout the Strategic Plan area. Accordingly, significant intersection impacts may occur.

MITIGATION MEASURE. The City through its development and environmental review processes will continue to evaluate the conformance of future development applications with the proposed Swanston TVSP project, identify the potential impacts stemming from the proposed development, and impose fees, mitigation measures, or other conditions of project approval, as necessary, to reduce the traffic impacts of future development. (LTS)

TR-14. Although traffic on the study roadway segments within the Swanston TVSP project area is projected to increase as a result of the development that could occur within the Long-Term Plan area, this development would have a less-than-significant effect on these study roadway segments. (LTS)

With implementation of development that could occur within the Strategic Plan area, future development that could occur within the Long-Term Plan area would be more transit-oriented, include higher densities, and allow for a mixture of interdependent land uses (residential and retail, office and retail, residential and office) in close proximity to one another.

Future development that could occur within the Long-Term Plan area would also be a higher intensity of development than under existing zoning. The number of people, households, and jobs within the Long-Term Plan area would increase significantly (see Chapter 5, Population and Housing). However, the Swanston TVSP project area would increasingly become more like the transit-oriented development around many existing suburban BART or Santa Clara Valley Transportation Authority stations. As the level of development increases, and the transit, bicycle, and pedestrian infrastructure improvements identified in the proposed Swanston TVSP project are implemented, there should be an accompanying modal shift away from the automobile.

Even with more people, in the same amount of space (i.e., the Swanston TVSP project area), automobile trips would not increase at the same rate as population growth. As the Swanston TVSP project area, reaches buildout, a much higher percentage of the trips made by residents and employees would be made by alternative modes, such as light rail, bus, bicycling, and walking. Therefore, although the traffic will increase on the roadway segments, due in part to the growth in background traffic, it is not anticipated that the contribution of the proposed Swanston TVSP project would be sufficiently great to cause an adverse impact.

TR-15. Development that could occur within the Long-Term Plan area would not adversely affect the Business-80 ramps. (LTS)

As noted under the Strategic Plan area assessment, current Business-80 freeway ramp junction levels of service are largely at unacceptable levels of service (LOS). The addition of traffic within the Long-Term Plan area would not have a significant effect on these LOS. Many of the ramps to Business-80 would continue to operate at unacceptable levels in the AM and PM peak hour. However, as shown in the cumulative analysis Table 6.11-16, the number of cars on these ramps would decrease as a result of the implementation of the proposed Swanston TVSP project, and its emphasis on transit use in lieu of vehicle uses. (Analysis worksheets for this scenario are presented in Appendix E.)

While a number of ramps would operate at LOS F, an unacceptable level according to Caltrans, the volumes would not change sufficiently from Baseline Conditions to affect operations or to deteriorate the mainline LOS. Thus, in the AM and PM peak hours, impacts would also be less than significant.

TR-16. Development that could occur within the Long-Term Plan area would expand bicycle access throughout the Swanston TVSP project area. As a result, proposed improvements under the proposed Swanston TVSP project would be expected to have beneficial effects on bicycle circulation. (B)

One objective of the proposed Swanston Station Specific Plan is to encourage bicycle, pedestrian, and transit travel modes. As a result, the proposed Swanston TVSP project, especially development that could occur within the Long-Term Plan area, would not eliminate or adversely affect existing bicycle facilities in the immediate vicinity of the Swanston TVSP project area, or interfere with planned bikeways as identified in the 2010 Sacramento City and County Bikeway Master Plan. Rather, as discussed above for the Strategic Plan area under Impact TR-4, the proposed Swanston Station Specific Plan envisions a number of new bicycle facilities where none currently exist.

The Pedestrian Friendly Street Standards require placement of bike lanes and separated sidewalks on collector and arterial streets. However, existing buildings and rights-of-way do not permit both separated sidewalks and on-street bicycle lanes. Additionally, Arden Way is an arterial street, and the bike lanes are not proposed on that roadway due to right-of-way constraints. Nevertheless, the bicycle and pedestrian facilities that are proposed within the Long-Term Plan area would link activity centers within and around the vicinity of the proposed Swanston TVSP project. Furthermore, the proposed Swanston TVSP project is not anticipated to result in unsafe conditions for bicyclists, since the facilities are proposed to be constructed in accordance with City design standards. Further, the creation of bicycle and pedestrian facilities and improvements in the Swanston TVSP project area may create a "spill-over" effect, in which surrounding neighborhoods would improve their own bicycle and pedestrian facilities, thereby expanding the network of bicycle paths and comfortable pedestrian walkways. Should this occur, a broad indirect positive impact on Sacramento bicycle

circulation would result. As such, bicycle facility improvements associated with development of the Long-Term Plan area are considered to be less than significant. In fact, given the expansion and promotion of bicycle connections and opportunities, the proposed bicycle facility improvements could be considered to have a beneficial effect on this non-motorized mode of travel.

TR-17. Development that could occur within the Long-Term Plan area would improve pedestrian facilities throughout the Swanston TVSP project area. As a result, the plan would be expected to have a beneficial effect on pedestrian circulation and accessibility. (B)

The proposed Swanston TVSP project is not anticipated to adversely affect the existing pedestrian facility or result in unsafe conditions for pedestrians. By contrast, the proposed Swanston TVSP project, especially development that could occur within the Long-Term Plan area, calls for the addition of curbs, gutters, and sidewalks, thus enhancing pedestrian facilities. As with the bicycle facilities described above in Impact TR-16, and as discussed for the Strategic Plan area in Impact TR-5, the development within the Long-Term Plan area would improve pedestrian facilities so that impacts to pedestrian facilities would be less than significant. In fact, given the expansion and promotion of pedestrian connections and opportunities, pedestrian facility improvements associated with development within the Long-Term Plan area could be considered to have a beneficial effect on this non-motorized mode of travel.

