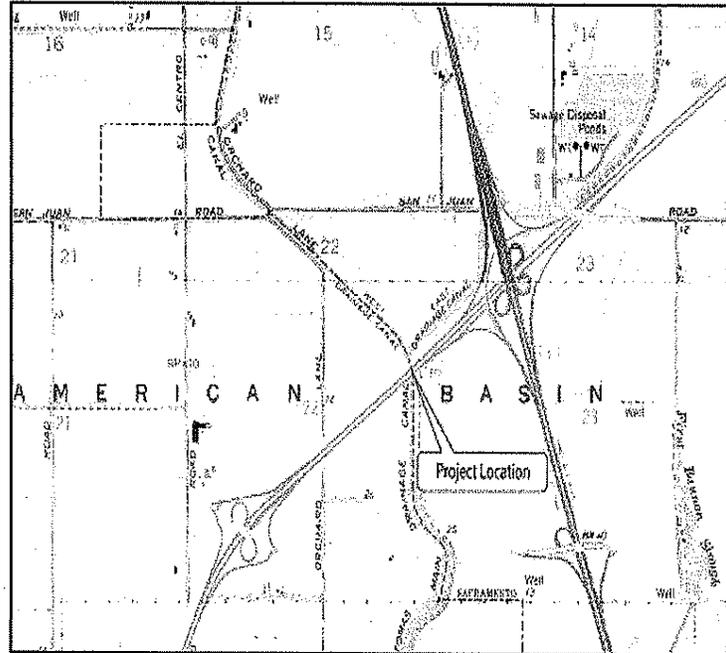


Natomas Interstate 80 Bicycle and Pedestrian Overcrossing Project (CIP# HC21)



Initial Study with Mitigated Negative Declaration

Prepared by the
City of Sacramento
Department of Transportation

June 2008

GENERAL INFORMATION ABOUT THIS DOCUMENT

What is in this document:

The City of Sacramento Department of Transportation has prepared this Initial Study/Mitigated Negative Declaration, which examines the potential environmental impacts of the proposed project located in Sacramento, California. The document describes why the project is being proposed; the existing environment that could be affected by the project; and the proposed mitigation measures.

What you should do:

- Please read this Initial Study/Mitigated Negative Declaration. Additional copies of this document, as well as the technical studies, are available for review at the following locations:

City of Sacramento
Development Services Department
300 Richards Boulevard, 3rd Floor
Sacramento, CA 95811

- We welcome your comments. If you have any comments regarding the proposed project, please send your written comments to the Department by the deadline.
- Submit comments via postal mail to:

Scott Johnson
City of Sacramento Development Services Department
300 Richards Boulevard, 3rd Floor
Sacramento, CA 95811

- Submit comments via email to: sjohnson@cityofsacramento.org
- Submit Comments by the deadline: August 1, 2008



DEVELOPMENT SERVICES
DEPARTMENT

**CITY OF SACRAMENTO
CALIFORNIA**

300 RICHARDS BLVD, 3RD FLR
SACRAMENTO, CA
95811

MITIGATED NEGATIVE DECLARATION

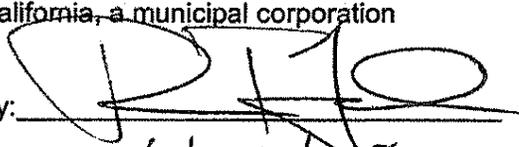
The City of Sacramento, California, a municipal corporation, does hereby prepare, make declare, and publish this Mitigated Negative Declaration for the following described project:

I-80 Pedestrian/Bicycle Overcrossing (CIP#: HC21) The City of Sacramento proposes to construct a pedestrian/bicycle overcrossing (POC) over Interstate 80 adjacent to the Natomas Main Drainage Canal where the Natomas West and Natomas East Drainage canals merge. The City also proposes to construct an at-grade level bridge (Canal Bridge) across the West Drainage Canal to link the north end of the POC with the existing trail. The project will also consist of all railings and fencing, grading, paving and slope protection, signage, and lighting associated with the POC. The POC will consist of a cast-in-place box girder section, supported by two cast-in-place concrete abutments and five cast-in-place concrete columns on driven piles. The Canal Bridge will include a pre-manufactured steel truss "flat slab" structure this unit will consist of weathering steel, concrete deck, and smooth steel handrails; it will be designed to be removable as needed by the Reclamation District 1000 for maintenance of the Canal. Concrete will also line the canal bottom under the bridge and 10 feet beyond in both directions.

The City of Sacramento, Development Services Department, has reviewed the proposed project and on the basis of the whole record before it, has determined that there is no substantial evidence that the project, with mitigation measures as identified in the attached Initial Study, will have a significant effect on the environment. This Mitigated Negative Declaration reflects the lead agency's independent judgment and analysis. An Environmental Impact Report is not required pursuant to the Environmental Quality Act of 1970 (Sections 21000, et seq., Public Resources Code of the State of California).

This Mitigated Negative Declaration has been prepared pursuant to Title 14, Section 15070 of the California Code of Regulations; the Sacramento Local Environmental Regulations (Resolution 91-892) adopted by the City of Sacramento. A copy of this document and all supporting documentation may be reviewed or obtained at the City of Sacramento, Development Services Department, 300 Richards Boulevard, 3rd Floor, Sacramento, California 95811.

Environmental Services Manager, City of Sacramento,
California, a municipal corporation

By: 

Date: 6/24/08

Table of Contents

		Page
Chapter 1	Proposed Project	1-1
1.1	Introduction	1-1
1.2	Purpose and Need	1-1
1.2.1	Project Purpose	1-1
1.2.2	Need for the Project	1-2
1.3	Project Description	1-2
1.4	Permits and Approvals Needed	1-7
1.4.1	City of Sacramento (State Lead Agency under CEQA)	1-7
1.4.2	Federal Highway Administration (Federal Lead Agency under NEPA)	1-8
1.4.3	Other Agencies	1-8
Chapter 2	Affected Environment, Environmental Consequences, and Mitigation Measures	2.1-1
2.1	Human Environment	2.1-1
2.1.1	Land Use	2.1-1
2.1.2	Utilities/Emergency Services	2.1-7
2.1.3	Traffic and Transportation/Pedestrian and Bicycle Facilities	2.1-9
2.1.4	Visual/Aesthetics	2.1-11
2.1.5	Cultural Resources	2.1-15
2.2	Physical Environment	2.2-1
2.2.1	Hydrology, Water Quality, Stormwater, and Runoff	2.2-1
2.2.2	Geology, Soil, and Seismicity	2.2-4
2.2.3	Paleontology	2.2-8
2.2.4	Hazardous Waste/Materials	2.2-13
2.2.5	Air Quality	2.2-15
2.2.6	Noise	2.2-25
2.3	Biological Environment	2.3-1
2.3.1	Biological Resources	2.3-1
2.3.2	Wetlands and Other Waters	2.3-3
2.3.3	Plant Species	2.3-6
2.3.4	Animal Species	2.3-7
2.3.5	Threatened and Endangered Species	2.3-16
2.3.6	Noxious Weeds	2.3-23
Chapter 3	List of Preparers	3-1
3.1	City of Sacramento	3-1
3.2	URS Corporation	3-1
3.3	ICF Jones & Stokes Associates	3-1
Appendix A	CEQA Environmental Significance Checklist	
Appendix B	Mitigation Summary	
Appendix C	Acronyms	
Appendix D	References Cited	
Appendix E	Letter of Concurrence	

List of Tables

Table		Page
1.3.1-1	Construction Stages and Equipment	1-5
2.2.3-1	Society of Vertebrate Paleontology's Definitions of Sensitivity Categories and Recommended Treatment for Paleontological Resources.....	2.2-11
2.2.5-1	Ambient Air Quality Standards Applicable in California	2.2-17
2.2.5-2	Sacramento Metropolitan Air Quality Management District Significance Thresholds (Ozone Precursor Emissions).....	2.2-18
2.2.5-3	Sacramento Metropolitan Air Quality Management District Particulate Matter Screening Levels for Construction Projects.....	2.2-19
2.2.5-4	Ambient Air Quality Monitoring Data at the Sacramento Airport Road and T Street Monitoring Stations.....	2.2-20
2.2.5-5	Maximum Daily Emissions from Construction Activities (Unmitigated).....	2.2-23
2.2.5-6	Maximum Daily Emissions from Construction Activities (Mitigated).....	2.2-23
2.2.6-1	Exterior Noise Compatibility Standards for Various Land Uses.....	2.2-27
2.2.6-2	Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA)	2.2-27
2.3.3-1	Sensitive Plants Identified during the Pre-Field Investigation as Having the Potential to Occur in the I-80 Project Area	2.3-26
2.3.5-1	Special-Status Wildlife Species Documented or Identified during the Pre-Field Investigation as Having the Potential to Occur in the I-80 Study Area	2.3-29
2.3.5-2	Giant Garter Snake Habitat Affected by the Proposed Project.....	2.3-18
2.3.6-1	Noxious Weeds Located in the Project Area.....	2.3-24

List of Figures

Figure		Follows Page
1.1-1	Regional Location	1-2
1.1-2	Project Vicinity	1-2
1.3-1	Proposed Project Area.....	1-2
2.1-1	Land Use and Zoning Designations in the Project Area	2.1-2

Chapter 1 Proposed Project

1.1 Introduction

The City of Sacramento (City), Department of Transportation (DOT), previously known as the Department of Public Works, proposes to construct a bicycle and pedestrian overcrossing (POC) over Interstate 80 (I-80), linking the communities of South and North Natomas in the City of Sacramento, in Sacramento County (County).

Funding for the construction phase is anticipated to be a combination of local, state, and federal funds. Subsequently, a Categorical Exclusion (CE) would be prepared for the proposed project to satisfy the National Environmental Policy Act (NEPA), for which the California Department of Transportation (Caltrans)—as the state designee for the Federal Highway Administration (FHWA)—would be the federal lead agency.

The proposed project is located within the northwestern area of the city of Sacramento, in Sacramento County, California (Figure 1.1-1). The project site (site) is between the areas addressed in the *North Natomas Community Plan* and *South Natomas Community Plan* (City of Sacramento 2007). The site is located where the Natomas Main Drainage Canal crosses I-80 at Post Mile (PM) 2.10, approximately ½ mile west of Interstate 5 (I-5) (Figure 1.1-2) (location reference PM-M2.1: 03-SAC-80 KP-M3.4). Local streets in the project area include Gateway Oaks Drive, Buchman Circle, Guadalajara Way, and Tintorera Way.

The project area also includes the portion of the Natomas Main Drainage Canal just south of I-80 and access right-of-way east of the canal. North of I-80, the project area includes portions of the West and East Drainage Canals, and access right-of-way adjacent to the confluence of these canals.

Rapid development and growth has led to increasing demands on all modes of the transportation system in both North and South Natomas. In response, the City has recognized the importance of a versatile network of bicycle trails that can be used for both nonvehicular commuting and recreation. Creation of the *2010 Sacramento City/County Bikeway Master Plan* (City of Sacramento, County of Sacramento 1993) (Bikeway Master Plan) in 1993 marked the beginning of the City's efforts to lay the foundation for its current pathway system.

The Bikeway Master Plan has been updated in the past; updates were adopted in 2001 and 2004 (City of Sacramento website). The current update includes the placement of new alignments throughout the various communities of Sacramento, as well as the removal of several proposed alignments within the North Natomas Community Plan area.

1.2 Purpose and Need

1.2.1 Project Purpose

The City DOT is creating an interconnected pathway system throughout the City and County, as envisioned in the updated Bikeway Master Plan. As part of the plan, the City has selected the Natomas Main Drainage Canal Trail to promote a safe, enjoyable, and efficient environment for bicycling in Natomas.

In accordance with the planning objectives of the Bicycle Master Plan, the objective of the proposed project is to construct a POC at I-80 and the West Drainage Canal that:

- is consistent with the goals and policies of other existing citywide or regional plans, such as the *2010 Sacramento City/County Bikeway Master Plan*, *City of Sacramento General Plan*, and the *North Natomas* and *South Natomas Community Plans*;
- is consistent with local and regional transportation plans and programs;
- is compatible with the preservation of cultural and biological resources;
- is compatible with existing and future adjacent land uses;
- will provide the highest possible level of safety and security for bicyclists; and
- will contribute to a bikeway system that will benefit and serve the recreational and transportation needs of the public.

1.2.2 Need for the Project

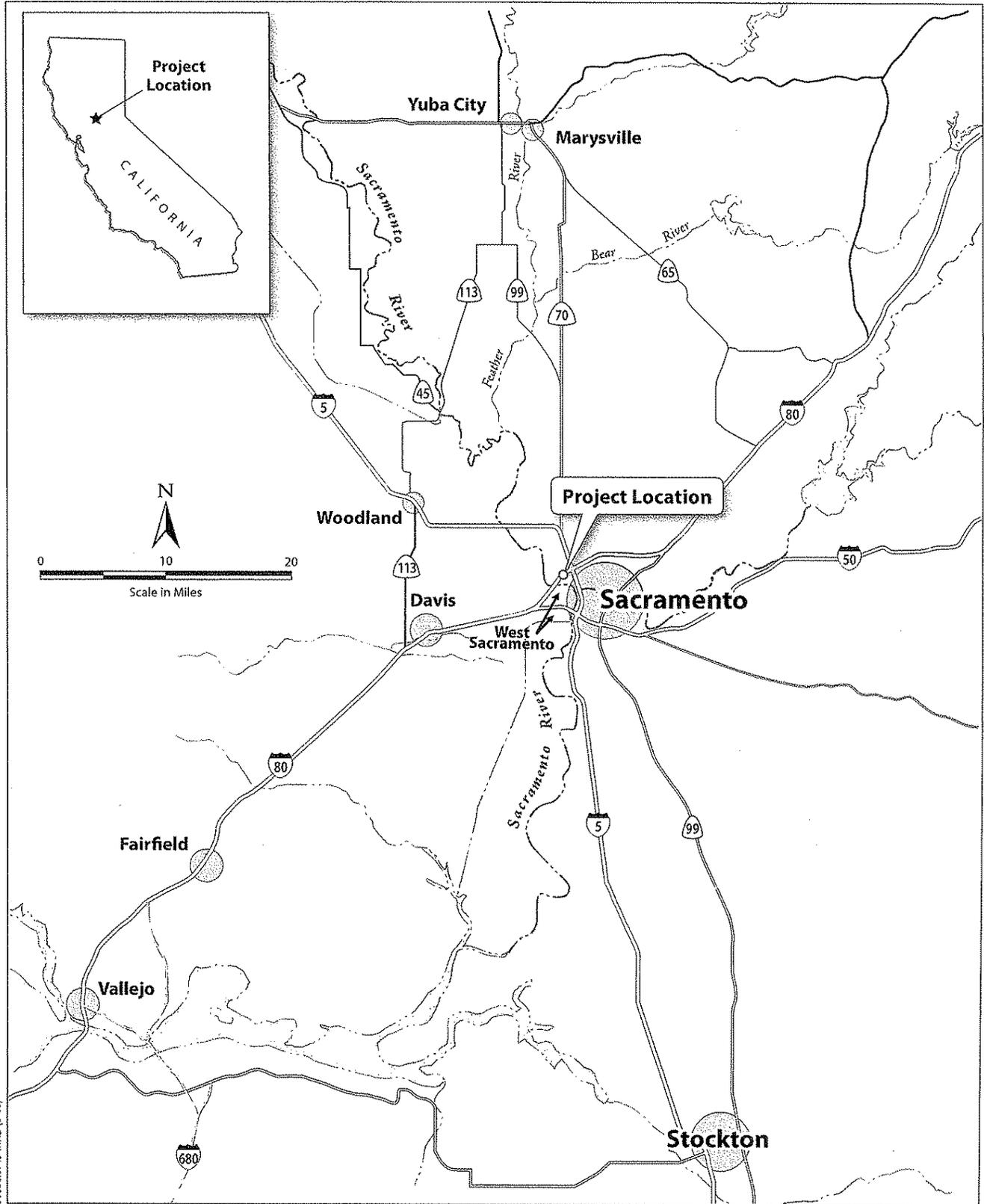
The goal of the Bikeway Master Plan is to coordinate and develop a bikeway system throughout Sacramento County that will benefit and serve the recreational and transportation needs of the public. When complete, the trail will provide an interconnected system along the West Drainage Canal corridor for use by both pedestrians and cyclists. Many successful trails are already in place, but obstacles preventing their overall connection occur at many major thoroughfares, such as I-80. The proposed project entails construction of a POC to connect existing and proposed trails to a more completely linked bicycle pathway system, and to provide an attractive and safe passage across the heavily traveled interstate highway without affecting vehicular traffic. The proposed project provides a crucial link in the trail system by constructing a dedicated POC over I-80 to connect the existing trail on the south side of I-80 with a planned segment on the north side of the freeway. The northern trail segment was constructed as part of the Lower Northwest Interceptor Sewer Main (LNWI) project). Construction of the POC is expected to begin in January 2010 and be completed by December 2010.

1.3 Project Description

The proposed project will connect the existing bicycle path in South Natomas to a new bicycle path along the East Drainage Canal in North Natomas (Figure 1.3-1). The connection will consist of two bridge segments: one across I-80 and one across the West Drainage Canal. Both bridges will be compliant with the Americans with Disabilities Act (ADA).

The south connection point will be to the existing path running north-south at the present terminus of Gateway Oaks Drive near the east levee of the Natomas Main Drainage Canal. The new path will rise in elevation approximately 20 feet to cross I-80. The POC will follow a shallow “S” curve between its abutments; the north connection point will be on the west levee bank of the West Drainage Canal in North Natomas. From there, the path will cross the West Drainage Canal on a second bridge (Canal Bridge). From the east end of the Canal Bridge, a trail connects with the bicycle path.

The LNWI access road, constructed by the Regional Sanitation District, runs from near the confluence of the East and West Drainage Canals along the sewer alignment, on the northwest side of the East Drainage Canal and terminating at San Juan Road near the I-5 undercrossing.



00638.07 15-MIND (3-08)

**Figure 1.1-1
Regional Location**

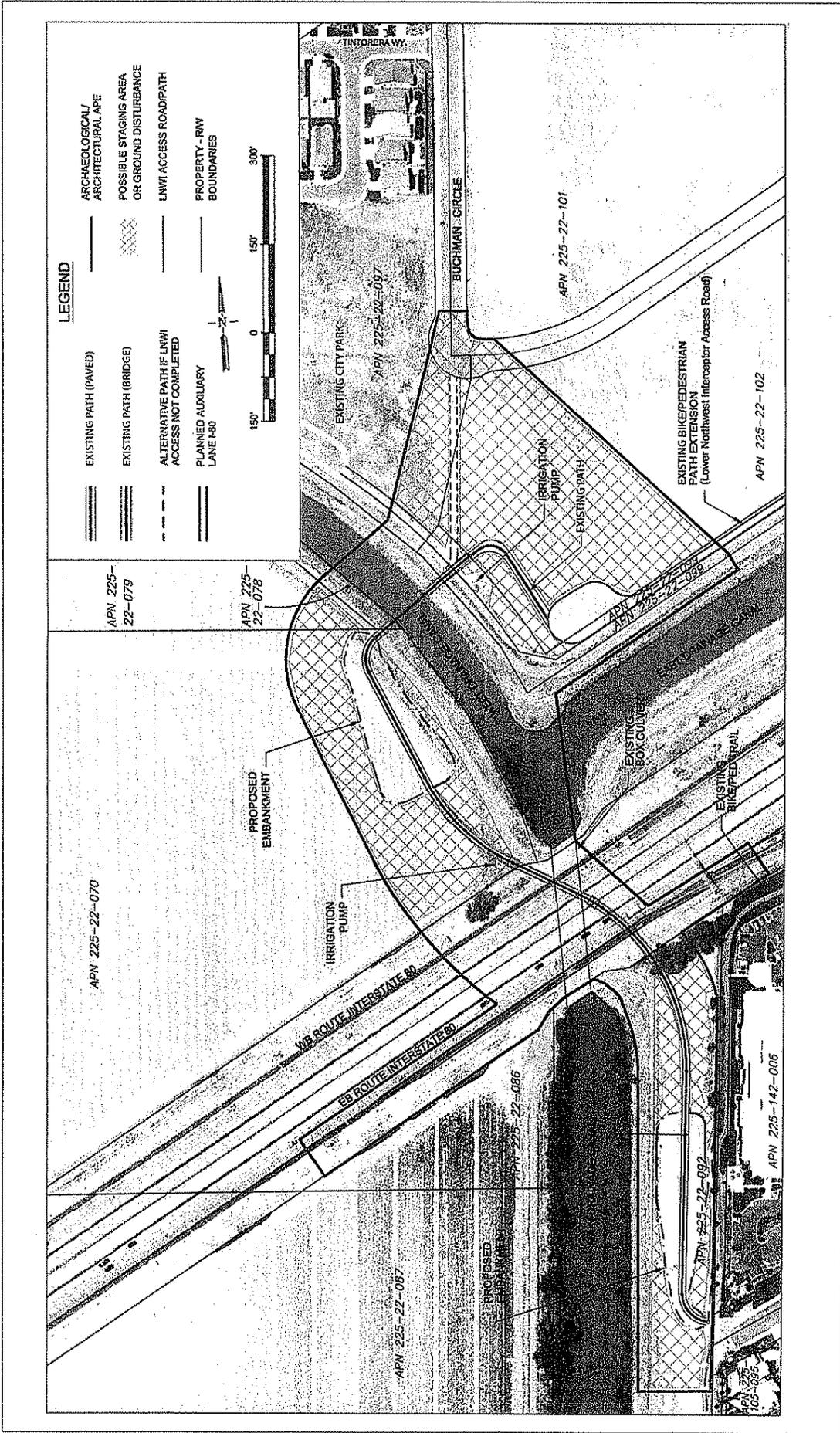


Figure 1.1-3
Proposed Project Area

The proposed project will require a modest amount of fill, expected to be approximately 9,810 cubic yards. Imported material will be used for needed fill. The source and haul routes are unknown and will be chosen by the contractor at the time they are needed. The maximum amount of material hauling trips is expected to be four trucks making four trips per day. Hauling will be conducted during normal business hours (8:30 a.m.–5 p.m., Monday–Friday). The proposed project is not expected to generate any excess material.

1.3.1.5 Paving and Slope Protection

The pathways will be paved with impervious surfaces, primarily asphalt. The POC deck will be concrete. The Canal Bridge deck will be concrete or treated timber. The paved pathways will be 12 feet wide, with gravel shoulders (approximately 4 feet wide) on each side.

Bridge embankments will be stabilized with 1:4 slopes. These embankments will be mechanically placed and compacted to be permanently stable. Long-term erosion and sedimentation will be controlled by hydroseeding with native dryland grasses and typical grass cover according to Caltrans-approved construction site best management practices (BMPs)¹, as appropriate. Irrigation and decorative landscaping will not be included in the proposed project. Temporary stabilization will also be implemented through use of Caltrans BMPs.

Drainage from the POC structure will be carried through open channel curbing and collected by small culverts at each end of the bridge. These culverts will carry any surface water away from the structure and into the natural drainages of the area. The presence of the bridge structures will not produce appreciable changes in the existing amount or rate of surface runoff.