TR-18. Development that could occur within the Long-Term Plan area would increase the potential ridership for bus and LRT service. The increased demand on Sacramento Regional Transit services would be less than significant. (LTS)

Data from Sacramento Regional Transit indicates bus lines in the vicinity of the Swanston TVSP project area run at less than half of capacity during peak times. In addition, based on trip generation estimates approved by City staff, there would be a nominal increase in riders of the transit system. Currently, LRT service operates at four trips per hour at the Swanston and Royal Oaks Light Rail Stations. Future plans for the Swanston Light Rail Station include adding three additional trips per peak hour period to account for future increased ridership. The latest light rail capacity model projects the addition of three trips per peak time period would be needed by January 2012.[22] As a result, the impact of development that could occur within the Long-Term Plan area on Sacramento Regional Transit operations is less than significant.

TR-19. Development that could occur within the Long-Term Plan area would not be expected to result in a parking impact, since existing parking standards for the proposed uses would remain in effect. (LTS)

[22] Greta Vohlers, Sacramento Regional Transit, Email to Kimley-Horn and Associates, October 26, 2007.

The proposed Swanston TVSP project includes policies to guide development of parking for land uses within the Swanston TVSP project area. Specifically, Design Guidelines listed in the Swanston TVSP recommend the following:

- Ensure all surface parking in new developments is located behind or to the side of residential, commercial, and mixed-use structures.
- Explore reducing commercial parking requirements if parking spaces are provided in lots that are shared with other buildings, especially if the building uses have different peak-demand time periods.
- Explore the option of using existing parking garages as shared parking facilities for transit riders.
- Encourage the development of parking structures east of the UPRR tracks to provide parking spaces for transit riders and new commercial and mixed-use buildings. Articulate parking structures to minimize the presence of blank walls and large entries.
- Explore the possibility for a portion of the parking requirements of individual projects to be satisfied by on-street parking.
- Provide opportunities for developers to un-bundle parking to allow residents to choose whether or not they rent and/or own their own parking space.
- Explore ways to attenuate runoff from existing and planned parking lots with options such as permeable paving and swales.

These guidelines are intended to enhance the design and appearance of parking facilities in the Long-Term Plan area. With respect to parking supply and demand, it is expected that entitlement requests for projects within the Long-Term Plan area would be required to be consistent with the above policies, as well as other City standards concerning parking. As a result, development that could occur within the Long-Term Plan area would not alter existing parking ratios for various land uses and thus impacts within the Long-Term Plan area on parking are considered to be less than significant.

TR-20. Development that could occur within the Long-Term Plan area would not have an effect on heavy rail operation. (NI)

As discussed for the Strategic Plan in Impact TR-8, development that could occur within the Long-Term Plan area proposes no modifications to the heavy rail or improvements that would affect heavy rail operations. Development within the Long-Term Plan area would not directly result in the need for increased freight rail service, and the proposed development is not located in close proximity to an Amtrak station. As a result, development within the Long-Term Plan area would not have any foreseeable effect on heavy rail operations.

THIS PAGE INTENTIONALLY LEFT BLANK

Chapter 7
CEQA Considerations

7.1 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 or adoption 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.

7.2 SIGNIFICANT ENVIRONMENTAL EFFECTS

Chapter 6 of this EIR provides a comprehensive identification of the environmental effects of the Swanston Station Transit Village Specific Plan (proposed Swanston TVSP project), including the level of significance both before and after mitigation, where applicable. Chapter 3, Summary, includes a list of all impacts of the project that would result from the proposed Swanston TVSP project and includes the level of significance before and after mitigation, if applicable.

7.3 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 the implementation of feasible mitigation measures. The environmental effects of the proposed Swanston TVSP project on various aspects of the environment are discussed in detail in Chapter 6 of this EIR. Significant impacts that cannot be avoided or mitigated to less than significant if the proposed Swanston TVSP project is approved are identified below.

Significant and Unavoidable Impacts – Strategic Plan Area

A substantial temporary increase in ground-borne vibration could affect nearby structures, particularly if pile-driving activities were necessary during construction in the Strategic Plan area. There are measures available to reduce ground-borne vibration effects but they may not be sufficient to achieve the City's standards.

Significant and Unavoidable Impacts – Long-Term Plan Area

Similar to the Strategic Plan, a substantial temporary increase in ground-borne vibration could affect nearby structures, particularly if pile-driving activities were necessary during construction in the Long-Term Plan area. There are measures available to reduce ground-borne vibration effects but they may not be sufficient to achieve the City's standards.

Ozone precursors (reactive organic gases and oxides of nitrogen) would be emitted by stationary and mobile sources associated with development that could occur within the Long-Term Plan area. Even though the proposed Swanston TVSP project is a transit-oriented development plan that would reduce vehicle miles traveled, the ozone precursor emissions could exceed the thresholds established by the Sacramento Metropolitan Air Quality Management District.

Cumulative Significant and Unavoidable Impacts

The development that could occur in the proposed Swanston TVSP project, in combination with other development in the Sacramento Valley Air Basin, would result in emissions of ozone precursors in excess of the thresholds by the Sacramento Metropolitan Air Quality Management District.

7.4 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; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Development that could occur in accordance with the proposed Swanston TVSP project would result in the commitment of the Swanston Station Transit Village Specific Plan area (Swanston TVSP project area) to more transit-oriented development, thereby precluding any other uses for the lifespan of the project. Restoration of the Swanston TVSP project area 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 proposed Swanston TVSP project could result in the use, transport, storage, and disposal of hazardous wastes, as described in Section 6.6, Hazards and Hazardous Materials, these activities would comply with applicable state and federal laws related to hazardous materials, which significantly reduce the likelihood and severity of accidents that could result in irreversible environmental damage. Furthermore, the types of uses envisioned by the proposed Swanston TVSP project are residential and commercial uses that do not use, handle, store, or dispose of large volumes of hazardous materials. These uses involve typical household-type hazardous materials, and are not considered acutely hazardous.

Development that could occur in accordance with the proposed Swanston TVSP project would result in the long-term commitment of resources to urban development, which is no different than current proposals under the existing General Plan. The most notable significant irreversible impacts are increased generation of pollutants, and the short-term commitment of non-renewable and/or slowly renewable natural and energy resources, such as water used during construction activities. Operations associated with future uses would also consume natural gas and electrical energy.

Resources that would be permanently and continually consumed by development that could occur in accordance with the proposed Swanston TVSP project 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 applicable building codes, planning policies, and standard conservation features would ensure that natural resources are conserved to the maximum extent possible. One of the important premises of a transit-oriented development plan is the promotion of a pedestrian friendly environment and a land use pattern that is supportive of transit accessibility and ridership. The higher intensity land use pattern promoted by the proposed Swanston TVSP project should help reduce use of fossil fuels that would otherwise be consumed by automobile trips. 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 associated with development that could occur in accordance with the proposed Swanston TVSP 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.

7.5 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.

The Swanston TVSP project area contains established land uses and supporting infrastructure (roads, water distribution, wastewater and drainage collection, and energy distribution). Development that could occur in accordance with the proposed Swanston TVSP project [I STOPPED REVIEWING HERE.] would involve the modification and/or replacement of existing infrastructure in order to support the increased land use intensity associated with the proposed Swanston TVSP project. Improved roadways and storm drainage infrastructure are proposed and raise the potential that

additional development could be accommodated; however, the focus of the improvements is on bring existing infrastructure up to current City standards, and not expanding capacity such that additional growth (beyond that projected for the Strategic Plan and Long-Term Plan areas) could be attracted into the Swanston TVSP project area.

An established transportation network exists in the Swanston TVSP project area that offers local and regional access to the project area. The existing roadways adjoining the area, including El Camino Avenue, Arden Way, and Evergreen Street, provide access to the Swanston TVSP project area. On-site circulation would be facilitated by a system of internal streets with improvements. Improvements to streets in the Swanston TVSP project area (i.e., Arden Way, El Camino Avenue, Dixieanne Avenue, and Evergreen Street) would occur in order to serve the increased population generated by the proposed Swanston TVSP project and create a transit-oriented and walkable development. These roadway improvements would facilitate improved circulation in and around the Swanston TVSP project area and could remove an obstacle for further investment and development in the Swanston TVSP project area. As noted above, the primary focus for these improvements is to install curbs and gutters and bring existing roads up to current City standards, and to accommodate pedestrian and bicycle circulation.

Water service to the Swanston TVSP project area would be provided by existing transmission mains in the project area. Existing sanitary sewer pipelines that are smaller than the City's standard 8-inch minimum would be replaced throughout the Swanston TVSP project area. Wastewater from west of the railroad tracks would be conveyed through improved pipelines to the City's sanitary sewer service, while wastewater east of the tracks would be conveyed in improved pipelines to the Sacramento Area Sewer District service area. Therefore, no new water or sewer mains other than those required to serve the development in the proposed Swanston TVSP project would be constructed. As such, the development of on-site water and sewer infrastructure to serve the proposed Swanston TVSP project would not be sized to support other development in the vicinity.

Electricity and natural gas transmission infrastructure presently exists on and in the vicinity of the Swanston TVSP project area. It is anticipated that no off-site upgrading/upsizing of existing utilities would occur within street rights-of-way immediately adjacent to the Swanston TVSP project area. On-site improvements would be designed to accommodate uses proposed within the Swanston TVSP project area and would not be sized to support other development in the vicinity or remove an obstacle to growth.

Economic Effects

In addition to the employment generated by development that could occur in accordance with the proposed Swanston TVSP 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 mixed-use portions of the proposed Swanston TVSP 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 immediate Swanston TVSP project area to include jobs created by the stream of goods and services necessary to support businesses within the proposed Swanston TVSP project. For example, when a manufacturer buys or sells products, the employment associated with those inputs or outputs are considered induced employment and these employment effects are typically experienced throughout the broader, more diverse regional economy.

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. For example, 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 Swanston TVSP project. When the server then goes out and spends money in the economy, the jobs generated by this transaction are considered induced employment.

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 General Plan and North Sacramento Community Plan, 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 within the City that would cause an increase in population and exceed General Plan projections. There have been several planned and recently approved projects within the City that include higher density residential towers and commercial high rises, which in combination with the proposed Swanston TVSP project, would exceed the current General Plan's population projections.