1.3.1.6 Signage

Signage will provide information or direction related to the path. The path will not cross any City streets, areas of public vehicular traffic, or other regulated areas. Caltrans may require installation of an overhead sign on the POC, to be attached with Caltrans standard bolts, inserts, and related hardware.

1.3.1.7 Lighting

Lighting of the POC will be Caltrans standard fluorescent fixtures fixed on the overhang of the POC fence. Lighting for the proposed pathway will be based on City standard streetlights and will include lighting of the Canal Bridge. These lights will be designed and directed to minimize glare for people within surrounding land uses and for drivers on I-80.

1.3.1.8 Construction Staging Areas and Access

Four possible staging areas have been identified on existing City or County properties or City-held easements:

¹ Detailed descriptions and guidance regarding implementation of these BMPs may be found in the Caltrans *Construction Site Best Management Practices Manual* (California Department of Transportation 2003) and Section 2 of the *Statewide Storm Water Quality Handbooks* (California Department of Transportation 2007). These BMPs are organized into six categories suitable for temporary erosion and sediment control on construction sites, including soil stabilization practices, sediment control practices, tracking control practices, wind erosion controls, non-stormwater controls, and waste management and material pollution controls.

- the lot/easements northwest of the confluence of the East and West Drainage Canals on which the embankments, path connections, and Canal Bridge will be constructed;
- the lot/easements northeast of the confluence of the West and East Drainage Canals, which will likely be used for the contractor’s yard (office and limited storage);
- the strip of land along the east side of the Natomas Main Drainage Canal, between Gateway Oaks Drive and I-80; and

Staging areas will be accessed throughout the duration of the construction period. The total area used will be almost the entire project study area.

1.3.1.9 Construction Phasing

Construction will last approximately 1 year. Construction of the POC is expected to begin in January 2010 and be completed by December 2010. The Canal Bridge will be constructed at the same time as the I-80 POC construction. Cranes will be needed for drilling foundations and lifting bridge elements. I-80 traffic will be controlled through progressive lane closures at nights during bridgework over the highway. A one-time detour of traffic on I-80 will be required from midnight to 500 AM. Only one direction of I-80 will be detoured at a time. The detour is needed to remove the I-80 POC falsework. The construction stages and equipment are listed in Table 1.3.1-1. Also shown are the types of equipment that will be used, manufacturer/model, horsepower, and associated percentages of use.

Table 1.3.1-1. Construction Stages and Equipment

Stage	Duration	Hours of Operation	Equipment
Mobilize and prepare site	2 weeks	Daytime hours	3 pickups:200- 300 HP, V6 or V8: 15% utilization 1 backhoe loader: Cat 428B, 74 horsepower (HP), 35% utilization 1 dozer: Cat D7G, 200 HP, 15% utilization
Construct embankment and rough grade approach fills to POC and Canal Bridge	3 weeks	Daytime hours	4 pickups: Chevy, 300 HP, 15% utilization 1 backhoe loader: Cat 428B, 74 HP, 50% utilization 1 dozer: Cat D7G, 200 HP, 75% utilization 4 dump trucks: International, 300 HP, 85% utilization 4,000 gallon watertank truck: 15% utilization 1 vibratory sheepsfoot, Cat CP-553, 165 HP: 20% utilization
Construct POC • Drive piles, pour POC footings • Drive piles, form and pour POC abutments • Set formwork, rebar, and pour POC column bents • Erect falsework for POC superstructure; some night work setting overhead formwork • Set rebar and cast POC superstructure	25 weeks	Daytime hours	125-ton Crane:15% utilization 60-ton Crane: 20% utilization Delmag D30 diesel pile driving hammer: 10 % utilization 4 pickups (3/4 ton): 20% utilization 4-ton forklift: 10% utilization Kobelco SK-10 Excavator: 15% utilization 5-axle dump truck: 20% utilization Flatbed truck: 20% utilization Portable Compressor 250-CFM: 30% utilization Bidwell 2450 /concrete paver: 10% utilization 4,000-gallon water truck: 50% utilization 10-CY Concrete delivery truck: as needed from suppliers 5-axle flatbed materials delivery trucks: as needed from suppliers

Stage	Duration	Hours of Operation	Equipment
Strip POC falsework	5 consecutive nights	Night hours	3 pickups: 200- 300 HP, V6 or V8: 15% utilization 1 backhoe loader: Cat 428B, 74 HP, 25% utilization 1 dozer: Cat D7G, 200 HP, 15% utilization 1 dump truck: International, 300 HP, 60% utilization 1 link belt crane: ATC 822, 230 HP, 40% utilization 1 link belt crane: LS-208H II, 263 HP, 50% utilization 2 generator sets: Cat 1.1 L, 140 HP, 80% utilization
Construct Canal Bridge <ul style="list-style-type: none"> • Place 2 temporary dams and drain pipes across the West Drainage Canal and dewater the area under the Canal Bridge • Form, pour, and cure concrete lining of the canal • Remove cofferdams • Drive piles, form and pour Canal Bridge abutments • Set premanufactured Canal Bridge in place 	10 weeks	Daytime hours	3 pickups: 200- 300 HP, V6 or V8: 15% utilization 1 backhoe loader: Cat 428B, 74 HP, 75% utilization 1 dump truck: International, 300 HP, 40% utilization 1 link belt crane: ATC 822, 230 HP, 15% utilization 1 link belt crane: LS-208H II, 263 HP, 20% utilization 2 generator sets: Cat 1.1 L, 140 HP; and dewatering pumps: 75% utilization 5 concrete trucks: Mack, 350 HP, 5% utilization
Install lighting and fencing	3 weeks	Daytime hours	2 pickups: 200- 300 HP, V6 or V8: 15% utilization 1 backhoe loader: Cat 428B, 74 HP, 30% utilization 1 generator set: Cat 1.1 L, 140 HP, 65% utilization
Pave pathways and paint striping	4 weeks	Daytime hours	3 pickups: 200- 300 HP, V6 or V8: 15% utilization 1 dozer: Cat D7G, 200 HP, 10% utilization 1 backhoe loader: Cat 428B, 74 HP, 20% utilization 2 asphalt hauling trucks: International, 300 HP, 15% utilization 1 paver: Cat AP-200 B, 35 HP, 10% utilization 1 AC roller: Cat CB-224C, 33 HP, 10% utilization 1 paver: Cat BG 245 B, 155 HP, 5% utilization 1 AC roller: Cat CB, 634 HP, 5% utilization
Finish grading and hydroseed	2 weeks	Daytime hours	2 pickups: 200- 300 HP, V6 or V8: 15% utilization 1 backhoe loader: Cat 428B, 74 HP, 20% utilization 1 dozer: Cat D7G, 200 HP, 10% utilization
Cleanup and demobilization	2 weeks	Daytime hours	3 pickups: 200- 300 HP, V6 or V8: 15% utilization 1 backhoe loader: Cat 428B, 74 HP, 20% utilization 1 dozer: Cat D7G, 200 HP, 10% utilization

All access to the site for construction will be from local streets. The contractor will be expected to use the RD-1000 access roads from San Juan Road from the northwest, and to construct a temporary access road from Buchman Circle from the northeast. Access from the southeast will be from El Camino and Gateway Oaks Drive. Access to the Caltrans right-of-way may be from either west or east, but will be predominantly from the El Camino on-ramp west of the project site. Levees will not be used for accessing the West Drainage Canal in any direction. Abutments for the Canal Bridge will be located in the levees on each side.

1.3.1.10 Operation and Maintenance

Continued operation and maintenance of the facility will be the responsibility of the City Department of Transportation (DOT) in accordance with DOT standards. Pathway entry points at roadway or sidewalk connections will preclude motor vehicle access, except for emergency response or maintenance activities.

Pathway and bridge maintenance will be conducted during normal business hours (8:30 a.m.–5:30 p.m.), Monday–Friday (holidays excepted). Monthly visual inspections of facilities will be performed and documented for the presence of the following conditions:

- graffiti,
- damaged or broken light fixtures,
- damaged or broken fencing,
- illegal dumping, and
- debris and/or broken glass.

City-designated crews will forward any necessary maintenance issues to the appropriate team for resolution.

1.4 Permits and Approvals Needed

1.4.1 City of Sacramento (State Lead Agency under CEQA)

The following discretionary actions are required by the City, the designated state lead agency, for project implementation:

- adoption of an environmental document in compliance with the California Environmental Quality Act (CEQA);
- approval of the proposed project; and
- permits for tree removal, grading, or floodplain encroachment within 1,000 feet of the Federal Emergency Management Agency (FEMA)–designated 100-year floodplain. These permits are discussed below.
 - *Tree Permit.* A tree permit will be required if any City Street Trees or Heritage Trees are proposed for removal in accordance with the City tree ordinance (as defined by the City’s Tree Ordinance in Title 12, Chapters 12.56 and 12.64 in the Sacramento City Code).
 - *Grading Permit.* The City’s improvement standards require a grading permit for projects that would displace more than 50 cubic yards of soil material. Grading permits may be issued provided that the conditions contained in Section 15.88.091 are satisfied. Grading activities associated with project development are required to follow the requirements of the City’s Grading, Erosion, and Sediment Control Ordinance (Code 15.88.250) and the Standard Specifications for Public Works Construction (Section 6[6]).
 - *Floodplain Encroachment Permit.* The City’s improvement standards require a floodplain encroachment permit for projects that could affect the 100-year floodplain. Obtaining this permit would require rough and final grading plans and an erosion control plan.

1.4.2 Federal Highway Administration (Federal Lead Agency under NEPA)

The following discretionary actions are required by FHWA, the federal lead agency, for project implementation:

- preparation and approval of environmental documentation in compliance with NEPA;
- approvals as required by the National Historic Preservation Act, Section 106; the federal Endangered Species Act (ESA), Section 7; and the Clean Water Act (CWA), Sections 404 and 401;
- approval of the proposed project; and
- approval of federal funding.

As the state designee for FHWA, Caltrans will provide oversight of technical studies and facilitate coordination between the City and FHWA.

1.4.3 Other Agencies

The following agencies are also expected to use this Initial Study/Mitigated Negative Declaration (IS/MND) for the actions described.

1.4.3.1 Federal Agencies

U.S. ARMY CORPS OF ENGINEERS (USACE)—CWA SECTION 404 PERMIT

The proposed project will require placement of fill in the West Drainage Canal to install the Canal Bridge. RD-1000 requires concrete lining of the canal bottom under the bridge and 10 feet beyond the bridge platform in both directions. In order to meet the RD-1000 requirements, the area under the Canal Bridge will be completely dewatered using two large cofferdams (inflatable dams) placed across the West Drainage Canal during construction. This action will require appropriate Section 404 permitting by USACE.

U.S. FISH AND WILDLIFE SERVICE (USFWS)—ESA SECTION 7 CONSULTATION

The proposed project occurs both inside the Natomas Basin Habitat Conservation Plan (HCP) area (east side of West and Natomas Main Drainage Canals) and outside of the HCP area (west side of West Drainage Canal). Because the project effect area is subject to the provisions of ESA, FHWA will initiate ESA Section 7 consultation with USFWS. Impacts on special-status species in portions of the project effect area within the HCP area have already been mitigated through the HCP Section 10 ESA process. In addition, USACE is involved in Section 7 consultation with USFWS regarding the LNWI that crosses through the proposed project on the north side of I-80 (in both the HCP covered area and the non-HCP covered area). USFWS may concur that FHWA will not be required to compensate a second time for impacts that the LNWI has previously mitigated. Alternatively, USFWS may require mitigation for project-specific impacts under Section 7 of the ESA.

1.4.3.2 State Agencies

CALIFORNIA DEPARTMENT OF FISH AND GAME (DFG)—CALIFORNIA FISH AND GAME CODE SECTION 1602 STREAMBED ALTERATION AGREEMENT

The proposed project will require a Section 1602 streambed alteration agreement from DFG for construction activities that would affect the bed and banks of the West Drainage Canal. The purpose of this permit is to identify measures that must be taken to prevent impacts on wildlife or riparian habitat.

STATE WATER RESOURCES CONTROL BOARD—CWA SECTION 402, STORM WATER POLLUTION PREVENTION PLAN

Under the National Pollutant Discharge Elimination System (NPDES) general storm water permit for construction, a Storm Water Pollution Prevention Plan (SWPPP) will be required. The SWPPP will identify BMPs to be implemented before, during, and after construction in order to reduce pollution in stormwater runoff. The general construction permit also requires regular inspections of erosion and sediment control measures before, during, and after storm events.

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD—CWA SECTION 401 WATER QUALITY CERTIFICATION

In-channel and streambank improvements will need to meet RWQCB requirements for water quality certification pursuant to CWA Section 401.

STATE RECLAMATION BOARD—ENCROACHMENT PERMIT

Alteration of flood protection facilities will require an encroachment permit from the State Reclamation Board. RD-1000 requires concrete lining of the canal bottom under the bridge and 10 feet beyond in both directions. In order to meet the requirements as specified by RD-1000, the area under the Canal Bridge will be completely dewatered using two large cofferdams (inflatable dams) placed across the West Drainage Canal during construction.

CALTRANS—HIGHWAY RIGHT-OF-WAY ENCROACHMENT PERMIT

The extension of the paved roadway surface requires an encroachment permit from Caltrans in accordance with FHWA standards, as applicable to the Strategic Highway System requirements. Encroachment permits may be required for two broad categories of activity: access to the right-of-way (e.g., for preconstruction reconnaissance of the site) and manipulation of operations on the right-of-way (e.g., lane closures). The relevant sections of Caltrans Specific Encroachment Permits, Chapter 500, are Section 513—Construction Contract (Early Entry), Permit Code SC; and Section 517—Traffic Control and Temporary Signals and Signs, Permit Code TK, respectively (Caltrans 2002).

1.4.3.3 Local Agencies

COUNTY OF SACRAMENTO—GRADING PERMIT

The County's improvement standards require a grading permit for projects that would disturb 1 acre or more, or displace more than 350 cubic yards, of soil material. Grading permits may be issued provided that the conditions contained in Section 15.88.091 are satisfied (as defined by the County's Land Grading and Erosion Control Ordinance, Chapter 16.44).

COUNTY OF SACRAMENTO—FLOODPLAIN ENCROACHMENT PERMIT

For construction activities west of the West Drainage Canal, a permit is required for encroachment on lands owned by the County.

This Page Intentionally Left Blank

Chapter 2 Affected Environment, Environmental Consequences, and Mitigation Measures

2.1 Human Environment

This section discusses environmental issues related to Land Use, Utilities/Emergency Services, Traffic and Transportation, Visual/Aesthetics, and Cultural Resources.

As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document.

- Farmlands and Timberlands
- Growth
- Community Impacts and Relocation

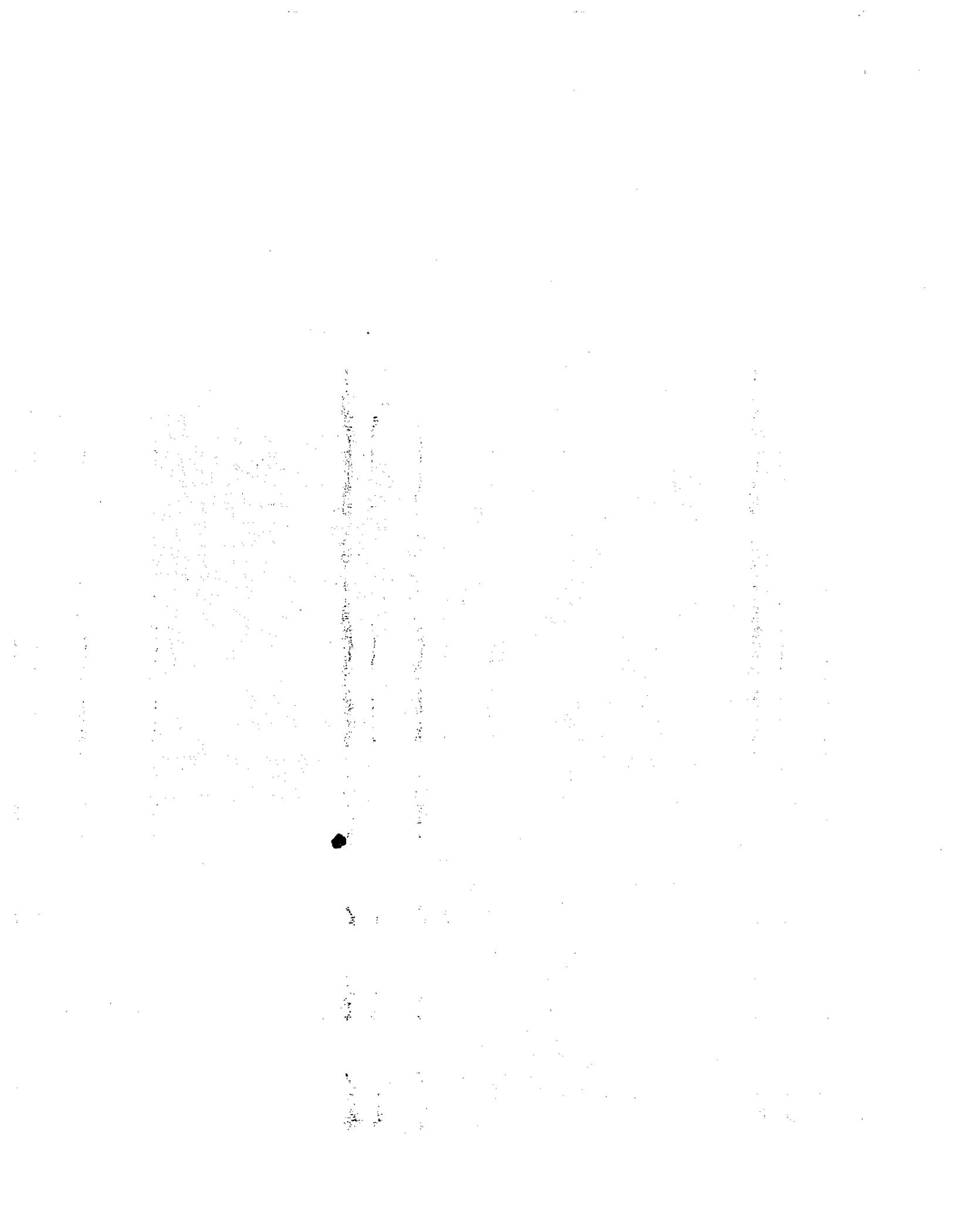
2.1.1 Land Use

2.1.1.1 Existing and Future Land Use

REGULATORY SETTING

The project area comprises several general plan and zoning designations (Figure 2.1-1). The portion of the project area north of I-80 and west of the West Drainage Canal occurs within Sacramento County and is designated for Agricultural Cropland use. The zoning classifications for South Natomas include an overlay of Planned Unit Developments (PUDs) and the designations listed below (City of Sacramento 2003a).

- **R-1A-PUD Single Family Alternative Zone.** This area is bounded by Gateway Oaks Drive to the north, Weald Way to the east, and the Natomas Main Drainage Canal to the west. This zone also consists of the area bounded by I-80 to the north and the Natomas Main Drainage Canal to the east. This is a low- to medium-density residential zone.
- **R-2B-PUD Multi-Family Zone.** This development area is located immediately east of the R-1A-PUD zone and Weald Way, listed above.
- **OB-PUD Office Building Zone.** This area is located north of Gateway Oaks and extends east of the Natomas Main Drainage Canal, buffering both I-5 and I-80 by a minimum of 500 feet. This zone 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 is 35 feet, with no maximum lot coverage.
- **F Flood Zone.** This designation is given to the Natomas Main Drainage Canal south of I-80 and a portion of the East Drainage Canal in North Natomas. This zone permits agricultural uses and other uses subject to special review and approval. It is also considered a parks and open space zone.



Existing Land Uses

South of I-80, existing development east of the Natomas Main Drainage Canal is characterized by a combination of residential and office park land uses within the South Natomas Community Plan area. Low-density residential development is south of Gateway Oaks Drive. Gateway Oaks Drive terminates at the eastern edge of the canal. Presently, there is no development west of the Natomas Main Drainage Canal; however, an application for development of a mix of residential and park uses has been submitted to the City and is currently undergoing environmental review (Johnson pers. comm.).

Agricultural Resources

The Sacramento area is one of the most productive agricultural regions in the world and contains extensive acreage of prime agricultural soils (City of Sacramento 1987). Prime agricultural soils surround the project area. According to the Prime Agricultural Lands Exhibit T-17 from the City of Sacramento General Plan Update Draft EIR, the portions of the project area south of I-80 and east of the West Drainage Canal qualify as prime farmland because of the availability of reliable irrigation water to these areas (City of Sacramento 1987).

ENVIRONMENTAL CONSEQUENCES

For the purposes of this analysis, an impact is considered significant if the project would substantially alter an approved land use plan that would result in a physical change to the environment. Impacts on the physical environment resulting from the proposed project are discussed in subsequent sections of this document.

Impact LU-1: Potential alteration of the present or planned use of an area

Development of the POC bridge would not require a general plan amendment or rezoning. The POC bridge would be a compatible use with existing residential, office, and open space uses in South Natomas and North Natomas. The POC bridge also would link an existing off-street bicycle route in South Natomas to existing on- and off-street bikeways and a city park in North Natomas east of the West Drainage Canal and west of Buchman Circle (APN 225-22-097) (Figure 2.1-1).

Construction of the proposed project could produce short-term impacts on adjacent residential and office park uses from construction activities. Because potential impacts on adjacent uses would be minor and temporary, they are considered less than significant. To lessen these impacts, the mitigation measures below are recommended.

Impact LU-2: Potential effects on agricultural resources or operation

As described previously, the proposed project entails construction of a bicycle and pedestrian overcrossing to connect existing and proposed trails. The south connection point is located in South Natomas near the terminus of Gateway Oaks Drive and near the east levee of the Natomas Main Drainage Canal. It would elevate approximately 20 feet across I-80 and touch down at the north connection point on the west levee bank of the West Drainage Canal in North Natomas, where a second bridge (the Canal Bridge) would connect to the east levee bank of the West Drainage Canal and connect with the bicycle trail.

The proposed project would not significantly affect surrounding farmland, as minimal new right-of-way on farmland would be required to place concrete abutments and columns on driven piles, and to construct the embankment on the northwest side of the project site. The potential impact on agricultural resources would be less than significant.

proper installation of the electrical appurtenances and foundations. Excavating shall not be performed until immediately before installation of conduit and other appliances.

2.1.2.2 Affected Environment

WATER SUPPLY/TREATMENT

The City of Sacramento currently provides water service from a combination of surface and groundwater sources. The area south of the American River is served by surface water from the American and Sacramento rivers. The City also pumps groundwater to areas north of the American River. A small portion of the South Natomas area is within the Swallows Nest Water Maintenance District and is supplied by wells. The City operates three diversion and treatment facilities: the Sacramento River, the American River, and the Riverside water treatments plants; and four storage tanks, each with a three million gallon capacity. (City of Sacramento, 1987).

SEWER SYSTEM

The City of Sacramento, including the project area, is serviced by the Sacramento Regional County Sanitation District (SRCSD) (City of Sacramento, 1987). The SRCSD is responsible for the operation of all regional interceptors and wastewater treatment plants. The Regional Plant has an existing capacity of approximately 150 million gallons per day (mgd) of dry weather flow and 300 mgd of wet weather flow. The plant discharges effluent subjected to secondary treatment into the Sacramento River downstream from City of Sacramento domestic water supplies.