In addition to the growth of the City area from other development projects, the proposed Swanston TVSP project could increase the population within the City by up to 6,670 residents at buildout

(including development in both the Strategic Plan and Long-Term Plan areas). While growth in the North Sacramento area of the City is an intended consequence of the proposed Swanston TVSP project, growth induced directly and indirectly by the proposed Swanston TVSP 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 growth-induced housing demand in the greater Sacramento region could cause significant environmental effects as new residential development 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 Swanston TVSP project would contribute to direct, indirect, and induced growth in the area, it would also enhance the vitality of the Swanston TVSP project area which is a goal of the City's General Plan and the North Sacramento Community Plan.

7.6 CUMULATIVE IMPACTS

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with approval of a project. 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 6, Environmental Analysis, concludes with a cumulative impact analysis for the issue area addressed in the subsection.

To better understand the cumulative analysis that is presented in Chapter 6, the following information is presented to guide and inform the reader about how cumulative impacts are defined, when they are considered significant, and how an individual project's contribution to cumulative impacts is treated. 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 in the area outside the proposed Swanston TVSP project boundaries and includes recently approved and/or probable future projects under consideration in the City.

While the cumulative analysis takes into consideration the impacts of the project in combination with projects 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 Air Basin. The cumulative effects of PM_{10} 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 to biological and cultural resources are analyzed assuming buildout of the City of Sacramento General Plan and may consider a larger area, depending on the particular species or cultural resources being considered. Thus, for example, in addition to buildout of the City, the cumulative biological resources analysis also considers SACOG's regional buildout to recognize that habitats often extend beyond city boundaries. 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, of which the Swanston TVSP project area is a part.

The cumulative context for other technical areas, such as geology and hazards, is generally site-specific, rather than cumulative in nature, because each development site has unique geologic, soils, and hazard characteristics that would be subject to uniform site development and construction standards imposed by the City of Sacramento.

The cumulative context for aesthetics evaluates the surrounding area in the vicinity of the proposed Swanston TVSP project, while the cumulative context for light and glare considers additional development projects that could affect the same sensitive receptors as the proposed Swanston TVSP 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; the cumulative context for libraries is the Sacramento Public Library service area. Some of the services, such as libraries and parks, also analyze impacts until specific horizon dates as specified by the service's master plan.

THIS PAGE INTENTIONALLY LEFT BLANK

Chapter 8
Alternatives

8.0 INTRODUCTION

Background

The California Environmental Quality Act (Public Resources Code, Section 21000 et seq.; CEQA) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.) require that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126(d)). If a project alternative would substantially lessen the significant environmental effects of a proposed project, the lead agency should not approve the proposed project unless it determines that specific technological, economic, social, or other considerations make the project alternative infeasible (PRC Section 21002, CEQA Guidelines Section 15091(a)(3)). The EIR must also identify alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and should briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126(d)(2)). One alternative that must be analyzed is the "No Project" Alternative. The "No Project" analysis must discuss the existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved and development continued to occur in accordance with existing plans and consistent with available infrastructure and community services (CEQA Guidelines, Section 15126(d)(4)).

This EIR analyzes only one alternative, the No Project Alternative. During the planning process to arrive at the proposed Swanston Station Transit Village Specific Plan (TVSP), a number of alternatives were reviewed to provide the community with policy options regarding development in project area. Those alternatives were evaluated in background reports for potential environmental issues, as well as potential policy conflicts, implementation concerns, and ability to respond to anticipated market conditions. The alternatives development and evaluation process is described below in Section 8.2.

Prior to summarizing the alternatives formulated during the Specific Plan process, the alternatives considered but rejected are identified. These alternatives were developed in order to substantially lessen the identified significant impacts of the proposed Swanston TVSP project. The assessment in this EIR identified two significant unavoidable impacts (as documented in Chapter 6) of the proposed Swanston TVSP project: project-related and cumulative ozone precursor emissions that exceed the thresholds of the Sacramento Metropolitan Air Quality Management District (SMAQMD), and ground-borne vibration impacts if construction involves pile-driving activities adjacent to residential, commercial, or historical or potentially historical resources.

Avoidance or Substantial Reduction of the Air Emissions Impact. Ozone precursor emissions are primarily a function of the automobile trips that would be generated by the development that could occur in response to the proposed Swanston TVSP project. New development that could occur in the Swanston TVSP project area would result in about 370 pounds per day of reactive organic gases and about 190 pounds per day of nitrogen oxides, the two key ozone precursor pollutants. The SMAQMD has established a significance threshold of 65 pounds per day for each pollutant. In order to attain the significance threshold, the full development potential of the Swanston TVSP project would need to be limited to about 460 units and 90,000 square feet of commercial space. This level of development would be approximately an 80 percent reduction to the development potential identified for the Swanston TVSP project area and would not achieve the project objectives of creating a vibrant, mixed use, higher intensity community that would be supportive of transit. The resulting residential density would be less than 4 dwelling units per acre, which would be characteristic of a single family subdivision and not a higher density transit-oriented development.