STORMWATER DRAINAGE

The stormwater drainage system of the City is a complex network of natural channels, canals, levees, subsurface drains, and pumping systems. All drainage is ultimately discharged to the American and Sacramento rivers. The East and West Drainage Canals flow through the project area.

SOLID WASTE

The City of Sacramento Solid Waste Division collects most solid waste generated in the City and disposes of it in the Kiefer Landfill.

2.1.2.3 Environmental Consequences

The POC project would not require any additional gas supply. Limited additional electrical supplies would be necessary for the proposed lighting along the POC. The proposed project may require the relocation of gas and electrical lines. Relocation of private utilities would be the responsibility of the utility companies themselves. Detailed project plans would be forwarded to affected utility companies for use in planning the relocation of their facilities, if necessary.

The project would require the consumption of fossil fuels during construction. Construction equipment would be maintained and tuned at the interval recommended by the manufacturers to ensure efficient use of fuel (see mitigation measures under "Air Quality" for additional information).

Implementation of the project is already subject to Standard Specifications for Public Works Construction (2007) (Section 34 (2)) related to the protection of existing improvements, maintaining existing electrical facilities, and excavating and backfilling. These standard specifications would ensure that the project would have a less-than-significant impact on power and natural gas, non-renewable resources, the demand of existing sources of energy, or the development of new sources of energy.

The proposed project would not result in the need for new communications systems, as these systems are not proposed for the bicycle-pedestrian overcrossing project.

The proposed project would not impact local or regional water supplies. The project design and proposed BMPs would treat stormwater runoff prior to entering local or regional water supplies. Potential contamination of water supplies as a result of gas leaks and spills from construction vehicles would be increased during project construction. However, this would not be considered significant because of the BMPs and stormwater treatment proposed as part of the project.

The proposed project would not result in the need for drinking water or landscaping irrigation facilities, as no connection to the city's water system is proposed as a component of the project.

The proposed project would not result in the need for septic or sewer facilities and none are proposed as a component of the project.

The proposed project would not result in impacts on stormwater drainage patterns, as project design and proposed BMPs would treat stormwater runoff (see mitigation measures under "Geology, Soils, and Seismicity" for additional information).

The proposed project would not result in impacts on existing solid waste disposal services or facilities, or the need for any new solid waste disposal facilities. No solid waste, except that associated with construction activities, is expected to be generated as a result of the proposed project. Waste associated with construction activities would be disposed of by the City of Sacramento Solid Waste Division.

CUMULATIVE IMPACTS

There are no cumulative impacts on utilities or emergency services associated with this project.

2.1.2.4 Mitigation Measures

No mitigation is required. Standard construction BMPs will reduce any impacts on utilities that may result from construction activities.

2.1.3 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.1.3.1 Regulatory Setting

An impact is considered significant for roadways or intersections when the project causes the facility to change from Level of Service (LOS) C or better to LOS D or worse. For facilities that are, or will be worse than LOS C without the project, an impact is also considered significant if the project: 1) increases the average delay by 5 seconds or more at an intersection, or 2) increases the volume to capacity ratio by .02 or more on a roadway.

Bikeways. An impact is considered significant if implementation of the project will disrupt or interfere with existing or planned (Bicycle Master Plan) bicycle or pedestrian facilities.

Regional Transit. An impact is considered significant if the project will cause transit boardings to increase beyond the crush load of a transit vehicle or if the project will cause a 10% or greater increase in travel time along any route.

Parking. A significant impact on parking would occur if the anticipated parking demand of the project exceeds the available or planned parking supply.

2.1.3.2 Affected Environment

REGIONAL SETTING

The project site is located in the northwestern area of the city of Sacramento. Regional access to the project area is provided via I-80 and I-5; The I-80 and I-5 interchange is located approximately one-third mile northeast of the project site.

Roads

Major streets in the vicinity include San Juan Road, El Centro Road, and West El Camino Avenue. Local streets in the project area include Gateway Oaks Drive, Buchman Circle, Guadalajara Way, and Tintorrera Way. The project site is accessible by automobile from Buchman Circle to the north and Gateway Oaks Drive to the south.

Public Transportation

The Sacramento Regional Transit (RT) District is the major public transportation service provider within Sacramento County, providing 20 miles of light rail service and fixed-route bus service on 65 routes. Bus route #88 uses West El Camino Avenue and bus route 89, a peak-only route, includes service to Gateway Oaks Drive. Many of the bus routes and light rail service are currently oriented to the downtown area. The light rail station nearest the project site is the Arden/Del Paso Station, located approximately 3.5 miles to the southeast.

Bikeways

A bike lane is designated along West El Camino Avenue in the Bikeway Master Plan. This bike lane is proposed within the project area and would extend along West El Camino Avenue from Truxel Road over I-80. There are currently no striped bike lanes along West El Camino Avenue within the project area.

Parking

No parking would be allowed on the pedestrian overcrossing; parking is allowed along some segments of Gateway Oaks Drive and Buchman Circle.

2.1.3.3 Environmental Consequences

The proposed project does not include any design features that would result in a substantial increase in the number of vehicle trips, a substantial increase in the volume-to-capacity ratio on nearby roads, or an exceedance of a LOS standard during operations. The proposed project provides a crucial link in the Natomas Main Drainage Canal trail system by constructing a dedicated POC over I-80 to connect the existing trail on the south side of I-80 with a planned segment on the north side. It is possible that bicycle and pedestrian traffic at nearby intersections will increase following project construction, but this impact would be less than significant because the project is intended to compliment these modes of travel, their volumes are light in comparison with existing vehicular traffic in the area, and these increases are not anticipated to significantly impact the LOS at area intersections.

During construction, the movement of crews, equipment, and material would result in temporary increases in traffic on the surrounding roadways. The additional traffic would be minor compared to the existing daily and peak-hour traffic volumes on the local roadways. It is not anticipated that periodic

short-term lane closures or detours would be necessary. The increased vehicle trips during project construction and bicycle and pedestrian use of the POC would be less than significant.

The proposed project does not include design features that would result in hazardous traffic conditions and would not increase hazards for motorists, bicyclists, or pedestrians. The two ramps providing access to the POC would be ADA-compliant, which would decrease the possibility of hazards associated with ramp curves and gradient. The proposed project is intended to create a safer route for bicyclists and pedestrians to take for commute or recreational trips in the project area.

During construction and operation of the project, it is not anticipated that the blockage of any lanes, residential or commercial/office properties would occur. Four possible staging areas have been identified on existing City or County properties or City-held easements (see Chapter 1, Proposed Project, Section 1.3.1) in the project area. Emergency access to adjacent properties would not be impeded during construction since the construction staging areas are proposed to be within existing City or County properties or City-held easements and would not block or prohibit access to surrounding properties.

Following project completion, the improvements made would have a beneficial impact in terms of safety on pedestrians and bicyclists in the area by providing designated bike/pedestrian paths, raised overcrossings, and safety/security lighting.

The proposed project would have a less-than-significant impact.

CUMULATIVE IMPACTS

There are no cumulative impacts on traffic and transportation associated with this project.

2.1.3.4 Mitigation Measures

The project would have a less-than-significant impact on traffic and transportation services. No mitigation is necessary.

2.1.4 Visual/Aesthetics

2.1.4.1 Methodology and Approach

The term *aesthetics* typically refers to the perceived visual impression of an area, such as a scenic view, open space, or feature of architectural interest. The aesthetic value of an area is a measure of its *visual character* and *visual quality* combined with *viewer response* (FHWA 1983). This combination may be affected by the components of a project (e.g., buildings constructed at a height that obstructs views, hillsides cut and graded, or open space changed to an urban setting), as well as by changing elements, such as light, weather, and the length and frequency of viewer exposure to the setting. Aesthetic impacts thus are defined as changes in viewer response as a result of project construction and operation.

VISUAL CHARACTER

Visual character is the appearance of the physical form of the landscape, composed of natural and human-made elements, including topography, water, vegetation, structures, roads, infrastructure, and utilities; and the relationships of these elements in terms of form, line, color, and texture.

VISUAL QUALITY

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity as modified by its visual sensitivity.

- *Vividness* is the visual power or memorability of landscape components as they combine in striking or distinctive visual patterns.
- *Intactness* is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, as well as in natural settings.
- *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the artificial landscape. (FHWA 1983.)

High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

VIEWER RESPONSE

Viewer response is the psychological reaction of a person to visible changes in the viewshed. A *viewshed* is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (FHWA 1983). The measure of the quality of a view must be tempered with the overall sensitivity of the viewer and viewer response. Viewer sensitivity is dependent on the number and type of viewers and the frequency (e.g., daily or seasonally) and duration of views (i.e., how long a scene is viewed). Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and the viewing duration.

AESTHETIC ASSESSMENT PROCESS

The concepts presented above are combined in a visual impact assessment process that involves identification of the following:

- visual character and quality of the project area,
- relevant policies and concerns for protection of visual resources,
- general visibility of the project area and site using descriptions and photographs, and
- viewer response and potential impacts.

2.1.4.2 Regulatory Setting

SACRAMENTO CITY CODE

Title 12 (*Streets, Sidewalks and Public Places*) of the Sacramento City Code contains chapters that may apply to the proposed project and aesthetic resources. These include, but are not limited to, Chapter 12.56—Trees Generally and Chapter 12.64—Heritage Trees.

SACRAMENTO GENERAL PLAN

The following policies from the Sacramento General Plan (City of Sacramento 2007, 2004) apply to the proposed project.

Land Use and Urban Design (2007)

LU 2.3.1 Multi-Functional Green Infrastructure. The City shall strive to create a comprehensive and integrated system of parks, open spaces, and urban forests associated with its neighborhoods, centers, riparian corridors, wetlands, agricultural lands, and utility corridors that provides a “green” network that frames and complements the city’s urban areas and serves as visual a amenity, recreational resource, environmental asset, and natural infrastructure.

LU 2.3.2 Adjacent Development. The City shall require that development adjacent to parks and open spaces complements and benefits from this proximity by:

- Preserving physical and visual access;
- Requiring development to front, rather than back, onto these areas;
- Using single-loaded streets along the edge to define and accommodate public access;
- Providing pedestrian and multi-use trails;
- Augmenting non-accessible habitat areas with adjoining functional parkland; and
- Extending streets perpendicular to parks and open space and not closing off visual and/or physical access with development.

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

LU 6.1.11 Enhanced Pedestrian Environment. The City shall promote the transformation of existing automobile-dominated corridors into boulevards that are attractive, comfortable, and safe for pedestrians by incorporating:

- Wider sidewalks;
- On-street parking between sidewalk and travel lanes;
- Fewer curb cuts and driveways;
- Enhanced pedestrian street crossings;
- Building entrances oriented to the street;
- Transparent ground floor frontages;
- Street trees;
- Streetscape furnishings; and
- Pedestrian-scaled lighting and signage.

Aesthetic Resources (2007)

ER 7.1.1 Protect and Enhance Scenic Views. The City shall protect and enhance views from public places to the Sacramento and American Rivers, adjacent greenways, landmarks, and urban views of the downtown skyline and the State Capitol along Capital Mall.

Public Facilities and Services Element (2004)

Goal E—Design public facilities in such a manner as to ensure safety and attractiveness. Utilities and related infrastructure should be designed and constructed in a manner to prevent possible visual blight and ensure safety to Sacramento residents. The City should continue to support and encourage the construction of utility lines underground and provide safe, attractive infrastructure. Existing and newly constructed infrastructure should be maintained.

2.1.4.3 Affected Environment

The aesthetic environment surrounding the proposed project area is characterized by typical views of freeways and streets, and office park/highway commercial, open space, and agricultural land uses, with some light commercial and residential uses. There are no unique or visually outstanding manmade features within the project area.

The Natomas Main Drainage Canal is a marginally valuable natural scenic resource, although it is not a major defining element in the landscape of the project area. The tree and vegetative cover along the Natomas Main Drainage Canal is an important visual element in the project area, as few tall structures and topographic features add vertical stratification.

2.1.4.4 Environmental Consequences

Impact AES-1: Substantially change scenic resources

Construction of the proposed project would create temporary changes in views of and from the project area. Construction activities would introduce considerable heavy equipment and associated vehicles, including dozers, graders, scrapers, and trucks, into the viewshed of I-80, public roadways, and residential and business properties. Construction signage would also be a visible element. Construction is expected to require from 10 to 12 months. Residents and businesses would experience a short-term change in the visual character of the area near their respective locations through construction staging and construction activities. Because construction is a very typical element within the growing Natomas area and since visual changes due to construction will be temporary, this impact is considered less than significant.

Impact AES-2: Degrade visual character in project area

The project area is typified by open space and agricultural views. However, views to the northwest, east, and southeast of the site include single-family residences and office park uses, and highway views of I-80, which the POC structure would cross. The proposed area, including land designated for agricultural use, is designated for future urban development, as described in the land use section. The POC would provide opportunities for future users of the trail system, including residents of South and North Natomas, to benefit from visual resources (e.g., views of current open space land and of the Natomas Main Drainage Canal). The POC would not alter the existing visual character for viewer groups in the project area because freeway interchanges, and their associated bridges and infrastructure, are common visual

elements in the project vicinity. The proposed project would not result in demonstrable negative aesthetic effects; instead, it is arguable that the proposed project would result in positive aesthetic affects. Additionally, the proposed project would not affect a scenic vista or adopted view corridor, as no areas within the roadway corridor are designated as such. These impacts are considered less than significant.

Impact AES-3: Create a new source of light and glare which would adversely affect views

Lighting of the POC structure will be Caltrans standard fluorescent fixtures fixed on the overhang of the POC fence. Lighting for the proposed pathway will be based on City standard streetlights. Although this lighting would create additional light, the lights will be designed and directed to minimize glare for people within surrounding land uses and for drivers on I-80. Furthermore, existing lighting is already present in the project area from I-80 and adjacent development, and the proposed additional lighting would be negligible. The project POC would create shadows on adjacent properties because it is planned to rise to approximately 20 feet in height as it crosses over I-80. The shadows from the north- to south-trending bridge would generally fall on either side of the bridge, depending on the time of day. The shadows created by the POC would not shade a recognized public gathering place (e.g., a park) as none currently exist in the area adjacent to the elevated overcrossing. The POC also would not place residences or child care centers in complete shade because none exist immediately adjacent to the project site, or they are located sufficiently distant to be unaffected by shadows from the raised portion of the POC. The new shadows created by the POC would affect traffic along I-80 but are expected to be similar to shadows from existing roadway overcrossings common to the I-80 corridor and are considered less-than-significant effects.

The proposed project is anticipated to result in less-than-significant impacts associated with light, glare, or the creation of shadows on adjacent property.

CUMULATIVE IMPACTS

There are no cumulative impacts related to the visual character of the area associated with the project.

2.1.4.5 Mitigation Measures

No mitigation is required.

2.1.5 Cultural Resources

For the purposes of this document, the information described within this section is taken from the 2004 Historic Resources Evaluation Report (HRER) prepared for this project and the 2008 Natomas Interstate 80 Bicycle and Pedestrian Overcrossing Finding of Effects (FOE) document prepared by Jones & Stokes (2008) for this project. The 2004 HRER notes that the segments of the Natomas Main, East, and West Drainage Canals retained integrity of location, design, and materials.

2.1.5.1 Regulatory Setting

Under federal law, the criteria of adverse effect are set forth by the Advisory Council on Historic Preservation (ACHP) in its implementing regulations, 36 CFR Part 800 (revised January 11, 2001). As codified in 36 CFR Part 800.4(d)(2), if historic properties may be affected by a federal undertaking, the agency official shall assess adverse effects, if any, in accordance with the criteria of adverse effect. The criteria of adverse effect (36 CFR 800.5 [a][1]) read:

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the [NRHP] in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the [NRHP]. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

36 CFR 800.5 (a)(2) reads:

Adverse effects on historic properties include, but are not limited to:

- (i) Physical destruction of or damage to all or part of the property;
- (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the [secretary of the interior's] Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- (iii) Removal of the property from its historic location;
- (iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- (v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- (vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- (vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

2.1.5.2 Affected Environment

In 1911, the State of California established a State Reclamation Board and subsequently proposed the construction of levees, weirs, and bypasses along the Sacramento River. Shortly thereafter, new reclamation districts came into existence, such as RD 1000, through which the proposed project passes. When the Natomas Corp. founded RD 1000, the entity owned 80% of the 55,000-acre district. By 1939, the district comprised three district-perimeter levees (the East, River, and Cross Canal Levees), three exterior drainage canals (the Natomas East Main Drainage, Pleasant Grove, and Cross Canals), three pumping plants, and numerous interior canals. In 1936, passage of the federal Flood Control Act increased federal participation in reclamation projects, and 20 years later the management of the district was turned over to individual landowners. The establishment of RD 1000 eventually allowed for land to be drained and the area (known as Natomas) to be settled.

The Natomas Main Drainage Canal is part of RD 1000's historic drainage system, which was designed to protect the American River Basin from flooding and to facilitate land reclamation. The earth-lined Natomas Main Drainage Canal, East Drainage Canal, and West Drainage Canal were three of four branches of the interior drainage canals that drained RD 1000 land and carried water to the main pumping plant (Plant Number 1). The Natomas Main Drainage Canal is formed by the intersection of the East and West Drainage Canals. Comparable in overall design and construction, the segments of the East and West Drainage Canals are approximately 112 feet in top width, with the Natomas Main Drainage Canal segment extending approximately 130 feet (the confluence of the three canals is within the project area). Bottom width was not discernible because of the presence of water in the segments. The banks of the canals were graded recently. Vegetation is located along the east and west banks of the Main Drainage Canal segment. I-80 bisects the project area and crosses the waterway via a concrete box culvert. Fallow agricultural fields are located west of and adjacent to the canal segments. Modern residences are constructed adjacent to and north of the West and East Drainage Canal segments. Modern three-story commercial and residential construction is located adjacent to the Natomas Main Drainage Canal and south of I-80. The introduction of the modern elements as well as I-80 gives the area an urban feeling.

Dames & Moore conducted a previous inventory and evaluation of RD 1000 for USACE, Sacramento District, in December 1995. The survey population in the Area of Potential Effects (APE) for the current study, as opposed to Dames & Moore's 1995 inventory and evaluation, is composed of a segment of the West Drainage Canal, as well as its confluence with the East and Natomas Main Drainage Canals. The water conveyance structures were determined previously to be eligible for listing in the National Register of Historic Places (NRHP) as contributing features of the RD 1000 Rural Historic Landscape District. It should be noted that the timeline suggests that the State Historic Preservation Office (SHPO) reviewed a draft report submitted by USACE that was finalized between September 1994 and December 1995. The USACE report made no eligibility determination pursuant to CEQA. In 2004, cultural resources staff at Jones & Stokes completed an HRER, which evaluated the resource for potential significance under CEQA, considered the NRHP status of the canals, and found that the properties within the APE associated with RD 1000 are historical resources under CEQA and remained contributors to the NRHP-eligible historic district (Bowen 2004).

As described in a 1994 SHPO letter (Widell pers. comm.), the character-defining features are broken into three main groups: the drainage system, the road system, and large-scale land patterns. The drainage system encompasses the primary canals, levees, pumping plants, and ditches within the areas of contributing large-scale land patterns. The road system includes many local jurisdictional roads within the boundaries of the RD 1000 Rural Historic Landscape District, as well as right-of-way roads within fields in the areas of contributing large-scale land patterns. Finally, the large-scale land patterns are those composed of open fields formed by the intersection of the canals and roads in the areas generally north of modern I-80.

Given the size and complexity of the RD 1000 Rural Historic Landscape District, as well as the number of years since the Dames & Moore 1995 evaluation, contributing and noncontributing features of the district are now less clearly defined.

The I-80 POC project area is located within lands formerly used for agricultural activities and increasingly converted to transportation, residential, and commercial development. Grading, cutting, and filling along existing roadways (primarily I-80) and graded road margins, trenching for utilities, and other construction activities have resulted in substantial surface and subsurface ground disturbance throughout the project area. Intensive mechanized agriculture has caused further ground disturbance in the area.

The project segment of the I-80 POC passes over segments of the Natomas Main, East, and West Drainage Canals, which are contributing components of the NRHP-eligible RD 1000 Rural Historic

Landscape District. Contributing features of the District include the drainage system itself, of which the Natomas Main, East, and West Drainage Canals are principal components, and “large scale land patterns” that exhibit the qualities of a rural historic landscape at the beginning of the 20th century (the period of historical significance for the District).

Review of records available at the North Central Information Center of the California Historical Resources Information System (CHRIS) at California State University, Sacramento, as well as other sources specified in the Archaeological Survey Report (ASR) (Jones & Stokes 2004) and the HRER, did not identify any other previously recorded prehistoric or historic resources within the project APE. According to these records, portions of the project APE have been previously surveyed for cultural resources. Intensive archaeological field survey of the entire project APE did not identify any new cultural resources within the project APE. The portions of the Natomas Main, East, and West Drainage Canals within the project APE were recorded on a Department of Parks and Recreation (DPR) site record form set, which is included in Appendix A of the HRER (Bowen 2004).

The Natomas Main, East, and West Drainage Canals retain significance within the RD 1000 Rural Historic Landscape District as original components of the drainage system. They were identified as contributing components to the district because their location, materials, and design (function within the drainage system) remain unchanged from the District’s period of significance (1911–1939). The land north of I-80 and surrounding the north half of the I-80 POC of the Natomas Main, East, and West Drainage Canals is designated (as of 1994) as a contributing component of the District. The land south of I-80 and surrounding the south half of the I-80 POC of the Natomas Main Drainage Canal, on the other hand, is designated as a noncontributing component of the District because it has lost the rural character of the District’s period of significance.

2.1.5.3 Environmental Consequences

Impact CUL-1: Cause a substantial adverse change in significance of a historic resource

The proposed project has the potential to affect the historic property known as the RD 1000 Rural Historic Landscape District. Caltrans has determined that only criterion “v” above applies to the proposed project. The bicycle and POC, as well as the Canal Bridge, would present a visual change within the proposed APE at the southern boundary of the RD 1000 Rural Historic Landscape District. The proposed structure over I-80 would extend approximately 33 feet above grade.

The proposed project would not result in the physical destruction, alteration, or removal of segments of the Natomas Main, East, or West Drainage Canals (criteria “i,” “ii,” and “iii” above), which are the only contributing features of the RD 1000 Rural Historic Landscape District within the APE for the proposed project. Similarly, the segments of the Natomas Main, East, and West Drainage Canals would continue to be used as water conveyance structures and would not be neglected, transferred, leased, or sold as a result of the proposed undertaking (criteria “iv,” “vi,” and “vii” above).

As a bicycle and pedestrian improvement project, the project would not be likely to introduce atmospheric or audible elements (criterion “v” above); however, if the noise level were to increase, it would not result in an adverse effect on the property’s historically significant features. The proposed project has the potential to introduce a visual element that might affect the integrity of the setting of the historic property, which also falls under criterion “v” above. According to the 1995 evaluations that established the NRHP eligibility of RD 1000, the historic property derives its significance from its association with reclamation and flood control within the Sacramento River Basin and Sacramento Flood Control Project. RD 1000, as it existed in 1995, was “an open rural landscape that consisted of levees, canals, and roads intersecting to form large blocks of fields” (Bradley and Corbett 1995). Although the proposed project would represent

a change to features at the established southern boundary of the district, the project would not change the character of physical features within the property's setting that currently contribute to its historic significance. Therefore, relative to criterion "iv" above, the proposed project would not result in an adverse effect on the historic property.

Although the overcrossing structures would be located over segments of the Natomas Main, East, and West Drainage Canals, this would not represent an adverse effect on historic structures. With regard to criterion "v," the alternative would introduce new visual elements at the southern boundary of the property. These elements would include two new POC structures. Although they would be near the historic structures and within the boundary of the RD 1000 Rural Historic Landscape District, these new elements would be located at the very edge of the boundary of the historic property and would be of comparable (or lesser) scale and size to that of the adjacent existing highway signage and the I-80/I-5 interchange. These new elements would not physically alter contributing elements of the segments of the Natomas Main, East, and West Drainage Canals or the RD 1000 Rural Historic Landscape District. The area proposed for the overcrossing structures is not within the primary viewshed of the district. Given the nature and function of the historic district, any extant contributing elements of RD 1000 would be viewed most appropriately from areas well outside the proposed project area, where less modern residential, commercial, and agricultural development is present. Therefore, the new overcrossing structures would not obstruct the primary views of the existing contributing features of RD 1000.

Under this proposed project, the majority of physical aspects of integrity—including the location, design, materials, and workmanship of the segments of the Natomas Main, East, and West Drainage Canals—would remain much as they were in 2004. Approximately 30 feet along the bottom of the West Drainage Canal (under the new at-grade pedestrian bridge) would be lined with concrete under the proposed project. The structures' feeling and association as early 20th-century engineering features tied to RD 1000 would not be altered as a result of any changes brought about under this specific project. Although the site's setting might be altered somewhat by the introduction of new visual elements of the proposed project, the majority of these elements would be comparable in size and scale to those already in existence. Only the I-80 overcrossing portion of the proposed project appears to feature elements that have the potential to alter the existing viewshed to any notable degree. On balance, the proposed structure would be located along the boundary (I-80) that, as early as 1996, separated much of the noncontributing areas of RD 1000 from those that contributed to the historic property.

In summary, because the introduction of these new physical and visual elements would not diminish the seven aspects of integrity (location, design, setting, materials, workmanship, feeling, and association) of the historic property to a level at which the property would fail to convey its significance, the proposed project would have no adverse effect on the RD 1000 Rural Historic Landscape District.

CUMULATIVE IMPACTS

There are no cumulative impacts on cultural resources associated with this project.

2.1.5.4 Mitigation Measures

Caltrans, as assigned by the FHWA, has applied the criteria of adverse effect and determined that the undertaking would have no adverse effect on historic properties pursuant to Stipulation X.B.1 of the Programmatic Agreement (PA). In accordance with 36 CFR 800.5(c) and Stipulation X.B.1.a. of the PA, Caltrans requested the SHPO's concurrence with this finding in January 2008. On March 24, 2008, a letter of concurrence for the finding of no adverse effect was forwarded was sent to Caltrans by SHPO (Appendix E). No additional mitigation is necessary.

This Page Intentionally Left Blank

2.2 Physical Environment

This section examines potential impacts on the human environment that may result from implementation of the proposed project.

2.2.1 Hydrology, Water Quality, Stormwater, and Runoff

2.2.1.1 Regulatory Setting

In order to maintain high quality, it is imperative to reduce sedimentation and erosion into the tributaries. The City of Sacramento General Plan Update Draft EIR includes a number of precautionary construction measures aimed at maintaining water quality within the City. These measures include: minimizing surface disturbance as much as possible; placing mulch and reseeding/revegetating disturbed areas; enforcing strict onsite soil handling rules; collection and removal of pollutants such as petroleum products from the job site; maintaining riparian vegetation to the maximum extent feasible; using appropriate sanitation to avoid bacterial and nutrient contamination; and preparation of a spill prevention plan in the event of an accidental materials spill (City of Sacramento 1987).

The Central Valley RWQCB has primary responsibility for protecting the quality of surface- and groundwaters within the City. The RWQCB's efforts are generally focused on preventing either the introduction of new pollutants or an increase in the discharge of existing pollutants into bodies of water that fall under its jurisdiction. The proximity of the Sacramento and American Rivers to the project site and the existence of both a shallow water table and deep aquifer beneath the area keep the RWQCB interested in activities in the area.

The City has obtained a NPDES permit from the State Water Resources Control Board under the requirements of the Environmental Protection Agency (EPA) and Section 402 of the CWA. The goal of the permit is to reduce pollutants found in urban storm runoff. The general permit requires the permittee to employ BMPs before, during, and after construction. The primary objective of the BMPs is to reduce non-point source pollution into waterways. These practices include structural and source control measures for residential and commercial areas, and BMPs for construction sites. BMP mechanisms minimize erosion and sedimentation, and prevent pollutants such as oil and grease from entering the stormwater drains.

Components of BMPs include:

- maintenance of structures and roads;
- flood control management;
- comprehensive development plans;
- grading, erosion and sediment control ordinances;
- inspection and enforcement procedures;
- educational programs for toxic material management;
- reduction of pesticide use; and

- site-specific structural and non-structural control measures.

2.2.1.2 Affected Environment

Flooding. FEMA publishes Flood Insurance Rate Maps (FIRM) that delineate flood hazard zones for communities. The project site is designated as an “A” flood zone area inundated by 100-year flooding.

Surface/Groundwater. The aquifer system underlying the City is part of the larger Central Valley groundwater basin. The Sacramento, American, and Cosumnes Rivers are the main surface water tributaries that drain much of Sacramento and recharge the aquifer system. In the northern portion of the City, where the proposed project is located, other smaller tributaries include the East Drainage Canal and West Drainage Canal, which connect south of the project to form the Main Drainage Canal. Surface inflows to the east of the City Limits, and deep percolation of precipitation and surface water applied to irrigated crop land, recharge the aquifer system. Groundwater is depleted by pumped extractions of groundwater for municipal, industrial, and agricultural purposes. Groundwater levels in the Sacramento area have been declining since 1940. The pattern of pumping has continued over the years, and the current rate of decline is about 1.5 feet per year (City of Sacramento 1987).

Water Quality. The City’s municipal water is received from the American and Sacramento Rivers. The water quality of the American River is considered very good. The Sacramento River water is considered to be of good quality also, although higher sediment loads and extensive irrigated agriculture upstream of Sacramento tends to degrade the water quality. During the spring and fall, irrigation tailwaters are discharged into drainage canals that flow to the river. In the winter, runoff flows over these same areas. In both instances, flows are highly turbid and introduce large amounts of herbicides and pesticides into the drainage canals, particularly rice field herbicides in May and June. The aesthetic quality of the river is changed from relatively clear to turbid from irrigation discharges.

Water quality of the drainage tributaries is also affected by other pollutants, such as runoff from urban storm drains and illegal dumping at creeks and drainageways (City of Sacramento 1987).

2.2.1.3 Environmental Consequences

For the purposes of this analysis, an impact is considered significant if the project would substantially impact water quality, interfere with groundwater quality, significantly alter drainage or runoff patterns, or introduce flooding hazards.

Impact HYD-1: Potential alteration of existing drainage patterns or absorption rates

The proposed project would not result in substantial changes to absorption rates, drainage patterns, or the rate and amount of surface runoff. The proposed overcrossing structure would result in the creation of minimal additional impervious surface. Additionally, drainage from the structure will be carried through open channel curbing and collected by small culverts at each end of the bridge. These culverts will carry any surface water away from the structure and into the natural drainages of the canal. The presence of the bridge structures will not produce appreciable changes in the existing amount of surface runoff. The proposed project would have a less-than-significant impact on absorption rates, drainage patterns, or the rate and amount of surface runoff.

Impact HYD-2: Potential to increase flooding hazards

The project area is located within Special Flood Hazard Area (SFHA) Zone "A". Zone "A" is defined by FEMA's National Flood Insurance Program (NFIP) as an area inundated by 100-year flooding, for which no Base Flood Elevations (BFEs) have been determined. The proposed project would not create additional risk because the POC would span the West Drainage Canal with abutments placed on the existing canal levees. Impacts from exposure of people or property to water-related hazards such as flooding would be less than significant.

Impact HYD-3: Potential impacts on water quality

Construction-related activities have the potential to impact water quality. The release of sediments, fuel, oil, grease, solvents, concrete wash, and other chemicals used in construction activities could impact water quality if allowed to enter the East or West Drainage Canals.

The majority of the project area is level and, as discussed in Section 1.3, long-term erosion and sedimentation will be controlled by hydroseeding with native dryland grasses and typical highway median grass cover. Potential for erosion due to surface water flow would be primarily limited to embankment slopes and areas disturbed by grading during construction.

Sedimentation controls would be implemented in order to lessen the potential for water quality impacts. The POC project would be required to comply with the City of Sacramento Code, Ordinance 15.88.250, Erosion and Sediment Control, and the Standard Specifications for Public Works Construction. Additionally, the construction of the POC would be coordinated with the California DFG, the Central Valley RWQCB, and the USACE.

Therefore, the proposed project is anticipated to have a less-than-significant impact on surface waters, changes in currents, or the course or direction of water movements.

Impact HYD-4: Potential to deplete or interfere with groundwater supplies and recharge

No change in the quantity or quality of ground waters, either through direct additions or withdrawal, or through interception of an aquifer by cuts or excavations, or through substantial loss of groundwater recharge capability is expected to result from the proposed POC project. Therefore, the proposed project would have a less-than-significant impact on ground water quantity, direction or rate of flow, or quality.

CUMULATIVE IMPACTS

There are no cumulative impacts on existing and future land uses for hydrology and water quality associated with this project.

2.2.1.4 Mitigation Measures

The proposed project would have no impact on flooding, stormwater runoff, or water quality. No mitigation is necessary.

2.2.2 Geology, Soil, and Seismicity

2.2.2.1 Regulatory Setting

FEDERAL REGULATIONS

Clean Water Act 402/National Pollutant Discharge Elimination System

The CWA is discussed in detail in Section 2.2.1, “Hydrology, Water Quality, Stormwater, and Runoff.” However, because CWA 402 is directly relevant to excavation and grading, additional information is provided below.

Amendments in 1987 to the CWA added Section 402p, which establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES program. The EPA has delegated to the State Water Resources Control Board (SWRCB) the authority for the NPDES program in California, which is implemented by the state’s nine RWQCBs. Under the NPDES Phase II Rule, construction activity disturbing 1 acre or more must obtain coverage under the state’s General Permit for Discharges of Storm Water Associated with Construction Activity (General Construction Permit). Proponents of specific projects that would disturb one or more acres will be required to obtain a General Construction Permit, prepare a Notice of Intent and a SWPPP, and implement and maintain BMPs to avoid adverse effects on water quality as a result of construction activities, including earthwork.

STATE REGULATIONS

Alquist-Priolo Earthquake Fault Zoning Act

California’s Alquist-Priolo Act (PRC 2621 et seq.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (Earthquake Fault Zones). It also defines criteria for identifying active faults, giving legal weight to terms such as “active,” and establishes a process for reviewing building proposals in and adjacent to Earthquake Fault Zones.

Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are “sufficiently active” and “well-defined.” A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for the purposes of the act as within the last 11,000 years). A fault is considered well-defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment (Hart and Bryant 1997).

Seismic Hazards Mapping Act

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards; and cities and counties are required to

regulate development within mapped Seismic Hazard Zones. At the present time, the state has mapped only Alameda, Los Angeles, Orange, San Francisco, and Ventura Counties.

California Building Standards Code

The State of California's minimum standards for structural design and construction are given in the California Building Standards Code (CBSC) (CCR Title 24). The CBSC is based on the Uniform Building Code (UBC) (International Conference of Building Officials 1997), which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for California conditions with numerous, more detailed or more stringent regulations. The CBSC provides standards for various aspects of construction, including (i.e., not limited to) excavation, grading, and earthwork construction; fills and embankments; expansive soils; foundation investigations; and liquefaction potential and soil strength loss. In accordance with California law, proponents of specific projects would be required to comply with all provisions of the CBSC for certain aspects of design and construction.

Caltrans Seismic Design Criteria

The California Department of Transportation (Caltrans) has Seismic Design Criteria (SDC), which is an encyclopedia of new and currently practiced seismic design and analysis methodologies for the design of new bridges in California. The SDC adopts a performance-based approach specifying minimum levels of structural system performance, component performance, analysis, and design practices for ordinary standard bridges. The SDC has been developed with input from the Caltrans Offices of Structure Design, Earthquake Engineering and Design Support, and Materials and Foundations. Memo 20-1 of the SDC outlines the bridge category and classification, seismic performance criteria, seismic design philosophy and approach, seismic demands and capacities on structural components, and seismic design practices that collectively make up Caltrans' seismic design methodology.

LOCAL REGULATIONS

Geotechnical Investigations

Local jurisdictions typically regulate construction activities through a process that may require the preparation of a site-specific geotechnical investigation. The purpose of a site-specific geotechnical investigation is to provide a geologic basis for the development of appropriate construction design. Geotechnical investigations typically assess bedrock and Quaternary geology, geologic structure, soils, and the previous history of excavation and fill placement. Proponents of specific projects in the MTP 2035 that require design of earthworks and foundations for proposed structures will need to prepare geotechnical investigations on the physical properties of soil and rock at the site prior to project design.

Local Grading and Erosion Control Ordinances

Many counties and cities have grading and erosion control ordinances. These ordinances are intended to control erosion and sedimentation caused by construction activities. A grading permit is typically required for construction-related projects. As part of the permit, project applicants usually must submit a grading and erosion control plan, vicinity and site maps, and other supplemental information. Standard conditions in the grading permit include a description of BMPs similar to those contained in a SWPPP.

County and City General Plans

The seismic elements of the City General Plan contains goals, objectives, and policies aimed at reducing the seismic risk to people and property. Proponents of specific projects would be required to consult the general plans and design the project consistent with the applicable guidelines outlined within the general plan.

2.2.2.2 Affected Environment

REGIONAL GEOLOGY

The project area is located in the City of Sacramento, which is within the Sacramento Valley and a part of the larger Great Central Valley. The Great Central Valley is a deep trough that extends 400 miles from the Klamath Mountains in the north to the Tehachapi Mountains in the south. The American and Sacramento Rivers and their tributaries, which drain the Sacramento Valley, flow south and west toward San Francisco Bay. The project area does not contain any unique geologic or physical features, as it is generally level with minimal variations in topography.

SOILS

According to the Sacramento General Plan Update Draft EIR, the project area is underlain by Holocene floodplain deposits. These recent floodplain and basin deposits represent the depositional regime of the area immediately prior to streamflow and drainage changes brought about within the last 135 years (City of Sacramento 1987). Floodplain deposits are unconsolidated sands, silts, and clays formed from flooding of the American and Sacramento rivers, and are generally moderately to highly permeable.

In 1990, the City of Sacramento obtained a NPDES permit from the State Water Resources Control Board under the requirements of the EPA and Section 402 of the CWA. The permit addresses pollutants found in stormwater runoff. For more detailed requirements of the City's NPDES permit, refer to Section 2.2.1, "Hydrology, Water Quality, Stormwater, and Runoff."

SEISMICITY

Geologic features, such as faults or Alquist-Priolo special studies zones, are not known to occur on or in the immediate vicinity of the project area (City of Sacramento 1987). However, several faults occur throughout California, including unknown faults, where movement that may cause surface rupture is possible. Regionally, 13 major faults occur within a 75-mile radius, the nearest being 29 miles from Sacramento (Dunnigan Hills fault) and the farthest being 75 miles away (San Andreas fault). According to the Sacramento General Plan Update Draft EIR, the City of Sacramento is subject to potential damage from earthquake groundshaking at a maximum intensity of VIII (Modified Mercalli Scale)¹ (City of Sacramento 1987). The City requires that all new structures be designed to withstand this intensity level, since the City is within Zone 3 of the Uniform Building Standard Code's Seismic Risk Map of the United States (City of Sacramento 1987).

¹ VIII on the Modified Mercalli Intensity Scale is described as follows: damage slight in specially designed structures; considerable in ordinary substandard buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Chimneys, factory stacks, columns, monuments, and walls fall. Heavy furniture overturned. Disturbs persons driving vehicles (VIII +/- IX, Rossi-Forel Scale).

2.2.2.3 Environmental Consequences

For the purposes of this project, an impact is considered significant if the project would expose people or structures to hazards including landslides, strong seismic events, or liquefaction, or if the project would construct the I-80 Bicycle/Pedestrian Overcrossing on expansive soils.

Impact GEO-1: Potential to expose people to the risk of strong seismic events, liquefaction, or landslides

The proposed Natomas I-80 Bicycle and Pedestrian Overcrossing, which would be constructed to current UBC standards that would minimize the potential for damage due to groundshaking, would not expose people to geologic or seismic hazards. The incorporation of structural design features in the POC structure that are capable of withstanding the forces associated with the maximum credible earthquake on active faults in the project vicinity. The impact is less than significant.

Impact GEO-2: Potential to locate structures on soils that are inadequate or expansive soils

The topography at the project site is generally level and stable. To provide additional stabilization of soil within the project area, as mentioned in Section 1.3.1, long-term soil erosion and sedimentation that could occur due to location of the project will be controlled by hydroseeding with native dryland grasses and typical highway median grass cover, in accordance with Caltrans' BMPs. Temporary stabilization will be also be implemented through use of Caltrans' BMPs. The potential for soil erosion will be further reduced through compliance with the City's Grading, Erosion, and Sediment Control Ordinance (Code 15.88.250), Standard Specifications for Public Works Construction (Section 6(6)), as appropriate.

In light of the project requirements to comply with the City's Code 15.88.250, its Section 6(6), and requirement to prepare a SWPPP under the NPDES general stormwater permit for construction, potential impacts resulting in erosion, changes in topography, or unstable soil conditions would be less than significant.

Impact GEO-3: Potential effect on unique geologic resource

There are no recognized unique geologic features or physical features that would be impacted by the construction of the proposed project. Therefore, the proposed project would have no impact on unique geologic or physical features.

CUMULATIVE IMPACTS

There are no cumulative impacts on geological resources associated with this project.

2.2.2.4 Mitigation Measures

No mitigation is necessary.

Although the scientific fields of paleontology and archaeology differ in their subject matter, insight into the intent of CEQA with respect to paleontologically unique resources may be gained through consideration of parallel wording applied to archaeological resources. PRC 21083.2(g) states the following.

As used in this section, “unique archaeological resource” means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets 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.

The application of comparable criteria to paleontological resources would dictate comparable protection for scientifically important paleontological resources, including both potentially significant fossils and their geologic settings. A potentially significant impact would occur if the project affects sensitive, previously undisturbed sediment or sedimentary rock, unless mitigation measures reduce this impact to a less-than-significant level. The term *sensitive*, as used here, is discussed and defined later in this report.

California Public Resources Code

Several sections of the California PRC protect paleontological resources. PRC 5097.5 prohibits “knowing and willful” excavation, removal, destruction, injury, and defacement of any “vertebrate paleontological site, including fossilized footprints,” on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted express permission. PRC 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands. The sections of the California Administrative Code relating to the State Division of Beaches and Parks afford protection to geologic features and “paleontological materials” but grant the director of the state parks system authority to issue permits for specific activities that may result in damage to such resources, if the activities are in the interest of the state parks system and for state parks purposes (California Administrative Code 4307–4309).

Society of Vertebrate Paleontology Professional Standards

Recognizing the need for consistent, reasonable standards for the identification and management of paleontological resources that may be affected by construction activities, the leading organization of professional vertebrate paleontologists, the SVP, has published these guidelines for measures relating to sensitivity and significance as shown in Table 2.2.3-1.

Table 2.2.3-1. Society of Vertebrate Paleontology's Definitions of Sensitivity Categories and Recommended Treatment for Paleontological Resources

Sensitivity Category	Definition	Recommended Mitigation Treatment
High	Areas underlain by geologic units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered.	<ul style="list-style-type: none"> • Preliminary survey and surface salvage before construction begins. • Monitoring and salvage during construction. • Specimen preparation; identification, cataloging, curation, and storage of materials recovered. • Preparation of final report describing finds and discussing their significance. • All work should be supervised by a professional paleontologist who maintains the necessary collecting permits and repository agreements.
Undetermined	Areas underlain by geologic units for which little information is available.	<ul style="list-style-type: none"> • Preliminary field surveys by a qualified vertebrate paleontologist to assess project area's sensitivity • Design and implementation of mitigation if needed, based on results of field survey
Low	Areas underlain by geologic units that are not known to have produced a substantial body of significant paleontologic material.	Protection and salvage generally are not required. However, a qualified paleontologist should be contacted if fossils are discovered during construction, in order to salvage finds and assess the need for further mitigation.

Source: Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995.

These guidelines provide a specific framework for implementing the CEQA protections for paleontological resources.

2.2.3.2 Affected Environment

The project area is located in the Sacramento Valley, which in turn forms the southern part of California's Great Valley geomorphic province (Norris and Webb 1990; Harden 1998). The Great Valley, also called the Central Valley, is a nearly flat alluvial plain that lies between the Sierra Nevada on the east and the Coast Ranges on the west. Its southern end is defined by the Tehachapi Mountains north of Los Angeles, and its northern end is defined by the Klamath Mountains. Subdivided into the Sacramento Valley to the north and the San Joaquin Valley to the south, the valley averages about 50 miles (80.5 kilometers) wide and is about 400 miles (644 kilometers) long overall (Norris and Webb 1990; Bartow 1991; Harden 1998).

The Great Valley is floored by a thick sequence of sedimentary deposits that range in age from the Jurassic Period (middle Mesozoic Era, about 200 million years ago) to the present. Under the eastern and central portions of the valley, the base of the sequence likely rests on Mesozoic crystalline rock allied to the plutons of the Sierra Nevada; to the west, basement rocks are believed to be Franciscan metasediments and/or mélangé similar to exposures in the Coast Ranges. Mesozoic sedimentary rocks form the subsurface record marine deposition. They are overlain by Tertiary strata reflecting marine,

estuarine, and terrestrial conditions. The Tertiary strata, in turn, are overlain by Quaternary fluvial and alluvial strata recording uplift and erosion of the Sierra Nevada and Coast Ranges to approximately their present shape (Norris and Webb 1990; Bartow 1991).

The Quaternary Period includes the Pleistocene Epoch (about 1.8 million years to about 10,000 years ago) (Bell et al. 2004) and the Holocene (Recent) Epoch (approximately the past 10,000 years). The Pleistocene Epoch is informally termed the Ice Age, although it also includes several warm intervals during which the climate differed little from that of today. Mountain glaciers in the Sierra Nevada expanded during the intervening colder intervals (Lettis 1988), much as continental glaciers did in parts of the upper Midwest. However, only the late Wisconsin continental glaciation has been firmly correlated with one of the Sierran advances, termed the Tioga (Gillespie et al. 1999). This glacial interval, in turn, may correlate to the time of deposition of the upper unit of the Modesto Formation (Lettis 1988).