CEQA does not, however, require that alternatives completely eliminate a significant and unavoidable impact; rather, CEQA Guidelines Section 15126.6(b) calls for alternatives that avoid or *substantially lessen* one or more of the significant effects. The SMAQMD's Guide to Air Quality Assessment requires that projects that exceed the emissions standards for ozone precursors prepare an Air Quality Management Plan that seeks to attain a 15 percent reduction in emissions. Assuming a 15 percent reduction would be considered a "substantial lessening" of the significant and unavoidable air quality impact of the proposed Swanston TVSP project, an alternative that reduced the development potential of the proposed Swanston TVSP project by 15 percent would be a reasonable alternative under CEQA. This reduced sized alternative would consist of about 2,200 new dwelling units and 430,000 square feet of commercial space. The resulting residential density would be about 18 dwelling units per acre, which would be similar to the recently built higher density projects in the Strategic Plan area. However, a goal of the Specific Plan is to revitalize the Swanston TVSP project area into an active, mixed use transit village, and the Specific Plan seeks to achieve this, in part, by redesignating the project area with the Residential Mixed Use and Mixed Use land use designations. Both of these land use designations specify a *minimum* residential density of 22 dwelling units per net acre. This alternative that would substantially reduce the significant air quality impacts would thus fail to achieve the City's goal of creating a transit village at the desired densities. In fact, the proposed Swanston TVSP project was formulated after extensive community workshops to attain the minimum residential density for a transit village using the proposed land use designations. As a result, this reduced size alternative was considered but rejected because it would not meet the project objectives, and would not be consistent with the lengthy community meetings and discussions that led to the proposed Swanston TVSP project.

Avoidance or Substantial Reduction of the Potential Construction Vibration Impact. This potential construction-period impact is related to the possible need to undertake pile-driving activities. The need to pile drive is a function of a site's soil conditions, the underlying soil and groundwater conditions, and the size of the building. The ground-borne vibration impacts would be temporary and

could occur with new development under any other plan alternative – even one involving substantially less development potential. Thus, crafting an alternative to substantially lessen a short-term construction impact would involve considering other construction techniques and might make sense for a specific development project, but for a project that serves as a long-term road map for revitalizing and transforming a community, such alternatives would not be appropriate.

Conclusion Regarding other Project Alternatives. In light of the discussion above, other development proposals would not substantially reduce or avoid the significant impacts described for the proposed Specific Plan.

8.2 DESCRIPTION OF ALTERNATIVES CONSIDERED

Planning Process and Formulation of Alternatives

A goal of the proposed Swanston Station Transit Village Specific Plan is to guide future transit-oriented development within the plan area and identify the needed infrastructure improvements and implementation measures to realize the vision of the plan. The following comprehensive list of specific goals for the plan area is from Chapter 2, Project Description:

- Create transit-oriented, pedestrian-friendly, mixed-use and residential development adjacent to the Sacramento Regional Transit light rail line and Swanston and Royal Oaks Light Rail Stations;
- Guide future development and revitalization within the area towards land uses that support transit ridership, and provide needed housing, employment opportunities, and neighborhood supporting retail uses;
- Develop recommendations and guidelines for design and development of land use and infrastructure development within the Swanston Station Transit Village Specific Plan area;
- Incorporate meaningful community input into every stage of the process by exchanging, sharing ideas and collaborating with interested groups, property owners, individuals, and other agencies active in the Swanston area;
- Identify the infrastructure needs, cost estimates, phasing, and implementation programs to realize the vision of the Swanston Station Transit Village Specific Plan;
- Provide transit and neighborhood and community retail near residential development to shorten or reduce the number of vehicle trips;
- Improve the pedestrian, bicycle, and automobile circulation and access of the Swanston Light Rail Station Area and vicinity;
- Incorporate urban parks, plazas and open space into the project design in a manner that provides community connectivity;

- Develop and approve the Swanston Station Transit Village Specific Plan consistent with the City of Sacramento's Smart Growth Principles, the Regional Transit Master Plan, the Transit for Livable Communities Recommendations, the SACOG Blueprint Study, the North Sacramento Redevelopment Plan, and the goals of the North Sacramento 2005-2009 Redevelopment Implementation Plan.

- Increase office and retail job opportunities in the City and the residential component that accompanies such jobs;

- Create a safe and comfortable transit village, defined by a mix of uses, responsive to current market conditions, and a bicycle and pedestrian friendly environment;

- In keeping with the City and the Sacramento region's goals to promote public transit ridership, provide higher-density infill residential development, small neighborhood-serving retail, small- to medium-scale professional office uses, and public open space – all within convenient walking distances of the light rail station;

- Enhance the City's supply of housing that provides a range of housing opportunities available to residents from a wide range of economic levels; and

- Bolster/support private investment through investment in public realm.

A series of community meetings and visioning workshops were held to solicit public involvement in the design of the Swanston TVSP project area. At these meetings, members of the community participated in a hands-on design charette and discussed the merits of different land uses and development intensities that would be supportive of the above goals. The planning team, directed by Moore Iacofano Goltsman (MIG), formulated several alternative land use concept plans to test the advantages and disadvantages of each. These alternatives were evaluated for their consistency with pending or foreseeable development applications before the City, their circulation and environmental effects, their ability to support the community's vision for the area, and their responsiveness to anticipated market conditions. Based on these assessments, the community identified a preferred land use scheme and the City directed MIG to develop the supporting policies and implementation strategies to revitalize the Swanston TVSP project area.

Notably, as mentioned above, MIG and the City identified a range of options that feasibly attained most of the City's and community's objectives for the area. As described in the Introduction to this chapter, CEQA likewise requires the consideration of alternatives. Thus, it is common that EIRs for planning projects, such as the proposed Swanston TVSP project, refer to the alternatives that were formulated and evaluated as part of the planning process.