The alternating cold and warm intervals of the Pleistocene caused episodic changes in the nature of sediment deposition along the eastern Great Valley margin. During the cold periods, the growth of Sierra glaciers and their slow but powerful down-valley movement scraped away preexisting soils and mountain stream deposits in their paths and abraded the underlying rocks to produce an abundance of unconsolidated sediment with grain sizes ranging from clay, silt, and sand to large boulders. Most of this excess sediment still could be transported by the high-gradient rivers draining the glaciers, but at points where these rivers discharged onto the nearly level Central Valley floor, the abruptly slowing flow caused the rivers to drop much of the transported sediment load. (Whether most of the deposition occurred during glacial maxima or during glacial retreat is still subject to debate among geologists. See Lettis and Unruh [1991] and Weissman et al. [2002].) These mixed sediments accumulated to form broad, low conical deposits, termed alluvial fans (Shlemon 1971) or fluvial fans (Bennett et al. 2006), which eventually extended many miles radially from the points where the rivers left the steep mountain slopes. River channels shifted laterally across the fans and often split into multiple distributaries, leaving sand and gravel deposits along their former courses. Flood events left finer silts and clays on the overbank areas on the fan surface between channels and in abandoned channels, while occasional mudflows left coarse, poorly sorted deposits on the upper parts of the fans (Cherven 1984). Fans that formed below the mouths of adjacent westward-flowing rivers and streams often coalesced, giving rise to a continuous chain of fan deposits along the eastern San Joaquin Valley margin. At the same time, marginal lake deposits and/or channel and floodplain deposits of the low-gradient ancestral San Joaquin River continued to accumulate nearer the main valley axis, alternately overlapping or being overlapped by the distal fan deposits (Cherven 1984). Periods of reduced sediment outwash and fan deposition (during interglacials, according to Weissmann et al. 2002) allowed development of fossil soils on the fan surfaces. These paleosols are commonly used now to delineate the different formations within the Pleistocene sequence along the eastern side of the San Joaquin Valley.

With the return of warmer climates between glacial advances, the less-loaded rivers began to incise the fans, and soils developed between drainages. Erosion during these warm intervals also lowered the Great Valley floor so that the next glacial interval created new fans closer to the valley axis, leaving the dissected remnants of the older fan deposits partly uncovered at higher elevations. As a net result, remnants of the oldest fans generally occupy positions closer to the Sierra front. Each generation of fan deposits and corresponding valley floor deposits has been named (Marchand and Allwardt 1981), approximately dated, and correlated with episodes of advance of the Sierra glaciers (summarized in Lettis 1988).

The project area is located within lands formerly used for agricultural activities that has been increasingly converted to transportation, residential, and commercial development. Grading, cutting, and filling along existing roadways (primarily I-80) and graded road margins, trenching for utilities, and other construction activities have resulted in substantial surface and subsurface ground disturbance throughout the project

area. Intensive mechanized agriculture has caused further ground disturbance in the area. It is not anticipated the excavation activities associated with the construction of the POC will occur to a depth that may encounter any known sensitive paleontological resources. However, inadvertent discovery of such resources during project construction could result in a significant impact on such resources.

2.2.3.3 Environmental Consequences

Impact PAL-1: Potential effects on sensitive paleontological resources

A potentially significant impact will occur if the project affects sensitive, previously undisturbed sediment or sedimentary rock unless mitigation measures reduce this impact to a less-than-significant level. An offsetting positive impact could be realized if the excavations reveal otherwise inaccessible fossils that can be salvaged under an effective mitigation program.

Most of the anticipated major excavations associated with the project are not expected to affect sensitive paleontological resources. However, in the event of discovery of vertebrate, plant, or invertebrate fossils, implementation of the mitigation measure below would reduce the impact to a less-than-significant level.

CUMULATIVE IMPACTS

There are no cumulative impacts on paleontological resources associated with this project.

2.2.3.4 Mitigation Measures

Mitigation Measure PAL-1: During construction activities, if sensitive paleontological resources are encountered, work will be stopped immediately and recording and salvage activities will be instituted

If, during construction activities, sensitive paleontological resources are encountered, work will be stopped immediately and recording and salvage activities will be undertaken by a qualified paleontologist. The paleontologist may oversee the recording, preservation, and/or salvage of such resources, if necessary, according to professional standards and specifications set forth by the Society of Vertebrate Paleontology. Implementation of this measure will reduce impacts below the level of significance.

2.2.4 Hazardous Waste/Materials

2.2.4.1 Regulatory Setting

Hazardous waste is defined as any waste material that is a potential threat to human health and the environment, having the capacity to cause serious illness or death. There is no direct evidence of such hazardous substances or petroleum products on the project site or properties immediately adjacent to the site under conditions that could significantly affect the feasibility or cost of the project. The area is readily accessible to emergency vehicles in the event of a hazardous waste emergency.

2.2.4.2 Affected Environment

The portion of I-80 in the project area has supported vehicular activity since the 1950s; therefore, project surface soils have the potential to be contaminated with Aerially Deposited Lead (ADL) from exhaust of cars burning leaded gasoline. This is a potentially significant impact because workers who will engage in construction activities (e.g., excavation) may be exposed to contaminated soils.

2.2.4.3 Environmental Consequences

For the purposes of this document, an impact is considered significant if the proposed 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 dewatering activities

Impact HAZ-1: Potential for accidental explosion or release of hazardous substances

The day-to-day use of the POC would not generate the risk of an explosion or release of hazardous substances; and implementation of the project would not involve the transport, use, or disposal of hazardous materials or the release of hazardous emissions. However, construction of the POC would include construction vehicles and equipment that would require the use of common products, such as petroleum-based fuels and lubricants. In light of the project's required compliances with the Standard Specifications for Public Works Construction (Section 6(6)) and the SWPPP required under the NPDES general stormwater permit for construction, the potential for risk of accidental explosion or release of hazardous substances would be less than significant.

Impact HAZ-2: Potential presence of Aerially Deposited Lead in soils

Toxic substances or contaminated soils are not known to be present on the project site; therefore, exposure of people to existing sources of such substances is not expected to result from the proposed project. However, as noted above, ADL may be present in surface soils, resulting in a potentially significant impact. A site investigation report to determine the presence and concentration of ADL in soil along selected portions of the POC project near the freeway, and to determine appropriate mitigation, if necessary, would be conducted, which would reduce the impacts to a less-than-significant level.

CUMULATIVE IMPACTS

There are no cumulative impacts related to hazardous resources associated with this project.

2.2.4.4 Mitigation Measures

Mitigation Measure HAZ-1: Comply with Standard Specifications for Public Works Construction and the SWPPP

The project's required compliances with the Standard Specifications for Public Works Construction and the SWPPP, mentioned above, would reduce impacts relating to the exposure of people to existing sources of potential health hazards to a less-than-significant level.

Mitigation HAZ-2: Conduct site investigation for Aerially Deposited Lead

This is a potentially significant impact because workers who will engage in construction activities (e.g., excavation) may be exposed to contaminated soils. A site investigation report will be undertaken to determine the presence and concentration of ADL in soil along selected portions of the POC project near the freeway, and to determine appropriate mitigation, if necessary.

2.2.5 Air Quality

2.2.5.1 Regulatory Setting

FEDERAL AND STATE REGULATIONS

Criteria Pollutants

The federal and state governments have established ambient air quality standards for the following six criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (particulate matter smaller than 10 microns or less in diameter [PM₁₀] and particulate matter smaller than 2.5 microns or less in diameter [PM_{2.5}]), and lead. Ozone, NO₂, and particulate matter generally are considered "regional" pollutants, as these pollutants or their precursors affect air quality on a regional scale. Pollutants such as CO, SO₂, lead, and particulate matter are considered local pollutants that tend to accumulate in the air locally. Particulate matter is considered both a localized and a regional pollutant. Within the project area, CO, PM₁₀, and ozone are considered pollutants of concern. Toxic air contaminants (TACs) are discussed below also, although no state or federal ambient air quality standards exist for them. Brief descriptions of these pollutants follow, and a complete summary of California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) is provided in Table 2.2.5-1.

Ozone

Ozone is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials. Ozone is a severe eye, nose, and throat irritant. Ozone also attacks synthetic rubber, textiles, plants, and other materials. Ozone causes extensive damage to plants by leaf discoloration and cell damage.

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors—reactive organic gases (ROG) and nitrous oxides (NO_x)—react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. The ozone

precursors, ROG and NO_x, are mainly emitted by mobile sources and by stationary combustion equipment.

Carbon Monoxide

Carbon monoxide is essentially inert to plants and materials but can significantly affect human health. CO is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. CO can cause health problems such as fatigue, headache, confusion, dizziness, and even death.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Inhalable Particulates

Inhalable particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates also reduce visibility and corrode materials. Particulate emissions are generated by a wide variety of sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere.

Toxic Air Contaminants

TACs are pollutants that may be expected to result in an increase in mortality or serious illness, or that may pose a present or potential hazard to human health. Health effects include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. Although ambient air quality standards exist for criteria pollutants, no standards exist for TACs.

Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the California Air Resources Board (CARB) consistently has found that no levels or thresholds exist below which exposure is risk-free. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor, called a *hazard index*, is used to evaluate risk. In the early 1980s, the CARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (Assembly Bill [AB] 1807) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. The TAC of most concern with regard to the proposed project is diesel exhaust particulate matter, which was identified by the CARB as a TAC in October 2000.

Table 2.2.5-1. Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard		Standard		Violation Criteria	
			(parts per million)		(micrograms per cubic meter)		California	National
			California	National	California	National	California	National
Ozone ^a	O ₃	1 hour 8 hours	0.09 0.070	N/A 0.08	180 137	N/A 157	If exceeded If exceeded	N/A If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area
Carbon monoxide	CO	8 hours 1 hour	9.0 20	9 35	10,000 23,000	10,000 40,000	If exceeded If exceeded	If exceeded on more than 1 day per year If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	N/A	7,000	N/A	If equaled or exceeded	N/A
Nitrogen dioxide	NO ₂	Annual average 1 hour	0.030 0.18	0.053 N/A	56 338	100 N/A	N/A If exceeded	If exceeded on more than 1 day per year N/A
Sulfur dioxide	SO ₂	Annual average 24 hours 1 hour	N/A 0.04 0.25	0.03 0.14 N/A	N/A 105 655	80 365 N/A	N/A If exceeded If exceeded	If exceeded If exceeded on more than 1 day per year N/A
Hydrogen sulfide	H ₂ S	1 hour	0.03	N/A	42	N/A	If equaled or exceeded	N/A
Vinyl chloride	C ₂ H ₃ Cl	24 hours	0.01	N/A	26	N/A	If equaled or exceeded	N/A
Inhalable particulate matter	PM10	Annual arithmetic mean 24 hours	N/A N/A	N/A N/A	20 50	N/A 150	N/A If exceeded	If exceeded at each monitor within area If exceeded on more than 1 day per year
	PM2.5	Annual arithmetic mean	N/A	N/A	12	15	N/A	If 3-year average from single or multiple community-oriented monitors is exceeded
		24 hours	N/A	N/A	N/A	65	N/A	If 3-year average of 98th percentile at each population-oriented monitor within an area is exceeded
Sulfate particles	SO ₄	24 hours	N/A	N/A	25	N/A	If equaled or exceeded	N/A
Lead particles	Pb	Calendar quarter 30-day average	N/A N/A	N/A N/A	N/A 1.5	1.5 N/A	N/A If exceeded	If exceeded no more than 1 day per year N/A

Notes:

All standards are based on measurements at 25°C and 1 atmosphere pressure. National standards shown are the primary (health effects) standards. N/A = not applicable.

^a The EPA recently replaced the 1-hour ozone standard with an 8-hour standard of 0.08 part per million. The EPA issued a final rule that revoked the 1-hour standard on June 15, 2005. However, the California 1-hour ozone standard will remain in effect. Source: California Air Resources Board 2008a.

LOCAL REGULATIONS

The project site lies within the urbanized area of the Sacramento Valley Air Basin (SVAB) and is subject to federal, state, and local air quality regulations. It is under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD is responsible for implementing emissions standards and other requirements of federal and state laws.

In July 2004, the SMAQMD published their guidance manual for evaluating impacts from development projects within Sacramento County. This manual, titled *Guide to Air Quality Assessment in Sacramento County*, describes the methodology for calculating emissions and determining whether these emissions would result in impacts on air quality under CEQA. Based on this guidance, project-related air emissions would cause a significant effect if they resulted in concentrations that create either a violation of an ambient air quality standard (as identified in Table 2.2.5-1) or contribute to an existing air quality violation. Table 2.2.5-2 presents the allowable contaminant generation rates at which emissions are considered to significantly affect air quality throughout the SMAQMD (Sacramento Metropolitan Air Quality Management District 2004).

Table 2.2.5-2. Sacramento Metropolitan Air Quality Management District Significance Thresholds (Ozone Precursor Emissions)

	Reactive Organic Gases (pounds per day)	Nitrogen Oxides (pounds per day)	Carbon Monoxide (pounds per day)	Particulate Matter Less than 10 microns (pounds per day)
Construction (short-term)	None	85	CAAQS	CAAQS
Operation (long-term)	65	65	CAAQS	CAAQS

Source: SMAQMD 2004.

The construction-related thresholds indicated in Table 2.2.5-2 were used to evaluate the significance of this project’s emissions, as there is no operational component that would emit any pollutants. Project-related emissions were considered significant if emissions would increase by more than 85 pounds per day (ppd) of NO_x, or would cause or contribute to an existing or projected violation of the CAAQS for PM10. A project’s contribution to the CAAQS is considered significant by the SMAQMD if it emits pollutants that increase ambient concentrations by 5% or more of the CAAQS. Emissions of CO from construction activities are not considered an issue of concern because the SMAQMD does not consider construction activities to be a major source of CO. In addition, the District is in attainment status for CO. Consequently, emissions of CO are not addressed in this analysis.

For the assessment of significant impacts from construction-related emissions of particulate matter, the SMAQMD also has established screening levels based on a project’s maximum actively disturbed area. Based on the maximum area disturbed, the SMAQMD recommends mitigation measures that would reduce particulate matter emissions to a less-than-significant level. Table 2.2.5-3 summarizes the mitigation measures recommended by the SMAQMD for various project sizes.

Table 2.2.5-3. Sacramento Metropolitan Air Quality Management District Particulate Matter Screening Levels for Construction Projects

Screening Level	Mitigation
5 acres and below	No mitigation required
5.1–8 acres	Level One Mitigation Required: Water exposed soil twice daily. Maintain 2 feet of freeboard space on haul trucks.
8.1–12 acres	Level Two Mitigation Required: Water exposed soil three times daily. Water soil piles three times daily. Maintain 2 feet of freeboard space on haul trucks.
12.1–15 acres	Level Three Mitigation Required: Keep soil moist at all times. Maintain 2 feet of freeboard space on haul trucks. Use emulsified diesel or diesel catalysts on applicable heavy-duty diesel construction equipment.

Source: SMAQMD 2004.

Sacramento General Plan

The following policies from the Sacramento General Plan (City of Sacramento 2007), to be adopted by December 2008, prior to construction of the I-80 Bike/Ped overcrossing, apply to the proposed project.

Environmental Resources (2007)

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

ER 6.1.1 Maintain Standards. The City shall meet and maintain State and Federal ambient air quality standards.

ER 5.1.2 Emissions Reduction. The City shall require development projects that result in substantial air quality impacts (i.e., exceeding the SMAQMD ROG and NOx operational thresholds) to incorporate design or operational features that result in a reduction in emissions equal to 15 percent from the level that would be produced by an unmitigated project.

ER 6.1.7 Protect all Residents Equally. The City shall ensure that all land use decisions are made in an equitable fashion in order to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.

2.2.5.2 Affected Environment

The project is located in the SVAB, which is a valley bounded by the North Coast Ranges on the west and the Northern Sierra Nevada Mountains on the east. The intervening terrain is flat and lies approximately 25 feet above sea level.

The climate of the Sacramento Valley is characterized as Mediterranean, and typically consists of hot, dry summers and mild, rainy winters. Daily temperatures may range from 20 °F with summer highs usually exceeding 100 °F, and winter lows occasionally below freezing. Average annual rainfall is approximately 20 inches. The prevailing winds are moderate and vary from moist clean breezes from the south to dry land flows from the north (City of Sacramento 2005).

MONITORING DATA

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that the federal and state governments have established for various pollutants (Table 2.2.5-1) and by monitoring data collected in the region. Monitoring data concentrations are typically expressed in terms of parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The nearest air quality monitoring stations in the vicinity of the project area are the Sacramento Airport Road monitoring station and the T Street monitoring station. Air quality monitoring data from these two stations are summarized in Table 2.2.5-4. These data represent air quality monitoring data for the last three years in which complete data are available (2004–2006).

Table 2.2.5-4. Ambient Air Quality Monitoring Data at the Sacramento Airport Road and T Street Monitoring Stations

Pollutant Standards	2004	2005	2006
Ozone (O₃)—Airport Road Station			
Maximum 1-hour concentration (ppm)	0.090	0.100	0.105
Maximum 8-hour concentration (ppm)	0.072	0.087	0.086
Number of Days Standard Exceeded ^a			
NAAQS 1-hour (>0.12 ppm)	0	0	0
CAAQS 1-hour (>0.09 ppm)	0	4	5
NAAQS 8-hour (>0.08 ppm)	0	1	1
Ozone (O₃)—T Street			
Maximum 1-hour concentration (ppm)	0.105	0.108	0.106
Maximum 8-hour concentration (ppm)	0.075	0.087	0.090
Number of Days Standard Exceeded ^a			
NAAQS 1-hour (>0.12 ppm)	0	0	0
CAAQS 1-hour (>0.09 ppm)	1	4	6
NAAQS 8-hour (>0.08 ppm)	0	1	3
Carbon Monoxide (CO)—Airport Road Station			
Maximum 8-hour concentration (ppm)	3.53	2.97	3.15
Maximum 1-hour concentration (ppm)	4.0	3.9	4.7
Number of Days Standard Exceeded ^a			
NAAQS 8-hour (\geq 9.0 ppm)	0	0	0
CAAQS 8-hour (\geq 9.0 ppm)	0	0	0
NAAQS 1-hour (\geq 35 ppm)	0	0	0
CAAQS 1-hour (\geq 20 ppm)	0	0	0
Carbon Monoxide (CO)—T Street Station			
Maximum 8-hour concentration (ppm)	2.96	3.64	NA
Maximum 1-hour concentration (ppm)	3.3	4.9	NA

Pollutant Standards	2004	2005	2006
Number of Days Standard Exceeded ^a			
NAAQS 8-hour (≥ 9.0 ppm)	0	0	0
CAAQS 8-hour (≥ 9.0 ppm)	0	0	0
NAAQS 1-hour (≥ 35 ppm)	0	0	0
CAAQS 1-hour (≥ 20 ppm)	0	0	0
Particulate Matter (PM10) ^b —Airport Road Station			
National ^c maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	47.0	56.0	81.0
National ^c second highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	42.0	44.0	71.0
State ^d maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	87.1	99.8	84.0
State ^d second highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	66.7	89.0	74.0
Particulate Matter (PM10) ^b —Airport Road Station (continued)			
National ^c annual average concentration ($\mu\text{g}/\text{m}^3$)	19.6	20.4	25.7
State ^d annual average concentration ($\mu\text{g}/\text{m}^3$)	20.5	20.8	NA
Number of Days Standard Exceeded ^a			
NAAQS 24-hour ($>150 \mu\text{g}/\text{m}^3$) ^e	0	0	0
CAAQS 24-hour ($>50 \mu\text{g}/\text{m}^3$) ^e	12	25	4
Particulate Matter (PM10) ^b —T Street Station			
National ^c maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	58.0	53.0	109.0
National ^c second highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	49.0	52.0	68.0
State ^d maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	58.0	55.0	111.0
State ^d second highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	50.0	55.0	71.0
National ^c annual average concentration ($\mu\text{g}/\text{m}^3$)	20.0	20.9	26.4
State ^d annual average concentration ($\mu\text{g}/\text{m}^3$)	NA	21.5	23.3
Number of Days Standard Exceeded ^a			
NAAQS 24-hour ($>150 \mu\text{g}/\text{m}^3$) ^e	0	0	0
CAAQS 24-hour ($>50 \mu\text{g}/\text{m}^3$) ^e	1	4	8
Particulate Matter (PM2.5)—T Street Station			
National ^c Maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	46.0	59.0	54.0
National ^c Second highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	43.0	56.0	46.0
State ^d maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	52.5	63.8	54.0
State ^d second highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	48.0	57.7	46.0
National ^b annual average concentration ($\mu\text{g}/\text{m}^3$)	NA	NA	NA
State ^e annual average concentration ($\mu\text{g}/\text{m}^3$)	NA	NA	NA
Number of Days Standard Exceeded ^a			
NAAQS 24-hour ($>65 \mu\text{g}/\text{m}^3$)	1	4	0

Notes: CAAQS = California Ambient Air Quality Standards.
 NAAQS = National Ambient Air Quality Standards.
 NA = Insufficient data available to determine the value.

^a An exceedance is not necessarily a violation.

^b Measurements usually collected every 6 days.

^c National statistics are based on standard conditions data.

^d State statistics are based on local conditions data, except in the South Coast Basin, which are based on standard conditions data.

^e Mathematically estimated how many days concentrations would have been greater than the level of the standard had each day been monitored exceedances based on.

Sources: CARB 2008b; EPA 2008.

As shown in Table 2.2.5-4, the Sacramento Airport Road monitoring station has experienced nine violations of the state 1-hour ozone standard, no violations of the national 1-hour standard, and two violations of the federal 8-hour ozone standard. The Sacramento Airport Road monitoring station has experienced no violations of the federal and state CO standards, 41 violations of the state 24-hour PM10 standard, and no violations for the national 24-hour PM10 standard.

The T Street monitoring station has experienced 11 violations of the state 1-hour ozone standard, 11 violations of the federal 1-hour ozone standard, and four violations of the state 8-hour ozone standard. The T Street monitoring station has experienced no violation of federal and state CO standards, no violations of the national 24-hour PM10 standard, 13 violations of the state 24-hour PM10 standard, and five violations of the national 24-hour standard for PM2.5.

ATTAINMENT STATUS

If monitored pollutant concentrations meet state or federal standards over a designated period, the area is classified as being in *attainment* for that pollutant. If monitored pollutant concentrations violate the standards, the area is considered a *nonattainment* area for that pollutant. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated as *unclassified*.

The State of California has designated the project area as being a serious nonattainment area for 1-hour ozone, a nonattainment area for PM10, and an attainment area for CO. The EPA has designated the project area as being a severe nonattainment area for 1-hour ozone, a serious nonattainment area for 8-hour ozone, a moderate nonattainment area for PM10, and a moderate maintenance for CO. Air quality standards applicable in the project area are summarized in Table 2.2.5-1.

SENSITIVE LAND USES

The SMAQMD defines a sensitive receptor as a facility that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants or may experience adverse effects from unhealthy concentrations of air pollutants. Hospitals and clinics, schools, elderly housing and convalescent facilities, and residential areas are examples of sensitive receptors. Sensitive receptors in the project area include surrounding low- and medium-density residential development.

2.2.5.3 Environmental Consequences

For the purposes of this analysis, the project would have a potential impact if it would create a new destination or origin for a vehicle trip or generate air pollutants, such as smoke or dust, as part of normal operation as outlined in Table 2.5.5-2.