Specifically, two land use schemes, the "Medium Intensity Alternative" and the "Higher Intensity Alternative" were developed based on the general ideas and land use designations from the design charette and community workshops. These alternatives are similar to the proposed Swanston TVSP project in that the basic land use pattern, open space and circulation improvements, utility upgrades, and design guidelines were virtually the same under all future scenarios. However, the alternatives

studied during the planning process are different than the proposed Swanston TVSP project in their proposed land use densities and scale of development. Both the Medium Intensity Alternative and the Higher Intensity Alternative result in greater population and employment than identified for the proposed Specific Plan. As such, neither of these alternatives would substantially reduce the significant impacts identified for the proposed Swanston TVSP and, because they do not avoid or substantially lessen impacts to the physical environment, they do not qualify as "CEQA alternatives." Because of this prior examination of alternatives, the community participation that went into deriving the proposed Swanston TVSP project, and the determination there are no significant and unavoidable impacts that can reasonably be avoided or substantially mitigated by a different land use configuration or development intensity while also achieving the City's goal for establishing a transit village, this EIR presents an assessment of only the required No Project alternative.

8.3 NO PROJECT ALTERNATIVE

Potential Development under No Project Alternative

Under CEQA, the "No Project Alternative" must evaluate not only existing conditions, but also development that could be reasonably expected to occur in the foreseeable future. For the purposes of this EIR, the "No Project" Alternative is defined by continuation of the existing General Plan, which anticipated buildout of the land use designations by 2025. The existing General Plan land use designations for the Swanston TVSP project area are illustrated in Figure 2-3 and anticipate that the area would be developed largely for employment-based uses, primarily heavy commercial and warehousing west of the tracks and regional commercial and offices east of the tracks. According to the existing land use designations, the theoretical maximum development[1] that could occur in the project area would result in 2,275 dwelling units and nearly 2.3 million square feet of commercial and industrial floor area (see Table 8-1). This total is a theoretical calculation based on the current land use designations and assumptions about the potential floor area ratios that would apply.

Impact Assessment

This section evaluates whether the No Project Alternative would have greater or lesser environmental impacts than the proposed Swanston TVSP project.

Aesthetics. The proposed Swanston TVSP project includes Design Guidelines to guide future development. The No Project Alternative would not include these aesthetic guidelines; however, a portion of the Swanston TVSP project area west of the UP tracks is located within the North Sacramento Design Review District. The purpose of the City's design review districts is to ensure that

[1] This theoretical buildout assumes that all land within the plan area is developed or redeveloped to the maximum density allowed by the General Plan and does not take into consideration existing uses.

Table 8-1
Development Projections under Swanston Transit Village Plan Alternatives

		No Project Alternative		Proposed Project		
	Existing (2005)	**Growth Projected Under General Plan**	**General Plan Buildout (2025)**	**New Development in Strategic Plan Area (2025)**	**New Development in Long-Term Plan Area**	**Total at Plan Area Buildout**
Dwelling Units	2,137	138	**2,275**	366	2,230	**4,733**
Population	4,261	355	**4,616**	940	5,730	**10,931**
Commercial Floor Area (in ksf)	Not available	1,016	**2,287,940**	70,000	435,515	**Not Available**
Jobs	7,116	3,119-3,378	**10,235-10,494**	155	1,496	**8,767**
Jobs/Housing[a]	3.3:1	22.6:1-24.5:1	**4.5:1-4.6:1**	0.42:1	0.66:1	**1.85:1**

Source: Sacramento Area Council of Governments and Bay Area Economics, Swanston Transit Village Market Analysis, March, 2006; PBS&J, 2007.

Notes:

a An employee per unit ratio that exceeds 1.0 reflects the fact that there are more jobs than housing units within the City. An employee per unit ratio of 1.0 would mean that there is one job per housing unit.

new development and redevelopment blend appropriately with the existing neighborhood. It is also reasonable to assume that new development and redevelopment east of the UP tracks would also be designed to be compatible with existing buildings. Therefore, because the No Project Alternative would be designed to be compatible with the existing neighborhood, impacts to visual quality and urban design under the No Project Alternative would not be expected to result in significant impacts on visual quality and character. However, the No Project Alternative would not benefit from the additional guidelines and standards articulated in the proposed Design Guidelines of the Swanston TVSP project. These guidelines would create a new image for the project area. This new direction would not occur under the No Project Alternative.

Air Quality. The Swanston TVSP project is a transit-oriented development plan aimed at reducing traffic and thus air emissions. Development that could occur under the proposed Swanston TVSP would affect about 71 percent of the parcels in the Swanston TVSP project area. The No Project Alternative would retain existing zoning districts and thus would not result in the revitalization and changes envisioned by the Swanston TVSP project, although the area is still projected to experience considerable non-residential development as shown in Table 8-1. Under both alternatives, the Sacramento Metropolitan Air Quality Management District's recommended mitigation measures to address particulate matter would be applicable and reduce impacts to less than significant.

With respect to long-term operational air quality impacts, the No Project Alternative would not include traffic reduction measures like the Swanston TVSP project, which include traffic-calming measures on project area streets and emphasis on pedestrian and bicycle circulation and linkages to the Swanston

Light Rail Station. In addition, the No Project Alternative would not take advantage of the regional mobility afforded by the Swanston Light Rail Station nor would it provide the neighborhood-serving retail uses that can further reduce trips on the local roadways (and, hence, air emissions). As a result, future traffic volumes at representative locations throughout the Swanston TVSP project area would be greater under the No Project Alternative than under the proposed Swanston TVSP project, as shown in Section 6.11, Transportation. Accordingly, the No Project Alternative would result in greater air emissions than the Swanston TVSP project; this would be a significant and unavoidable impact for emissions of ozone precursors.