Impact AIR-1: Potential for construction-related emissions

Construction emissions impacts have been assessed in this analysis using the URBEMIS2007 computer program; an inventory of anticipated construction equipment that would be used during construction activities was provided by the project engineers. The construction stages and equipment are listed in Table 1.3.1-1 (see Chapter 1, "Proposed Project"), along with duration, anticipated hours of operation, the types of equipment that will be used, manufacturer/model, horsepower, and associated percentages of use. Construction will last approximately 10 months to 1 year. The phases will likely be implemented sequentially.

As indicated in Table 2.2.5-2, the SMAQMD has established thresholds of significance for evaluation of both construction and operational emissions. Because there are no operational components that would emit any pollutants, only construction activities were evaluated for project significance. Table 2.2.5-2 indicates that construction emissions of NO_x in excess of 85 ppd would result in a significant impact on air quality. In addition, Table 2.2.5-3 establishes screening criteria for identification of mitigation and determination of impacts for construction-related fugitive dust emissions.

Construction of the project would result in a temporary increase in emissions of ROG, CO, NO_x, and PM10. Total daily project unmitigated emissions resulting from construction of the proposed project are summarized in Table 2.2.5-5, and Table 2.2.5-6 summarizes the daily mitigated project emissions. The air quality analysis involved estimating the increase in emissions using information on the number and types of construction equipment that would be used, based on the information summarized above. Because the proposed project will be divided into individual phases that likely will be implemented sequentially, construction activities were divided into separate phases and analyzed separately. Consequently, project significance is not a comparison of the sum of all construction phases to the SMAQMD threshold levels. Instead, if one phase of construction is found to have a significant impact, then the entire project is considered to result in a significant air quality impact.

Table 2.2.5-5. Maximum Daily Emissions from Construction Activities (Unmitigated)

Project Phase	ROG	NO _x	CO	PM10	PM2.5	CO ₂
Site Grading	11.6	110.7	44.2	8.4	4.9	11,200.0
Project Construction	16.2	158.6	55.5	6.2	5.7	15,122.0
Asphalt	10.7	83.6	28.9	4.4	4.1	8,076.2
SMAQMD threshold	NA	85	NA	NA	NA	NA

Table 2.2.5-6. Maximum Daily Emissions from Construction Activities (Mitigated)

Project Phase	ROG	NO _x	CO	PM10	PM2.5	CO ₂
Site Grading	11.6	55.6	44.2	0.6	0.4	11,200.0
Project Construction	16.2	80.9	55.5	0.5	0.4	15,122.0
Asphalt	10.7	43.0	28.9	0.4	0.3	8,076.2
SMAQMD threshold	NA	85	NA	NA	NA	NA

As indicated in Table 2.2.5-5, the estimated NO_x emissions would exceed the SMAQMD's construction threshold of 85 ppd (Table 2.2.5-2). This impact is considered significant. Mitigation Measures AIR-1 through AIR-4 would reduce this impact to a less-than-significant level (Table 2.2.5-6).

Impact AIR-2: Potential for fugitive dust emissions

As indicated above, Table 2.2.5-3 establishes screening criteria for identification of mitigation and determination of impacts for construction-related fugitive dust emissions. The SMAQMD has determined that construction activities with ground disturbance in excess of 15 acres per day would result in a significant impact with regard to particulate matter. Impacts of construction activities with ground disturbance less than 15 acres per day would be considered less than significant with implementation of

the control measures indicated in Table 2.2.5-3. Consequently, this impact is considered significant. Implementation of Mitigation Measure AIR-5 would reduce this impact to a less-than-significant level.

CUMULATIVE IMPACTS

There are no cumulative impacts on air quality associated with this project.

2.2.5.4 Mitigation Measures

Mitigation Measure AIR-1: Reduce NO_x emissions from off-road diesel-powered equipment

The City of Sacramento will provide a plan for approval by the lead agency and SMAQMD demonstrating that the heavy-duty (> 50 hp) off-road vehicles to be used for the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20% NO_x reduction and 45% particulate reduction compared to the most recent CARB fleet average at time of construction. Acceptable options for reducing emissions will include the use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology capable of reducing NO_x emissions by 40% (i.e., diesel oxidation catalyst), after-treatment products, and/or other options as they become available.

Mitigation Measure AIR-2: Submit an off-road construction equipment inventory to the SMAQMD

The City of Sacramento will submit to the lead agency and the SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 hp, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory will include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory will be updated and submitted monthly throughout the duration of the project, except that an inventory will not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative will provide SMAQMD with the anticipated construction timeline, including start date, and name and phone number of the project manager and onsite foreman.

Mitigation Measure AIR-3: Control visible emissions from off-road diesel-powered equipment

The city of Sacramento will ensure that emissions from all off-road diesel-powered equipment used on the project site do not exceed 40% opacity for more than 3 minutes in any 1 hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) will be repaired immediately, and the SMAQMD will be notified within 48 hours of identification of noncompliant equipment. A visual survey of all in-operation equipment will be made at least weekly, and a monthly summary of the visual survey results will be submitted throughout the duration of the project, except that the monthly summary will not be required for any 30-day period in which no construction activity occurs. The monthly summary will include the quantity and type of vehicles surveyed, as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section supersedes other SMAQMD or state rules or regulations.

Mitigation Measure AIR-4: Phase construction activities

Construction activities will be phased such that construction of project stages (as indicated above) does not occur concurrently.

Mitigation Measure AIR-5: Control fugitive dust emissions

The project applicant will ensure that daily ground disturbance does not exceed 15 acres per day. When daily ground disturbance exceeds 5 acres per day, the required control measures indicated in Table 2.2.5-4 will be implemented.

2.2.6 Noise

TERMINOLOGY

Sound. A vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

Noise. Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

Decibel (dB). A unitless measure of sound. A sound level measurement in decibels describes the logarithmic ratio of a measured sound pressure level to a reference sound pressure level of 20 micropascals.

A-Weighted Decibel (dBA). An overall frequency-weighted sound level that approximates the frequency response of the human ear.

Sound Level Percentiles (L_n). The sound level exceeded a certain percentage of time during a specified interval, where the subscript "n" is the percentile value. For example, L_{90} is the sound level exceeded 90% of the time, and L_{10} is the sound level exceeded 10% of the time.

Maximum and Minimum Sound Levels (L_{max} and L_{min}). The maximum or minimum sound level measured during a specified interval.

Equivalent Sound Level (L_{eq}). L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The duration of the measurement is commonly indicated in the subscript; for example, a one-hour L_{eq} sound level would be indicated as $L_{eq,1h}$.

Day-Night Level (L_{dn}). The energy average of A-weighted sound levels occurring during a 24-hour period, with a 10-dB penalty added to sound levels occurring between 10:00 p.m. and 7:00 a.m.

Community Noise Equivalent Level (CNEL). Similar to L_{dn} , CNEL is the energy average of A-weighted sound levels occurring during a 24-hour period, with a 10-dB penalty added to sound levels occurring between 10:00 p.m. and 7:00 a.m. In addition, a 5-dB penalty is applied to sound levels during the evening hours of 7:00 p.m. to 10:00 p.m.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000 to 8,000 Hz) range. However, it is widely accepted that people are able to begin to detect sound level changes of 3 dB for typical noisy environments. Further, a 10-dB increase is generally perceived as a doubling of loudness. Therefore, doubling sound energy (e.g., doubling the volume of traffic on a highway) would generally be perceived as a detectable, but not substantial, increase in sound level.

2.2.6.1 Regulatory Setting

SACRAMENTO GENERAL PLAN

The following policies from the Sacramento General Plan (City of Sacramento 2007), scheduled for adoption by December 2008, apply to the proposed project:

Environmental Constraints (2007)

Goal EC 3.1 Noise Reduction. Minimize noise impacts on land uses and human activity to ensure the health and safety of the community.

EC 3.1.1 Exterior Noise Standards. The City shall require noise mitigation for all development at locations where the exterior noise standards exceed those shown in Table 1 [Table 2.2.6-1]. If existing noise levels are increased by more than the allowable increment as shown in Table 2 [Table 2.2.6-2], mitigation shall be required to minimize effects to existing noise-sensitive uses.

EC 3.1.2 Interior Noise Standards. The City shall require noise mitigation to assure acceptable interior noise levels appropriate to the land use type: 45 dBA L_{dn} for residential, transient lodging, hospitals, nursing homes, and other uses where people normally sleep; and 45 dBA L_{eq} (peak hour for office buildings and similar uses).

EC 3.1.6 Construction Noise. The City shall require development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses consistent with standards indicated in Table 2 [Table 2.2.6-2].

EC 3.1.7 Alternatives to Sound Walls. The City shall encourage the use of design strategies and other noise reduction methods along transportation corridors in lieu of traditional sound walls to mitigate noise impacts and enhance aesthetics.

Table 2.2.6-1. Exterior Noise Compatibility Standards for Various Land Uses

Land Use Type	Highest Level of Noise Exposure that Is Regarded as "Normally Acceptable" ^a (L _{dn} ^b or CNEL ^c)
Residential—low-density single-family, duplex, mobile homes	60 dBA ^{d, e}
Residential—multi-family	65 dBA
Urban residential infill ^f and mixed-use projects ^g	70 dBA
Transient lodging—motels, hotels	65 dBA
Schools, libraries, churches, hospitals, nursing homes	70 dBA
Auditoriums, concert halls, amphitheaters	Mitigation based on site-specific study
Sports arena, outdoor spectator sports	Mitigation based on site-specific study
Playgrounds, neighborhood parks	70 dBA
Golf courses, riding stables, water recreation, cemeteries	70 dBA
Office buildings—business, commercial and professional	75 dBA
Industrial, manufacturing, utilities, agriculture	75 dBA

Notes:

- ^a As defined in the *Guidelines*, "Normally Acceptable" means that the "specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements."
- ^b L_{dn} (day night average level) is an average 24-hour noise measurement that factors in day and night noise levels.
- ^c CNEL (community noise equivalent level) measurements are a weighted average of sound levels gathered throughout a 24-hour period.
- ^d dBA (A-weighted decibel scale) is a measurement of noise levels.
- ^e The exterior noise standard for the residential area west of McClellan Airport (known as McClellan Heights/Parker Homes) is 65 dBA.
- ^f With land use designations of Central Business District, Urban Center (Low or High), and Urban Corridor (Low or High).
- ^g All mixed-use projects located anywhere in the City of Sacramento.

Source: State of California (2003).

Table 2.2.6-2. Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA)

Residences and Buildings where People Normally Sleep ^a		Institutional Land Uses with Primarily Daytime and Evening Uses ^b	
Existing L _{dn}	Allowable Noise Increment	Existing Peak Hour L _{eq}	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Notes:

- dBA = A-weighted decibel scale.
- L_{dn} = Day night average level.
- L_{eq} = Equivalent sound level.
- ^a This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
- ^b This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.

Source: Federal Transit Administration (2006).

2.2.6.2 Affected Environment

SURROUNDING NOISE-SENSITIVE LAND USES

Sensitive land uses are generally defined as locations where people reside or where the presence of noise could adversely affect the use of the land. Typical sensitive receptors include residents, school children, hospital patients, the elderly, and so on. Sensitive land uses in the project area that could be affected by the project include surrounding low- and medium-density residential areas.

EXISTING NOISE ENVIRONMENT

Noise sources that contribute to ambient noise levels in and adjacent to the project area include traffic from I-80, arterials, and local streets. As noted, noise-sensitive receptors in the vicinity of the project area include the surrounding residences. A City park has been built in the area to the east of Tempranillo Court.

On portions of the project site, noise from local roadways (i.e., I-80) is expected to exceed the 60-dB limit for exterior environments specified by the City of Sacramento Noise Element at buildout of the General Plan.

2.2.6.3 Environmental Consequences

For the purposes of this analysis, thresholds of significance are based on Title 24 standards and the City's proposed General Plan Noise Element and the City Noise Ordinance. Noise and vibration impacts resulting from implementation of the proposed project would be considered significant if they cause any of the following results:

- exterior noise levels at the proposed project that are above the upper value of the normally acceptable category for various land uses (Sacramento General Plan Update Draft EIR AA-27) caused by noise level increases due to the project;
- residential interior noise levels of 45 L_{dn} or greater caused by noise level increases due to the project;
- construction noise levels not in compliance with the City of Sacramento Noise Ordinance;
- occupied existing and project residential and commercial areas exposed to vibration peak particle velocities greater than 0.5 inch per second due to project construction;
- project residential and commercial areas exposed to vibration peak particle velocities greater than 0.5 inch per second due to highway traffic and rail operations; and
- historic buildings and archaeological sites exposed to vibration peak particle velocities greater than 0.25 inch per second due to project construction, highway traffic, and rail operations.

Impact NO-1: Noise impacts on noise-sensitive receptors

Noise resulting from operation of the proposed project would include recreational use of the bike trails. Recreational activities from bike trails and other similar land uses are usually quiet and do not typically generate substantial levels of noise. Consequently, potential noise impacts associated with operation of the proposed project are considered less than significant.

Construction of the proposed project could result in noise impacts on nearby sensitive residential receptors caused by temporary increases in noise levels during construction activities. Heavy equipment would be used for grading, paving, and installation of POC and bridge components. Generally, noise levels at construction sites can vary from 65 to a maximum of nearly 90 dBA when heavy equipment is used nearby. Construction noise would be intermittent, and noise levels would vary depending on the type of construction activity. Construction noise is exempt from the City of Sacramento Noise Ordinance, provided that construction is limited to the hours between 7:00 a.m. and 6:00 p.m., Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. on Sunday. A notation must be placed on the construction plans to indicate that the operation of construction equipment will be restricted to the hours listed above. Effects of noise resulting from construction activities within these hours are considered less than significant. Noises resulting from construction activities outside of these hours could exceed the noise standards established in the City's noise ordinance, which would result in significant noise impacts. Consequently, mitigation is required to reduce construction noise impacts to less-than-significant levels.

Pile driving will be used to place piles to support bridge components. Typical impact driving produces a peak particle velocity of 0.64 inch per second at 25 feet (Federal Transit Administration 1995). This attenuates to 0.5 inch per second at about 30 feet and 0.25 inch per second at about 50 feet. Because no residential, commercial, or historical buildings are located within 50 feet of proposed pile driving, the vibration impact of pile driving is considered less than significant.

CUMULATIVE IMPACTS

There are no cumulative impacts on local ambient noise standards associated with this project.

2.2.6.4 Mitigation Measures

Implementation of the following measures would reduce potentially significant noise impacts during construction to less-than-significant levels.

Mitigation Measure NO-1: Limit hours for construction activities

Construction activities will be limited to the hours established within the City's noise ordinance.

Mitigation Measure NO-2: Equip engines with silencers

Pursuant to the City's noise ordinance, all internal combustion engines in use on the project must be equipped with original manufacturers' silencers or their after-market equivalents, in good working order (City of Sacramento Code 66.203).

This Page Intentionally Left Blank

2.3 Biological Environment

This section discusses environmental issues related to biological resources.

2.3.1 Biological Resources

The study area includes the area proposed for ground-disturbing activities, such as construction, construction staging, and construction access. In open areas that are not confined by drainage canals, I-80, or development, the project area includes an area of up to 250 feet beyond the construction zone in order to determine potential indirect impacts on adjacent sensitive biological resources (e.g., wetlands, vernal pools, valley elderberry longhorn beetle, and burrowing owl habitat). This section addresses natural communities, wetlands and other waters, plant and animal species, threatened and endangered species, and invasive species. Information presented here is summarized from the Natural Environment Study (NES) prepared by Jones & Stokes (Jones & Stokes 2008).

2.3.1.1 Natural Communities

This section discusses natural communities of concern covered in Section 4.3 of the NES (Jones & Stokes 2008). The focus is on biological communities, not individual plant or animal species, and also includes information on wildlife and fish corridors and habitat fragmentation. Wildlife and fish corridors are areas of habitat used by wildlife and fish species for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value. Habitat areas that have been designated as critical habitat under the federal Endangered Species Act are discussed in Section 2.3.5, "Threatened and Endangered Species." Wetlands and other waters are discussed in Section 2.3.2, "Wetlands and Other Waters."

2.3.1.2 Riparian Woodland

REGULATORY SETTING

Riparian communities are considered sensitive locally, regionally, and statewide because of their habitat value and decline in extent. The California DFG has adopted a no-net-loss policy for riparian habitat values, and the Streambed Alteration Agreement (SAA) would include mitigation requirements for loss of riparian vegetation. The USFWS mitigation policy identifies California riparian habitats in Resources Category 2, for which no-net-loss of existing habitat value is recommended (46 Federal Register [FR] 7644).

AFFECTED ENVIRONMENT

Approximately 0.01 acre of cottonwood-willow riparian community occurs in the project area along an unnamed drainage ditch that flows along the south side of I-80. As described below, this drainage ditch appears to have been artificially created to contain runoff from the adjacent commercial property. The riparian community along this small drainage is sustained by year-round landscape and highway-surface runoff. The dominant species in this community are Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*), willow species (*Salix* sp.), and Himalayan blackberry (*Rubus discolor*). The herbaceous understory is made up of the nonnative annual grassland species mentioned above. The riparian

community occurs outside the ordinary high-water mark (OHWM) of the drainage ditch and does not support wetland characteristics (primarily hydrology and soils). Therefore, the cottonwood-willow riparian community would not be considered a jurisdictional wetland by the USACE but could be regulated by DFG.

Despite local disturbances from urbanization in the project vicinity, the cottonwood-willow riparian community in the project area provides an important wildlife resource—an island of habitat that can also be used by wildlife species along the Natomas Main Drainage Canal. Riparian trees and shrubs provide nesting habitat for numerous bird species that forage in the multi-layered vegetation of the riparian forest and in adjacent nonnative annual grassland and open water habitats. Birds observed in riparian forest in the project area during the field survey included American kestrel, California towhee, western scrub jay, and American robin.

ENVIRONMENTAL CONSEQUENCES

Impact BIO-1: Substantial adverse effect on riparian habitat

Construction of a pylon for the pedestrian trail would directly affect 0.01 acre of cottonwood-willow riparian habitat and indirectly affect approximately 0.1 acre. Construction activities would disturb or remove a portion of this sensitive natural community; implementation of Project-Specific Mitigation Measure BIO-1, described below, would minimize potential construction effects.

CUMULATIVE IMPACTS

The proposed project would incrementally affect cottonwood-willow riparian communities. Implementation of Mitigation Measure BIO-1 would reduce the project's incremental contribution to cumulative impacts to less than cumulatively considerable; would offset temporary and permanent losses incurred in the project area; and would ensure the continued existence of habitat value in the project area.

MITIGATION MEASURES

Implementation of the following avoidance and minimization measure will ensure that the proposed project minimizes effects on riparian habitat within and adjacent to the study area.

Project Specific Mitigation Measures

Mitigation Measure BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone

The City or its contractor will install orange construction barrier fencing to identify environmentally sensitive areas. The construction specifications will require that a qualified biologist identify sensitive biological habitat on site and areas to avoid during construction. Sensitive communities within the area that would generally be required for construction, including staging and access, will be fenced off to avoid disturbance. Sensitive resources that occur in and adjacent to the construction area include cottonwood-willow riparian forest and any trees that support nests of sensitive bird species. Before construction, the construction contractor will work with the project engineer and a resource specialist to identify the locations for the barrier fencing and will place stakes around the sensitive resource sites to indicate these locations. The protected area will be designated as an environmentally sensitive area and will be clearly identified on the construction specifications. The fencing will be installed before construction activities are initiated and will be maintained throughout the construction period. The following paragraph will be included in the construction specifications:

The Contractor's attention is directed to the areas designated as "environmentally sensitive areas." These areas are protected, and no entry by the Contractor for any purpose will be allowed unless specifically authorized in writing by the City. The Contractor will take measures to ensure that Contractor's forces do not enter or disturb these areas, including giving written notice to employees and subcontractors.

Temporary fences around the environmentally sensitive areas will be installed as the first order of work. They will be furnished, constructed, maintained, and removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. The fencing will be commercial-quality woven polypropylene, orange in color, and at least 4 feet high (Tensor Polygrid or equivalent). The fencing will be tightly strung on posts with maximum 10-foot spacing.

Compensatory Mitigation

None required.

2.3.2 Wetlands and Other Waters

2.3.2.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the CWA (33 United States Code [USC] 1344) is the primary law regulating wetlands and other waters of the United States (waters of the U.S.). The CWA regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by USACE with oversight by the EPA.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction, and (2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by DFG and the RWQCBs. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600–1607 of the California Fish and Game Code (DFGC) require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify DFG before beginning construction. If DFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. DFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation—whichever is wider. Wetlands under

jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from DFG.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications in compliance with Section 401 of the CWA. Please see Section 2.2.1, "Hydrology, Water Quality, Stormwater, and Runoff" for additional details.

2.3.2.2 Affected Environments

Drainages are natural and artificially created features with a well-defined bed and bank that carry water at some time of the year. These drainage features generally lack wetland vegetation within their OHWM and are therefore considered other waters of the U.S. Three drainages, totaling approximately 0.32 acre, cross through the project area: the West Drainage Canal, East Drainage Canal, and an unnamed drainage ditch. The West and East Drainages join into the Natomas Main Drainage Canal, which occurs outside of the project site. The Natomas Main Drainage Canal flows south about 1 mile into the Sacramento River. The unnamed drainage ditch appears to convey landscape irrigation and highway runoff into a culvert that may extend into one of these canals. The culvert outfall for this drainage ditch was not located during the field survey. Only the West Drainage Canal would be affected by the proposed project.

None of the three features in the project area are isolated or adjacent wetlands, but are considered other waters of the U.S., which are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an OHWM but lack positive indicators for one or two of the three wetland parameters (33 Code of Federal Regulations [CFR] 328.4). The three features in the project area share a hydrologic connection with the Sacramento River, which is classified as "traditionally navigable waters" and therefore are potentially under the jurisdiction of USACE.

The potential jurisdictional extent of the other waters of the U.S. was identified during the field survey based on an observable OHWM. The term *ordinary high-water mark* is defined (in 33 CFR 328.3[e]) as:

...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area.

In the project area, the open water portion of the drainages varies from 3 to 65 feet wide and occupies a relatively small portion of the site. The drainages convey flows year-round and ultimately connect to the Sacramento River. The three drainages do not support a prevalence of hydrophytic species below their OHWM (many areas appear to have been treated with an herbicide to prevent vegetative growth). Some areas contain weedy upland species but lack a prevalence of wetland vegetation. The drainages would most likely be considered other waters of the U.S. by USACE.

2.3.2.3 Environmental Consequences

Impact BIO-2: Substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act

The proposed project would result in the placement of fill material into a total of 0.32 acre of the West Drainage Canal, potentially delineated as other waters of the U.S. These effects would result from the following project-related activities:

- Installation of a concrete lining on the canal bottom under the Canal Bridge would result in the permanent placement of 0.09 acre of fill into the West Drainage Canal.
- Installation of temporary dams in the West Drainage Canal during bridge construction would result in the temporary placement of approximately 0.23 acre of fill material into the West Drainage Canal.

2.3.2.4 Cumulative Impacts

The proposed project would incrementally affect waters of the United States. Implementation of Mitigation Measure BIO-1 identified above would reduce the project's incremental contribution to cumulative impacts to less than cumulatively considerable; would offset temporary and permanent losses incurred in the project area; and would ensure the continued existence of this habitat value in the project area.