Biological Resources. There are potential "other waters of the U.S., known occurrences of purple martins, heritage trees, and trees used for nests in the Swanston TVSP project area. Any development, regardless of the alternative, that would affect the identified topographic depressions or ditches that may be "other waters of the U.S." would require a jurisdictional wetland determination and the identification of a mitigation plan, if the U.S. Army Corps of Engineers exert jurisdiction over the wetland. The No Project Alternative would not involve improvements to El Camino Avenue and thus could avoid disturbance to the purple martin, which would occur with the Swanston TVSP project. In Section 6.3, Biological Resources, mitigation measures are proposed that would reduce this impact under the Swanston TVSP project to less than significant. Disturbance to heritage trees, regardless of the alternative, would be subject to the City's Tree Preservation Ordinance. Finally, potential development under the No Project Alternative would be required to conduct tree surveys and migratory breeding-season surveys and avoid disturbance to nesting birds, as appropriate; thus, the impacts would be similar to those identified for the proposed Swanston TVSP project.

Cultural Resources. There are no identified historical resources in the Swanston TVSP project area, although there are several buildings considered potentially eligible as historic resources, pending further investigation. Accordingly, the No Project Alternative, like the proposed Swanston TVSP project, would not adversely affect known historical resources. Similarly, the properties that may be historical resources would be subject to the same review procedures and protections (if any are found to be historic) regardless of the alternative. Thus, in terms of historical resources, the No Project Alternative would have the same less-than-significant effect as the proposed Swanston TVSP project.

With respect to undiscovered cultural resources, there is a similar likelihood for such resources, if present, to be uncovered under the No Project Alternative as under the proposed Swanston TVSP project. The No Project Alternative would not include the open space amenities or the same utility improvements – both of which involve ground disturbance and thus a higher potential to encounter undiscovered cultural resources. Nevertheless, such resources, if identified, would be similarly investigated and treated and, thus, potential impacts to undiscovered cultural resources would be the same under both alternatives.

Geology, Soils, and Seismicity. Given that the Swanston TVSP project area is not located within a high hazard area for geologic hazards, except for groundshaking, and that groundshaking impacts can be sufficiently mitigated through compliance with the California Building Code, geoseismic impacts are

regarded to be less-than-significant under the No Project Alternative, the same as under the proposed Swanston TVSP project.

Hazardous Materials. The proposed Swanston TVSP project would allow the conversion of industrial land uses in the project area to residential and commercial uses. These new land uses would be expected to use less hazardous materials than the existing industrial uses. As a result, the potential for accidental releases of hazardous materials would be expected to diminish under the proposed Swanston TVSP project, compared to the No Project Alternative, which would continue the current industrial land use pattern. Since industrial uses are more likely to involve the handling of hazardous materials, the No Project Alternative would result in a greater potential for routine or accidental exposure to hazardous materials. As described in Section 6.6, Hazardous Materials, a number of local, state, and federal regulations are in place to control, monitor, and respond to hazardous materials incidents. As a result, even though the No Project Alternative would involve more industrial activity within the project area than the proposed Swanston TVSP project, the potential for significant hazardous materials would still be considered less than significant because of the regulatory framework.

Hydrology and Water Quality. The proposed Swanston TVSP project designates more acreage for open space than the No Project Alternative. Since the No Project Alternative would have less open space and, thus, more impervious surfaces than the proposed Swanston TVSP project, the No Project Alternative would be expected to have greater stormwater runoff volumes. As noted in Section 6.10, Utilities, localized flooding occurs during major storm events because of undersized storm drains in the Swanston TVSP project area and in downstream areas. The City is aware of these capacity problems and proposed upgrades would be equally applicable under both the No Project Alternative and the proposed Swanston TVSP project. Under both alternatives, the improvements, including a City-recommended stormwater detention basin or on-site detention facilities, would be funded through the City's Capital Improvement Program, special financing mechanisms, or developers, if required by the City.

While storm drainage and capacity constraints would be corrected, the stormwater pollutant characteristics would gradually change under the proposed Swanston TVSP project from industrial to residential and commercial uses. Under the No Project Alternative, constituents in the stormwater would continue to exhibit higher concentrations of metals, solids, oils, and grease, compared to the proposed Swanston TVSP project. The pollutants associated with industrial land uses can pose a potential for greater degradation of receiving water quality than for residential and commercial land uses. However, both alternatives would be required to follow applicable federal, state, and local regulations to implement best management practices to avoid adverse effects on receiving waters and result in less-than-significant water quality impacts.

With respect to other hydrology and water quality concerns, both the No Project Alternative and the proposed Swanston TVSP project would have the same less-than-significant impacts with respect to exposure to flood hazards and effect on groundwater recharge and groundwater quality.

Noise. The proposed Swanston TVSP project is a transit-oriented development plan which reduces vehicular traffic and associated noise impacts. As shown in Section 6.8, Noise, future traffic volumes

and noise levels at representative locations throughout the Swanston TVSP project area would be less under the proposed Swanston TVSP project than under the No Project Alternative. Under both alternatives, however, the noise impacts from vehicular traffic associated with future land uses would be less than significant. The No Project Alternative retains more industrial land uses than the proposed Swanston TVSP project. Thus, development under the No Project Alternative would be expected to have higher noise levels due to truck activity and loading/unloading activities than the residential and commercial development that could occur under the proposed Specific Plan. Within areas that are predominantly industrial or commercial in character, these types of activities would not be expected to result in a noise impact; however, if such uses are near existing or proposed residential uses, there could be adverse but mitigable noise impacts. Project-specific review as development in accordance with the No Project Alternative occurs would ensure land use noise compatibility and compliance with the City's Municipal Code noise standards and General Plan noise policies should reduce such impacts to less than significant.