2.3.2.5 Mitigation Measures

Implementation of the Mitigation Measure Bio-1, described under Section 2.3.1.2, "Riparian Woodland," and the following avoidance and minimization measures would ensure that the proposed project minimizes effects on wetland habitat in and adjacent to the construction area.

CITY BICYCLE MASTER PLAN (BMP) MITIGATION MEASURES

Mitigation Measure BIO-2: Implement City BMP measures to reduce impacts on Waters of the U.S.

The following mitigation measures are recommended under Measure 6.4-2 in the BMP Draft EIR (Analytical Environmental Services 2003) to reduce impacts on waters of the U.S. associated with the proposed project to a less-than-significant level.

- a) A formal delineation of "Waters of the U.S." occurring within Proposed Project areas should be prepared by a qualified biologist and submitted to the USACE for verification. The appropriate Department of the Army permit should be obtained from the USACE prior to the discharge of any fill material within "Waters of the U.S." The Proposed Project should comply with any required compensatory mitigation for loss of "Waters of the U.S."
- b) Water Quality Certification should be obtained from the Regional Water Quality Control Board prior to development of the Proposed Project areas.
- c) Prior to any modification of intermittent drainages, formal notification of streambed alteration should be provided to the CDFG and a Streambed Alteration Agreement should be obtained, if required.

PROJECT SPECIFIC MITIGATION MEASURES

Mitigation Measure BIO-3: Obtain and comply with State, Federal, and Local Permits

Before any construction activities are initiated and bridge specifications have been finalized, the City will obtain the following permits:

- CWA Section 404 nationwide permit (Nationwide Permit 14: Linear Transportation Projects) from the USACE;
- CWA Section 401 water quality certification from the Central Valley RWQCB (all Section 404 permits require a Section 401 water quality certification from RWQCB);
- CWA Section 402/NPDES permit from State Water Resources Control Board (requiring preparation of a SWPPP);
- Section 1602 Streambed Alteration Agreement from DFG; and
- Biological Opinion from USFWS.

Copies of these permits will be provided to the contractor with the construction specifications. The City will be responsible for ensuring compliance with the conditions set forth in these permits.

COMPENSATORY MITIGATION

None required.

2.3.3 Plant Species

2.3.3.1 Regulatory Setting

USFWS and DFG share regulatory responsibility for the protection of *special-status* plant species (*special-status* is a general term for species that are afforded varying levels of regulatory protection). Special-status species are selected for protection because they are rare and/or subject to population and habitat declines. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see Section 2.3.5, "Threatened and Endangered Species" for detailed information regarding these species.

This section discusses all the other special-status plant species, including species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at *16 USC 1531 et seq.* (see also *50 CFR 402*). The regulatory requirements for CESA can be found at DFGC, Section 2050 et seq. Department projects are also subject to the Native Plant Protection Act (DFGC Sections 1900–1913) and California Environmental Quality Act (CEQA) (Public Resources Code, Sections 2100–21177).

In addition to state and federal laws regulating impacts on plants, local regulations need to be considered. These include the Sacramento Heritage Tree Ordinance and Natomas Basins Habitat Conservation Plan (NBHCP) (City of Sacramento et al. 2003). Details of the Sacramento Heritage Tree Ordinance can be

found in the Municipal Code, Title 12, "Streets, Sidewalks, and Public Places," Chapter 12.64, "Heritage Trees."

2.3.3.2 Affected Environment

Nineteen sensitive plant species were determined to have the potential to occur in the project region (Table 2.3.3-1; at end of chapter). Overall, the project area has a relatively low potential to support sensitive plant species based on the level of disturbance from previous and ongoing activities. Nevertheless, moderately suitable habitat for three of these species (woolly rose mallow, northern California black walnut, and Sanford's arrowhead) occurs along the drainage canals. These three species were identified as having a moderate potential to occur in the project area, based on the presence of suitable habitat conditions. The remaining species were identified as having no potential to occur in the project area. This determination was based on the lack of suitable habitat conditions and no previously recorded occurrences in the project region.

A variety of botanical surveys have been conducted in the project area for road, commercial development, and utility projects. No sensitive plant species have been identified during these previous surveys or during the spring 2004 surveys conducted by Jones & Stokes for the NES for the proposed project (note: the March and June 2004 surveys coincided with the identification period for sensitive plants identified as potentially occurring the project region). In addition, there are no recorded occurrences of sensitive plant species in the project area (CNDDDB 2008).

2.3.3.3 Environmental Consequences

Impact BIO-3: Substantial adverse effect on sensitive natural community identified in local or regional plans, policies, and regulations of the California Department of Fish and Game or U.S. Fish and Wildlife Service

Based on the lack of previously recorded occurrences and the results of spring botanical field surveys conducted for the proposed project, it was determined that no sensitive plant species occur in the project area. Focus surveys for rare plant species were not conducted in 2008 as the previous rare plant surveys conducted in the project area were determined to still be applicable to the newly proposed project according to Caltrans Environmental Coordinator Larry Chiea (pers. comm. 2008). Impacts on sensitive plant species will not be discussed further in this IS/MND.

2.3.3.4 Mitigation Measures

No mitigation measures are proposed because no special-status plants have previously been recorded or discovered in the study area during botanical surveys.

2.3.4 Animal Species

2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts on wildlife. USFWS, the National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NOAA Fisheries), and DFG

are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the CESA or FESA. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5. All other special-status animal species are discussed here, including DFG fully protected species and species of special concern and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act (NEPA),
- Migratory Bird Treaty Act (MBTA), and
- Fish and Wildlife Coordination Act.

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act,
- Sections 1600–1603 of the DFGC, and
- Sections 3503 (active bird nests), 3503.5 (active raptor nests), 4150, and 4152 of the DFGC.

In addition to state and federal laws regulating impacts on plants, local regulations need to be considered. These include the City of Sacramento General Plan (City of Sacramento 1988a) and Natomas Basin Habitat Conservation Plan (City of Sacramento et al. 2003).

2.3.4.2 Northwestern Pond turtle

Northwestern pond turtle is designated as a federal species of concern and a state species of special concern. Northwestern pond turtle, one of two subspecies of western pond turtle, occurs from the vicinity of the American River in California north to the lower Columbia River in Oregon and Washington (Jennings et al. 1992).

Western pond turtle is thoroughly aquatic, preferring the quiet waters of ponds, reservoirs, and sluggish streams (Stebbins 2003). The species occurs in a wide range of both permanent and intermittent aquatic environments (Jennings et al. 1992). Western pond turtles spend a considerable amount of time basking on rocks, logs, emergent vegetation, mud or sand banks, or human-generated debris. Western pond turtles move to upland areas adjacent to or up to 0.25 mile from watercourses to deposit eggs and overwinter (Jennings and Hayes 1994). Turtles have been observed overwintering several hundred feet from watercourses. In the Central Valley and northward, western pond turtles typically become active in March and return to overwintering sites by October or November (Jennings et al. 1992). Reasons for declining numbers of western pond turtles include drought, habitat alteration, destructive grazing practices, impacts on nesting habitat, and alteration of habitat during their incubation period (Jennings and Hayes 1994).

AFFECTED ENVIRONMENT

The California Natural Diversity Data Base (CNDDDB) (2008) lists one record of northwestern pond turtle within a 10-mile radius of the project area. No northwestern pond turtles were observed during 2004 or 2008 field surveys, which were conducted early in the active season for pond turtles but on warm days when they could be expected to be active. The canals are considered suitable aquatic habitat; however,

the adjacent upland habitat is considered unsuitable for nesting habitat because the site is regularly disked for agriculture or canal maintenance.

ENVIRONMENTAL CONSEQUENCES

Impact BIO-4: Substantially adversely affect northwestern pond turtle

Adult northwestern pond turtles could be crushed and killed during construction activities associated with the Canal Bridge including construction of the temporary dams and dewatering activities within the West Drainage Canal. There would be no project effects on nesting turtles because there is no suitable nesting habitat.

To mitigate the potential effects on northwestern pond turtle and its aquatic habitat, the City will implement the mitigation measures discussed below.

CUMULATIVE IMPACTS

The proposed project would incrementally affect northwestern pond turtle and its habitat. Implementation of the mitigation measures identified below would reduce the project's incremental contribution to cumulative impacts to less than cumulatively considerable; would offset temporary and permanent losses incurred in the project area; and would ensure the continued existence of the species and its habitat in the project area.

MITIGATION MEASURES

HCP Mitigation Measures

The following conservation measures from the NBHCP are designed to avoid, minimize, or mitigate take of the Covered Species that are applicable to this project.

HCP Mitigation Measure V.A.1: Preconstruction surveys

Not less than 30 days or more than 6 months prior to commencement of construction activities on specific Authorized Development sites in the NBHCP area, a preconstruction survey of the site shall be conducted to determine the status and presence of, and likely impacts to, all Covered Species on the sites. However, preconstruction surveys for an individual species may be completed up to one year in advance if the sole period for reliable detection of that species is between May 1 and December 31. The applicant seeking to develop land will be responsible for contracting with qualified biological consultants to carry out the preconstruction surveys, and as necessary, implementing specific take minimization and other conservation measures set forth in the NBHCP and provided by the wildlife agencies.

The results of the preconstruction surveys along with recommended take minimization measures shall be documented in a report and shall be submitted to the Land Use Agency, USFWS, CDFG, and the NBC. Based upon the survey results, the Land Use Permittees will identify applicable take avoidance and other site-specific conservation measures, consistent with NBHCP, required to be carried out on the sites. The approved preconstruction survey documents and list of conservation measures will be submitted by the developer of the authorized development project to the applicable land use agency to demonstrate compliance with the NBHCP.

HCP Mitigation Measure V.A.3: General measures to minimize take

- **Tree Preservation:** Valley oaks and other large trees should be preserved whenever possible. Preserve and restore stands of riparian trees used by Swainson's hawks and other animals for nesting.
- **Native Plants:** Improve the wildlife habitat value of landscaped parks, buffers, and developed areas by planting trees and shrubs which are native to the Natomas Basin and therefore are used by native animals.
- **Protect Raptor Nests:** Avoid the raptor nesting season when scheduling construction near nests. Specific avoidance criteria are set forth in the species-specific measures later in this chapter.
- **Protected Plant/Animal Species, also referred to as "Special-Status Species":** Search for protected plant species during flowering season prior to construction and protected animal species during the appropriate season.

HCP Mitigation Measure V.A.5j: Measures to reduce take of northwestern pond turtle

Take of the northwestern pond turtle as a result of habitat destruction during construction activities, including the removal of irrigation ditches and drains, and during ditch and drain maintenance, will be minimized by the dewatering requirement described [in Section 2.3.5.2 below for Giant Garter Snake] (HCP Mitigation Measure V.A.5a).

City Bicycle Master Plan Mitigation Measures

Mitigation Measure BIO-4: Implement City BMP measures to reduce impacts to sensitive species

According to Measure 6.4-1 (Impacts to Special-Status Species) in the Draft EIR (Analytical Environmental Services 2003), all project-related activity in the Natomas Basin will comply with the conservation measures for special-status species covered by the NBHCP. The following measures are recommended to reduce the impacts to special-status species associated with the proposed project to a less-than-significant level.

- Prior to implementation of the specific amendments to the Bikeway Master Plan, a biological resources assessment shall be conducted for the project-specific area to determine the potential for and the presence of special-status species and nesting birds.
- If special-status species are determined to be present within and adjacent to bikeway alignments, measures shall be added to avoid direct and indirect impacts to these species. These measures could include, but would not be limited, to the following: the redesign of the bikeway alignment to avoid sensitive areas and timing construction activity to avoid disturbance during nesting and breeding periods. Measures to minimize direct and indirect impacts could include the fencing off of sensitive areas during construction activity, worker awareness training, posting signs in sensitive areas, and installing permanent structures to discourage off-trail riding through sensitive areas.
- Survey protocol and mitigation measures for federally and state threatened and endangered species shall follow guidelines developed by USFWS and CDFG for individual species.
- If nesting birds are determined to be within or immediately adjacent to specific bikeway alignments, construction activity shall be delayed until nestlings have fledged.

Project Specific Mitigation Measures

Mitigation Measure BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone

See full description above in Section 2.3.1.2.

Mitigation Measure BIO-3: Obtain and comply with State, Federal, and Local permits

See full description above in Section 2.3.2.5.

COMPENSATORY MITIGATION

No compensation is required for this species.

2.3.4.3 White-tailed Kite

White-tailed kite is a fully protected species under DFGC Sections 3503.5 and 3511, and the MBTA. The species has a restricted distribution in the United States, occurring only in California and western Oregon and along the Texas coast (American Ornithologists' Union 1983). The species is common in California's Central Valley lowlands. White-tailed kites nest in riparian and oak woodlands and forage in nearby grasslands, pastures, agricultural fields, and wetlands. Kites use nearby treetops for perching and nesting sites. Voles and mice are common prey species.

AFFECTED ENVIRONMENT

The closest CNDDDB (2008) nesting record for white-tailed kite is approximately 4 miles northeast of the project area. No white-tailed kites were observed either nesting or foraging during the field surveys. Willow riparian and black walnut habitat in the project area provides suitable nesting sites for white-tailed kites. Based on their occurrence in the project vicinity and the presence of suitable habitat, white-tailed kites could potentially nest in or adjacent to the project area.

ENVIRONMENTAL CONSEQUENCES

Impact BIO-5: Substantially adversely affect white-tailed kite

There will be no loss of nesting habitat; however, the noise associated with construction activities could result in the disturbance of nesting white-tailed kites if these activities occur during the breeding season (generally between March 15 and September 15) and nests are present within or adjacent to the construction area. These disturbances could cause nest abandonment and death of young or loss of reproductive potential at active nests located in or near the project area. Such disturbance would violate DFGC Section 3503.5 (active raptor nests) and the MBTA (50 CFR 10 and 21). This would be considered an adverse impact.

To mitigate the potential effects on white-tailed kite and its habitat, the City will implement the mitigation measures discussed below.

CUMULATIVE IMPACTS

The proposed project would incrementally affect white-tailed kites and its habitat. Implementation of the mitigation measures identified below would reduce the project's incremental contribution to cumulative impacts to less than cumulatively considerable; would offset temporary and permanent losses incurred in the project area; and would ensure the continued existence of white-tailed kites and their habitat in the project area.

MITIGATION MEASURES

HCP Mitigation Measures

HCP Mitigation Measure V.A.1: Preconstruction surveys

See full description above in Section 2.3.4.2.

HCP Mitigation Measure V.A.3: General measures to minimize take

See full description above in Section 2.3.4.2.

City Bicycle Master Plan Mitigation Measures

Mitigation Measure BIO-4: Implement City BMP measures to reduce impacts to sensitive species

See full description above in Section 2.3.4.2.

Project Specific Mitigation Measures

Mitigation Measure BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone

See full description above in Section 2.3.1.2.

Mitigation Measure BIO-5: Construct outside of the nesting season or conduct preconstruction surveys for nests and implement appropriate restrictions

To ensure that unauthorized take of white-tailed kites, migratory birds, and other non-special-status raptors does not occur during project construction as a result of direct nest removal or indirect disturbance (e.g., dust, noise, vibration), the City shall implement the following measures:

- a) When feasible, all tree removal will occur between September 15 and February 1 to avoid the breeding season of legally protected bird species that could use the area and to discourage birds from nesting near an upcoming construction area. This period may be modified if authorized by DFG.
- b) If avoidance during the nesting season is not feasible (i.e., if construction activities must take place between March 15 and September 15), then before grading may begin, all trees within 350 feet of any grading or earthmoving activity will be surveyed for active nests by a qualified biologist. If active nests are found within 350 feet of potential construction activity, a fence will be erected around the nest at a distance of up to 350 feet, depending on the species, from the edge of the canopy to prevent disturbance from construction and intrusions on the nest area. The appropriate buffer width will be determined by the City in consultation with DFG.
- c) No construction vehicles will be permitted within restricted areas unless directly related to the management or protection of the legally protected species.

- d) If a nest is abandoned despite efforts to minimize disturbance, and if the nestlings are still alive, the City will contact DFG and, subject to DFG approval, fund the recovery and hacking (controlled release of captive, reared young) of the nestlings.
- e) If the nest of a legally protected species is located in a tree designated for removal, the removal will be deferred until after September 15 or until the adults and young of the year are no longer dependent on the nest site, as determined by a qualified biologist.

COMPENSATORY MITIGATION

No compensation is required for this species.

2.3.4.4 Loggerhead Shrike

Loggerhead shrike is designated as a state species of special concern. It is a resident in the Sacramento area and occurs in lowlands and foothills throughout California. It is rare on coastal slopes north of Mendocino County, where it occurs only in winter. The shrike prefers open habitats for foraging with scattered shrubs, trees, posts, fences, utility lines, or other perches. It typically nests in shrubs and the lower branches of trees (Grinnell and Miller 1944).

AFFECTED ENVIRONMENT

There were no CNDDDB records for loggerhead shrike within 10 miles of the project area (CNDDDB 2008). The biologist observed a loggerhead shrike along the West Drainage Canal during the April 13, 2004, field survey, and willow riparian and black walnut habitat in the project area provides suitable nesting sites. Based on their occurrence in the project vicinity and the presence of suitable habitat, loggerhead shrikes could potentially nest in or adjacent to the project area.

ENVIRONMENTAL CONSEQUENCES

Impact BIO-6: Substantially adversely affect loggerhead shrike

There will be no loss of nesting habitat; however, the noise associated with construction activities could result in the disturbance of nesting loggerhead shrikes if these activities occur during the breeding season (generally between March 1 and July 31) and nests are present within or adjacent to the construction area. These disturbances could cause nest abandonment and death of young or loss of reproductive potential at active nests located in or near the project area. Such disturbance would violate DFGC Section 3503 (active bird nests) and the MBTA (50 CFR 10 and 21). This would be considered an adverse impact.

To mitigate the potential effects on loggerhead shrike and its nesting habitat, the City will implement the mitigation measures discussed below.

CUMULATIVE IMPACTS

The proposed project would incrementally affect loggerhead shrikes. Implementation of the mitigation measures identified below would reduce the project's incremental contribution to cumulative impacts to less than cumulatively considerable; would offset temporary and permanent losses incurred in the project area; and would ensure the continued existence of loggerhead shrikes in the project area.

MITIGATION MEASURES

HCP Mitigation Measures

HCP Mitigation Measure V.A.1: Preconstruction surveys

See full description above in Section 2.3.4.2.

HCP Mitigation Measure V.A.3: General measures to minimize take

See full description above in Section 2.3.4.2.

HCP Mitigation Measure V.A.5g: Measures to reduce take of loggerhead shrike

1. Prior to approval of Urban Development Permit, the City shall require a preconstruction survey for nesting shrikes.
2. If surveys identify an active loggerhead shrike nest that will be impacted by Authorized Development, the developer shall install brightly colored construction fencing that establishes a boundary of 100 feet from the active nest. No disturbance associated with Authorized Development shall occur within the 100-foot fenced area during the nesting season of March 1 through July 31. A qualified biologist, with concurrence from DFG must determine young have fledged or that the nest is no longer occupied prior to disturbance of the nest site.

City Bicycle Master Plan Mitigation Measures

Mitigation Measure BIO-4: Implement City BMP measures to reduce impacts to sensitive species

See full description above in Section 2.3.4.2.

Project Specific Mitigation Measures

Mitigation Measure BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone

See full description above in Section 2.3.1.2.

COMPENSATORY MITIGATION

No compensation is required for this species.

2.3.4.5 Nesting Non-Special-Status Migratory Birds, Including Raptors

The occupied nests and eggs of non-special-status migratory birds, including raptors, are protected by federal and state laws, including the MBTA and DFGC Sections 3503 and 3503.5.

AFFECTED ENVIRONMENT

Several non-special-status migratory birds and raptors could nest in and adjacent to the study area. The breeding season for most birds is generally from March 1 to August 15. A focused nest survey was conducted during the 2004 field surveys. Several migratory birds and raptors, including western kingbird, western scrub jay, and American kestrel, were observed near nests in the project area. Willow riparian habitat contains numerous trees and shrubs that provide suitable nesting habitat for several nonsensitive

migratory bird and raptor species, including American goldfinch, Wilson's warbler, American robin, western kingbird, song sparrow, red-tailed hawk, red-shouldered hawk, and great horned owl. These generally common species are locally and regionally abundant.

ENVIRONMENTAL CONSEQUENCES

Impact BIO-6: Substantially adversely affect migratory birds and raptors

Implementation of the proposed project could affect nesting birds, including raptors, if construction activities remove or otherwise disturb occupied nests during the breeding season (generally between March 15 and September 15). Construction activities during the breeding season that result in death of young or loss of reproductive potential would violate DFGC Sections 3503 (active bird nests) and 3503.5 (active raptor nests) and the MBTA. Impacts on nesting migratory birds, including raptors, would be considered an adverse effect if the subsequent population declines were large and affected the viability of the local populations.

To mitigate the potential effects on nesting raptors and migratory birds, the City will implement the mitigation measures discussed below.

CUMULATIVE IMPACTS

The proposed project would incrementally affect nesting birds, including raptors. Implementation of the mitigation measures identified below would reduce the project's incremental contribution to cumulative impacts to less than cumulatively considerable; would offset temporary and permanent losses incurred in the project area; and would ensure the continued existence of nesting birds, including raptors, in the project area.

MITIGATION MEASURES

HCP Mitigation Measures

HCP Mitigation Measure V.A.1: Preconstruction surveys

See full description above in Section 2.3.4.2.

HCP Mitigation Measure V.A.3: General measures to minimize take

See full description above in Section 2.3.4.2.

Project Specific Mitigation Measures

Mitigation Measure BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone

See full description above in Section 2.3.1.2.

Mitigation Measure BIO-5: Construct outside of the nesting season or conduct preconstruction surveys for nests and implement appropriate restrictions

See full description above in Section 2.3.4.3.

COMPENSATORY MITIGATION

No compensation is required for these species.

2.3.5 Threatened and Endangered Species

This section addresses species listed as threatened or endangered (see Table 2.3.5-1 at end of chapter).

2.3.5.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the ESA: *16 USC 1531*, et seq. (see also *50 CFR 402*). This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies are required to consult with the USFWS and NOAA Fisheries to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit.

California has enacted a similar law at the state level, CESA (DFGC Section 2050, et seq.). CESA emphasizes early consultation to avoid potential impacts on rare, endangered, or threatened species and to develop appropriate planning to offset project-caused losses of listed species' populations and their essential habitats. DFG is the agency responsible for implementing CESA. Section 2081 of the DFGC prohibits *take* of any species determined to be a threatened or endangered. Take is defined in Section 86 of the DFGC as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful projects under an incidental take permit. For projects requiring a Biological Opinion under Section 7 of the ESA, DFG may also authorize impacts on species listed under CESA by issuing a Consistency Determination under Section 2081 of the DFGC.

2.3.5.2 Giant Garter Snake

Giant garter snake (GGS) is federally and state-listed as threatened. Historically, giant garter snake was found in the Sacramento and San Joaquin Valleys from Butte County south to Buena Vista Lake in Kern County. Today, populations are found only in the Sacramento Valley and isolated portions of the San Joaquin Valley as far south as Fresno County. Giant garter snakes are still presumed to occur in 11 counties: Butte, Colusa, Fresno, Glenn, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo. USFWS recognizes only 13 separate populations of the species, with each population representing a cluster of discrete locality records (U.S. Fish and Wildlife Service 1999).