Construction-related noise impacts under both alternatives would need to comply with the City's Municipal Code and result in less-than-significant noise impacts. By contrast, ground-borne vibration associated with future development could result in significant impacts that may not be mitigated to less than significant. Such impacts that may result from pile-driving activities would be significant and unavoidable under both alternatives.

Public Services. All public services are adequate in the Swanston TVSP project area under the existing conditions and the Strategic Plan would have a less-than-significant impact. The same less-than-significant conclusion is anticipated for the Long-Term Plan of the Swanston TVSP project; however, this assumes that the City's programs for improving and enhancing community services and public facilities enable the requisite expansion to maintain desired service levels. It should be noted that for most public services (i.e., police protection, fire protection, schools, libraries, and parks), population increases drive the demand for new or expanded public service facilities and infrastructure. Because the No Project Alternative would result in fewer residents than under the proposed Swanston TVSP project (see Table 8-1), the demand for public services would be less under this alternative and the potential need for new public service facilities to serve new residential population would be less. Nevertheless, under both alternatives, the future demand for, and impact to, public services is projected to be less than significant.

Utilities. Water and wastewater systems throughout the Swanston TVSP project area are undersized. Development under both the No Project Alternative and the proposed Swanston TVSP project would require upgrading these systems to satisfy City standards. The need to upgrade these utilities would apply whether development occurred under the No Project Alternative or the proposed Swanston TVSP project. Accordingly, the impacts would be similar.

With respect to solid waste landfill capacity and electricity and natural gas supply, these utilities are expected to be adequate in the long run under both alternatives, and thus, the No Project Alternative would have a less-than-significant impact on solid waste and energy utilities, similar to the proposed Swanston TVSP project.

Transportation. The proposed project is a transit-oriented development plan which could reduce vehicular traffic throughout the Swanston TVSP project area. As described in Section 6.11, Transportation, the total number of vehicular trips would be less under the proposed Swanston TVSP project than under the No Project Alternative. The future No Project conditions, described as the "baseline conditions" in the Year 2025 show four intersections, three roadway segments, and nine freeway on- or off-ramps that would operate at unacceptable levels. Thus, the No Project Alternative would be expected to result in significant traffic impacts, unless mitigated. Notably, the No Project Alternative would not promote use of the Swanston and Royal Oaks Light Rail Stations, would not foster a walkable, pedestrian-oriented community around the light rail stations, and would not encourage bicycle circulation through the Swanston TVSP project area and beyond. By contrast, the proposed Swanston TVSP project would have beneficial effects on pedestrian and bicycle circulation in the project area.

Impacts related to other elements of the transportation system – parking, transit usage, and freight/heavy rail operations – would be less than significant for the No Project Alternative, similar to the proposed Swanston TVSP project.

8.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Sections 21002 and 21081 of CEQA require lead agencies to adopt feasible mitigation measures or feasible environmentally superior alternatives in order to substantially lessen or avoid otherwise significant adverse environmental effects, unless specific social or other conditions make such mitigation measures or alternatives infeasible. Where the environmentally superior alternative also is the no project alternative, CEQA Guidelines in Section 15126.6(e)(2) requires the EIR to identify an environmentally superior alternative from among the other alternatives.

The No Project Alternative results in greater impacts to the environment, primarily because it results in greater vehicular traffic and related noise and air quality impacts than under the proposed Swanston TVSP project. In addition, benefits to pedestrian and bicycle circulation that are identified for the proposed Swanston TVSP project would not be realized. The proposed Swanston TVSP project would introduce environmental-friendly, low-impact design for stormwater runoff management that are not part of the No Project Alternative. Finally, the opportunities to create a new image for the area and to promote revitalization of the area as a mixed use, transit village would not be possible under a scenario with the existing General Plan land use designations and zoning. Therefore, the proposed Swanston TVSP project would be environmentally superior to the No Project Alternative.

Chapter 9
Report Preparation

9.1 LEAD AGENCY

City of Sacramento
Environmental Planning Services
Development Services Department
2101 Arena Blvd., Suite 200
Sacramento, CA 95834
(916) 808-5538

Jennifer Hageman, Senior Planner

9.2 EIR AUTHORS

EIR Consultant

PBS&J
1200 Second Street
Sacramento, California 95814

Project Manager	Rodney Jeung, AICP
Deputy Project Managers	Rachel Galaraga, Paul Stephenson
Land Use Consistency and Compatibility	Steve Smith
Population and Housing	Sarah Troub
Aesthetics	Amber Grady
Air Quality	Geoff Hornek, Angela Campbell
Biological Resources	Ron Walker, Todd Wong
Cultural Resources	Amber Grady, Steve Smith
Geology, Soils, and Seismicity	John Eghoian
Hazardous Materials	John Eghoian, Erick Cooke
Hydrology and Water Quality	Erick Cooke
Noise	Geoff Hornek, Angela Campbell
Public Services	John Eghoian
Utilities	John Eghoian, Dave Beauchamp
Transportation	Brad Lane
Alternatives	Rachel Schuett
Report Production	Kristine Olsen, Charisse Case, Alta Cunningham
Report Graphics	James Songco, Charisse Case

Transportation and Utilities Infrastructure Consultant

Kimley-Horn and Associates
1430 Blue Oaks Boulevard, Suite 120
Roseville, CA 95747

Steve Pyburn, CE/TE
Matt Weir, CE/TE
Sean Papathakis
Robert Paderna
Victoria Rose

THIS PAGE INTENTIONALLY LEFT BLANK