Giant garter snake inhabits wetlands, irrigation and drainage canals, rice fields, marshes, sloughs, ponds, low-gradient streams, and adjacent uplands in the Central Valley. The species requires adequate water during its active season (early spring through fall); emergent, herbaceous wetland vegetation for foraging habitat and escape cover; open areas for basking; and upland habitat, high above the high-water line, with rodent burrows for hibernating during winter. Riparian woodlands do not provide suitable habitat because potential basking areas are often shaded. Giant garter snakes do not inhabit large rivers or wetlands with sand, gravel, or rock substrates. The species tends to stay within 200 feet of wetland habitat. It hibernates from early October to late March in burrows located in adjacent uplands, especially grasslands, high above the high-water line. The breeding season begins soon after the species emerges

from hibernating burrows, from March to May, and resumes briefly during September (U.S. Fish and Wildlife Service 1999).

AFFECTED ENVIRONMENT

The CNDDDB (2008) lists numerous (35+) records for GGS within a 10-mile radius of the project area. The closest record is located approximately 1.0 mile upstream of the project area in the East Drainage Canal (CNDDDB 2008).

ENVIRONMENTAL CONSEQUENCES

Impact BIO-6: Substantially adversely affect giant garter snake habitat

Aquatic habitat for GGS in the action area consists of the West Drainage Canal, East Drainage Canal, and the Main Drainage Canal. The upland habitat in the action area consists of ruderal grassland and suitable agricultural lands within 200 feet of all aquatic habitat.

The area of direct effect within the project area consists of the project footprint, which includes a 20-foot-wide paved path with gravel shoulders and two adjacent staging areas (see Figure 1.3-1). Portions of the paved path will be aboveground, supported by a total of five piles 0.006 acres each. Four of the piles occur in potential GGS upland habitat and are included in the calculations for permanent habitat loss summarized below. The fifth pile is located in the median strip of I-80 and was not considered potential GGS habitat. Installation of a concrete lining on the canal bottom under the Canal Bridge would result in the placement of 0.09 acre of permanent fill into the West Drainage Canal; however, this was not considered as habitat loss for GGS.

The West Drainage Canal will be dewatered by temporary dams during construction of the Canal Bridge in an area 65.62 feet wide × 150 feet long. A total of 0.23 acre of aquatic habitat would be temporarily disturbed during construction activities. The temporary dams will be constructed from bank to bank and will impede any aquatic wildlife movement within the channel for the 5 to 6 week construction period. Water will be pumped out of the construction area only for drainage purposes. Only the area of aquatic habitat within the temporary dams was included in the calculations of temporary disturbances to GGS aquatic habitat during construction.

The amount of temporary and permanent habitat loss is summarized in Table 2.3.5-2. Habitat losses fall into three categories:

- Category 1 habitat outside of the HCP area where no mitigation fees have been paid; this refers to the West Drainage Canal and lands to the west;
- Category 2 habitat within the HCP area where mitigation fees have been paid and no further compensation is required; this refers to all lands east of the West Drainage and on both the north and south sides of I-80; and
- Category 3 habitat outside of the HCP area where the lower northwest interceptor (LNWI) project crosses the proposed project and where mitigation fees have been paid. The LNWI project crosses through the project area on the north side of I-80, paralleling the freeway and crossing under the West Drainage Canal. The USACE has received its Biological Opinion from USFWS for impacts on GGS from the LNWI project. USFWS required a 2:1 ratio for temporary effects and 3:1 ratio for permanent effects on GGS habitat for the LNWI project. USFWS may agree that this project does not need to compensate for permanent losses already paid for by LNWI project but will need to compensate for temporary losses.

Table 2.3.5-2. Giant Garter Snake Habitat Affected by the Proposed Project

Project Area	Temporary Upland (Acres)	Temporary Aquatic (Acres)	Permanent Upland (Acres)
Category 1 (outside HCP area, no fees paid)	1.08	0.23	0.66 (from POC and two piles)
Category 2 (in HCP area, fees paid)	0.84	0	0.54 (from POC and two piles)
Category 3 (LNWI GGS mitigation area)	NA	0	0.08
Total (fees not paid)	1.08	0.23	0.66

The following information reflects acreage impacts from Category 1 only and does not subtract out the habitat acreage affected by the LNWI. A total of 1.08 acres of upland habitat and 0.23 acres of aquatic habitat will be temporarily disturbed by construction activities and by traffic (construction vehicles and other vehicles) within the staging areas. The planned bicycle and pedestrian path will result in the permanent loss of 0.66 acres of upland habitat. These activities could excavate or collapse burrows used by GGS, and construction equipment could kill or injure GGS. Soil stockpiled during construction of the embankments could spill into the canals and smother GGS. Also, oil spills or fuel leaks from construction equipment, if not properly cleaned up, could spill into the canals that provide habitat. Spills could kill GGS outright or could reduce their prey base.

INDIRECT ENVIRONMENTAL CONSEQUENCES

Soil eroding into canals after construction has been completed could affect water quality and could reduce the prey base for GGS. Oils and other hazardous materials could leak from construction equipment or from vehicles using the canal maintenance road and, if not properly cleaned up and disposed of, could wash into the canals and affect water quality.

Direct and indirect effects identified above have the potential to degrade GGS habitat and could result in the subsequent loss of habitat for and direct mortality of a federally listed species. A separate biological assessment has been prepared to address adverse effects on GGS occurring on the north side of I-80.

To mitigate the potential effects on GGS and its habitat, the City will implement the mitigation measures discussed below.

CUMULATIVE EFFECTS

The proposed project would incrementally affect GGS and its habitat. Implementation of the mitigation measures identified below would reduce the project's incremental contribution to cumulative impacts to less than cumulatively considerable; would offset temporary and permanent losses incurred in the project area; and would ensure the continued existence of the species and its habitat in the project area.

MITIGATION MEASURES

HCP Mitigation Measures

The following conservation measures from the NBHCP are designed to avoid, minimize, or mitigate take of the Covered Species that are applicable to this project.

HCP Mitigation Measure V.A.1: Preconstruction surveys

See full description above in Section 2.3.4.2.

HCP Mitigation Measure V.A.3: General measures to minimize take

See full description above in Section 2.3.4.2.

HCP Mitigation Measure V.A.5a: Measures to reduce take of giant garter snake

The following mitigation measures taken from the NBHCP will be implemented to avoid and minimize possible effects on GGS and its habitat (City of Sacramento et al. 2003)

- All construction activities within the Natomas Basin involving disturbance of giant garter snake habitat will be conducted between May 1 and September 30, which is the active period for giant garter snakes. Conducting construction activities during this period lessens direct impacts on the snake because they are active and can avoid danger. If construction activities are necessary in giant garter snake habitat between October 1 and April 30, the USFWS Sacramento Office shall be contacted to determine whether additional measures are necessary to minimize and avoid take. Measures recommended by USFWS will be implemented.
- Preconstruction surveys for giant garter snake, as well as other NBHCP Covered Species, must be completed for all development projects by a qualified biologist approved by USFWS. If any giant garter snake habitat is found within a specific site, the following additional measures shall be implemented to minimize disturbance of habitat and harassment of GGS, unless such project is specifically exempted by USFWS.
- Between April 15 and September 30, any dewatered habitat must remain dry, with no puddled water, for at least 15 consecutive days before workers excavate or fill the dewatered habitat. Make sure dewatered habitat does not continue to support GGS prey (e.g., fish, tadpoles, aquatic insects), which could detain or attract snakes into the area. If a site cannot be completely dewatered, netting and salvage of prey items may be necessary. This measure removes aquatic habitat and allows GGS to leave on its own.
- A qualified biologist will conduct a preconstruction survey for GGS, no more than 24 hours prior to the start of construction activities (site preparation and grading). If construction activities stop on the project site for a period of two or more weeks, a new GGS survey will be completed no more than 24 hours prior to the restart of construction activities.
- Confine clearing to the minimal area necessary to facilitate construction activities. To ensure that construction equipment and personnel do not affect upland and aquatic habitat for giant garter snake outside of the construction corridor, orange barrier fencing will be erected to clearly define the habitat to be avoided.
- Construction personnel will participate in a USFWS-approved worker environmental awareness program. A USFWS-approved biologist will inform all construction personnel about the life history of giant garter snakes; how to identify species and their habitats, and what to do if a GGS is encountered during construction activities; and the terms and conditions of the biological opinion. Proof of this instruction will be submitted to the USFWS Sacramento Office.
- If a live GGS is encountered during construction activities, immediately notify USFWS and the project's biological monitor. The biological monitor or his assignee shall do the following:

1. Stop construction activity in the vicinity of the snake. Monitor the snake and allow the snake to leave on its own. The monitor shall remain the area for the remainder of the work day to make sure the snake is not harmed or if it leaves the site, does not return. Escape routes for giant garter snake should be determined in advance of construction and snakes should always be allowed to leave on their own. If a GGS does not leave on its own within one working day, further consultation with USFWS is required.
- Upon locating dead, injured or sick threatened or endangered wildlife species, the project proponent must notify within one working day the Service's Division of Law Enforcement (2800 Cottage Way, Sacramento, CA 95825) or the Sacramento Fish and Wildlife Office (2800 Cottage Way, Room W-2605, Sacramento, CA 95825, telephone 916/414-6600). Written notification to both offices must be made within three calendar days and must include the date, time, and location of the finding of a specimen and any other pertinent information.
 - Fill of construction debris may be used by GGS as an over-wintering site. Therefore, upon completion of construction activities, any temporary fill and construction debris shall be removed from the site. If this material is situated near undisturbed GGS habitat and it is to be removed between October 1 and April 30, it shall be inspected by a qualified biologist to assure that GGS are not using it as hibernacula.
 - No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes will be placed on a project site when working within 200 feet of snake aquatic habitat. Possible substitutions include coconut coir matting, tactified hydroseeding compounds, or other material approved by USFWS.

City Bicycle Master Plan Mitigation Measures

Mitigation Measure BIO-4: Implement City BMP measures to reduce impacts to special-status species

See full description in Section 2.3.4.2.

Project Specific Mitigation Measures

Mitigation Measure BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone

See full description above in Section 2.3.1.2.

Mitigation Measure BIO-3: Obtain and comply with State, Federal, and Local permits

See full description above in Section 2.3.2.5. Compensatory Mitigation

Mitigation Measure BIO-6: Compensate for the temporary and permanent loss of GGS habitat

Approximately 1.08 acres of upland GGS habitat and 0.23 acres of aquatic habitat will be temporarily affected by construction activities. Approximately 0.66 acres of upland habitat will be permanently lost as a result of construction activities (Table 2.3.5-2).

Approximately 0.08 acres of permanent habitat loss on the north side of I-80 and west of the West Drainage Canal have already been compensated for by the LNWI project. In addition, habitat compensation fees have already been paid for all areas south of I-80 per the NBHCP (Johnson pers. comm.). Habitat compensation fees may be required for temporary and permanent habitat losses only on

the west side of the West Drainage Canal minus the habitat compensation already made for the LNWI (pending a decision from USFWS).

2.3.5.3 Swainson's Hawk

Swainson's hawk is state listed as threatened by DFG and is protected under the MBTA and DFGC Section 3503.5. In the Central Valley, this hawk typically nests in oak or cottonwood trees in or near riparian habitats, in oak groves, in roadside trees, and in lone trees. Swainson's hawks prefer nesting sites that provide sweeping views of nearby foraging grounds that consist of grasslands, irrigated pasture, alfalfa, hay, and row and grain crops. Swainson's hawks are migratory, wintering from Mexico to Argentina and breeding in California and elsewhere in the western United States. The raptor generally arrives in the Central Valley in mid-March and begins courtship and nest construction immediately upon arrival at the breeding sites. The young fledge in early July, and most Swainson's hawks leave their breeding territories by late August or early September (DFG 1994).

Populations of Swainson's hawks have declined by more than 90% from historical levels (DFG 1994). Population declines have been attributed to the continuing loss of suitable nesting and foraging habitat throughout the Central Valley. This loss has resulted from urban development, incompatible agricultural practices, and flood control projects (DFG 1994).

AFFECTED ENVIRONMENT

The closest CNDDDB (2008) nesting record for Swainson's hawk is a tree on the west bank of the Main Drainage Canal immediately adjacent to the project area. However, this nest has not been active in recent years (Jones & Stokes file information), and no birds were seen on the nest during either the March 29 or the April 13, 2004, field surveys. The nearest active nest is approximately 0.75 miles southwest of the project area near the West El Camino overpass (CNDDDB 2008 and Jones & Stokes file information). Six Swainson's hawks were observed foraging over the project area during the March 29, 2004, survey, when a tractor was disking weeds in the fields. No hawks were observed during the February 7, 2008, survey, which is a little early for hawks to be present in the Sacramento area. Based on their occurrence in the project vicinity and the presence of an historical nest site, Swainson's hawk could potentially nest in or adjacent to the project area.

ENVIRONMENTAL CONSEQUENCES

Impact BIO-7: Substantially adversely affect Swainson's hawk

As described above for the GGS, portions of the proposed project (specifically everything on the east side of the canals) have paid habitat compensation fees for covered species under the HCP (Johnson pers. comm.). Therefore, the following acreage information is only for habitat not previously compensated for, which includes all lands north of I-80 and west of the West Drainage canal. Construction of the POC could result in the temporary loss of 1.58 acres and permanent loss of 0.66 acres of foraging habitat for Swainson's hawks. This effect is considered minimal because part of the loss is temporary and the permanent portion is extremely small.

Although there will be no loss of nesting habitat, noise from construction activities could result in the disturbance of nesting Swainson's hawk if these activities occur during the breeding season (generally between March 15 and September 15) and a nest is present within or adjacent to the construction area. These disturbances could cause nest abandonment and death of young or loss of reproductive potential at

active nests located in or near the project area. The proposed project could result in a substantial adverse effect (through loss of eggs or young) on this species that is listed as threatened under CESA.

To mitigate the potential effects on Swainson's hawk and its habitat, the City will implement the mitigation measures discussed below.

CUMULATIVE IMPACTS

The proposed project would incrementally affect Swainson's hawk and its habitat. Implementation of the mitigation measures identified below would reduce the project's incremental contribution to cumulative impacts to less than cumulatively considerable; would offset temporary and permanent losses incurred in the project area; and would ensure the continued existence of Swainson's hawk and its habitat in the project area.

MITIGATION MEASURES

HCP Mitigation Measures

HCP Mitigation Measure V.B.5b: Measures to reduce take of Swainson's hawk

To ensure that possible impacts on nesting Swainson's hawks are less than significant, and that unauthorized take of Swainson's hawk does not occur, the City shall implement the following measures to reduce nest disturbance taken from the NBHCP:

1. Prior to the commencement of development activities at any development site within the NBHCP area, a preconstruction survey for nesting Swainson's hawks shall be conducted in suitable habitat within 0.5 mile of the project area. The surveys will be used to determine if any Swainson's hawk nest trees will be removed onsite, or if active nests occur on or within 0.5 mile of the site. These surveys shall be conducted according to the Swainson's Hawk Technical Advisory Committee's (May 31, 2000) methodology or updated methodologies, as approved by the Service and CDFG, using experienced Swainson's hawk surveyors.
2. If breeding Swainson's hawk (i.e., exhibiting nest building or nesting behavior) are identified, no new disturbances (e.g., heavy equipment operation associated with construction) will occur within 0.5 mile of an active nest between March 15 and September 15, or until a qualified biologist, with concurrence by DFG, has determined that young have fledged or that the nest is no longer occupied. If the active nest is located within 0.25 mile) of existing urban development, the new disturbance zone can be limited to 0.25 mile versus 0.5 mile. Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within 0.50 mile of an active nest are not restricted.
3. If construction or other project related activities which may cause nest abandonment or forced fledging are proposed within the 0.25 mile zone, intensive monitoring (funded by the project sponsor) by a DFG-approved raptor biologist will be required. Exact implementation of this measure will be based on specific information at the project site.

The above measures will apply to all of the project area. However, for the portion of this project outside of the HCP area, the City shall also consult directly with DFG for their concurrence with this approach and to determine whether additional permits (e.g., incidental take permit under Section 2081 of CESA) are required.

City Bicycle Master Plan Mitigation Measures

Mitigation Measure BIO-4: Implement City BMP measures to reduce impacts to sensitive species

See full description above in Section 2.3.4.2.

Project Specific Mitigation Measures

Mitigation Measure BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone

See full description above in Section 2.3.1.2.

Mitigation Measure BIO-3: Obtain and comply with State, Federal, and Local permits

See full description above in Section 2.3.2.5.

COMPENSATORY MITIGATION

DFG may require compensation during its review.

2.3.6 Noxious Weeds

Roads, highways, and related construction projects are principal dispersal pathways for exotic pest plants. The introduction and spread of exotic pest plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. Exotic pest plants include species designated as federal noxious weeds by the U.S. Department of Agriculture and species listed by the California Department of Food and Agriculture (CDFA 2001).

2.3.6.1 Affected Environment

The project area is highly disturbed and supports suitable habitat conditions for a variety of noxious weeds to colonize and spread. Three noxious weed species were documented in the project area during botanical surveys (Table 2.3.6-1). These three species are common throughout the region and typically colonize disturbed sites.

Table 2.3.6-1. Noxious Weeds Located in the Project Area

Species	CDFA	CalEPPC
Yellow star-thistle (<i>Centaurea solstitialis</i>)	C	A-1
Bermuda grass (<i>Cynodon dactylon</i>)	C	-
Himalayan blackberry (<i>Rubus discolor</i>)	-	A-1

Notes:

The CDFA and California Exotic Pest Plant Council (CalEPPC) lists assign ratings that reflect CDFA and CEPPC views of the statewide importance of the pest, the likelihood that eradication or control efforts would be successful, and the present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances. The Sacramento County Agricultural Commissioner does not currently have a list of invasive species on which action will be taken.

CDFA categories are defined as follows:

C = state-endorsed holding action and eradication only when found in a nursery; action to retard spread outside of nurseries at the discretion of the commissioner

The CEPPC categories are defined as follows:

A-1 = widespread pest plants that are aggressive and displace native plants and natural habitats

2.3.6.2 Environmental Consequences

Impact BIO-8: Potential spread of noxious weed species through project implementation

The noxious weed species documented in the project area are common throughout the project region. Construction activities have the potential to further spread these species and result in the introduction of new noxious weed species. The spread of existing infestations or the introduction of new noxious weed species would be in conflict with Executive Order 13112: Prevention and Control of Invasive Species. For this reason, the potential spread and introduction of noxious weeds in the project area is considered a potential adverse effect.

To minimize the potential for introducing new noxious weeds or spreading existing infestations through the project area, the City will implement the mitigation measure discussed below.

2.3.6.3 Cumulative Impacts

The proposed project would incrementally affect the potential spread and introduction of noxious weeds in the project area. Implementation of the mitigation measures identified below would reduce the project's incremental contribution to cumulative impacts to less than cumulatively considerable.

2.3.6.4 Mitigation Measures

Project Specific Mitigation Measure

Mitigation Measure BIO-7: Avoid the introduction or spread of noxious weeds in the project area

To avoid the introduction or spread of noxious weeds into previously uninfested areas the City will implement the following measures:

- Treat small, isolated infestations with approved eradication methods at an appropriate time to prevent and/or destroy viable plant parts or seeds.

- Wash all equipment before entering the project area. Equipment washing will be done off site at a paved facility (located away from sensitive biological resource areas).
- Revegetate and restore disturbed areas immediately after construction is complete. The revegetation portion of the SWPPP will contain specifications for using certified weed-free native and nonnative mixes. The SWPPP will also specify that all disturbed areas will be weeded (if necessary) and reseeded in the following years if determined to be necessary.

COMPENSATORY MITIGATION

None required.

Chapter 2. Affected Environment, Environmental Consequences, and Mitigation Measures

Common Name	Scientific Name	Status		Geographic Distribution	Habitat Requirements	Blooming Period	Potential Occurrence in Study Area
		Federal ^a	State ^a CNPS ^a				
<p>NOTES:</p> <p>asl = above sea level</p> <p>^a <u>Status Explanations</u></p> <p>Federal</p> <p>E = Listed as endangered under FESA</p> <p>T = Listed as threatened under FESA</p> <p>State</p> <p>E = Listed as endangered under CESA</p> <p>California Native Plant Society</p> <p>1B = List 1B species: rare, threatened, or endangered in California and elsewhere</p> <p>2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere</p> <p>3 = List 3 species: more information is needed about this plant</p> <p>4 = List 4 species: plants of limited distribution (Watch List)</p> <p>1 = Listed as seriously endangered in California</p> <p>2 = Listed as fairly endangered in California</p> <p>3 = Listed as not very endangered in California</p> <p>- = No listing</p> <p><u>Likelihood to Occur within the Study Area</u></p> <p>High: CNDDDB, or other documents, records the known occurrence of the plant in the region or project vicinity. Suitable habitat conditions and suitable microhabitat conditions are present.</p> <p>Moderate: CNDDDB, or other documents, records the known occurrence of the plant in the region or project vicinity. Suitable habitat conditions are present but suitable microhabitat conditions are not.</p> <p>Low: CNDDDB, or other documents, does not record occurrence of the plant in the region or project vicinity. Habitat conditions are of poor quality.</p> <p>None: CNDDDB, or other documents, does not record occurrence of the plant in the region or project vicinity. Suitable habitat is not present in any condition.</p>							

Table 2.3.5-1. Special-Status Wildlife Species Documented or Identified during the Pre-Field Investigation as Having the Potential to Occur in the I-80 Study Area

Common Name	Scientific Name	Status ^a		California Distribution	Habitats	Potential Occurrence in Study Area
		Federal	State			
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	-	Stream side habitats below 3,000 feet asl throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberry shrub is the host plant	None; no suitable habitat in the study area. The nearest occurrence is located 1.2 miles south of the study area (CNDDDB 2008).
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T		Found in Central Valley, central and south Coastal Ranges from Tehama County to Santa Barbara County; isolated populations also in Riverside County	Vernal pools; also sandstone rock outcrop pools	None; no suitable habitat in the study area. The nearest occurrence is located 3.7 miles east-northeast of the study area (CNDDDB 2008).
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	E		Found in Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	None; no suitable habitat in the study area. The nearest occurrence is located 5.7 miles northeast of the study area (CNDDDB 2008).
Western spadefoot	<i>Scaphiopus hammondi</i>	-	SSC	Found in Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California	Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands	None; no suitable habitat in the study area. No occurrences within 10 miles of the study area (CNDDDB 2008).
California tiger salamander	<i>Ambystoma californiense</i>	T	SSC	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County; Central Valley from Fresno north to the Gridley/Sutter Buttes area; has been extirpated from areas south of Fresno	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	None; no suitable habitat in the study area. No occurrences within 10 miles of the study area (CNDDDB 2008).
Giant garter snake	<i>Thamnophis gigas</i>	T	T	Central Valley from Fresno north to the Gridley/Sutter Buttes area; has been extirpated from areas south of Fresno	Sloughs, canals, and other small water-ways where there is a prey base of small fish and amphibians; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	High; the nearest occurrence is located 1.4 miles upstream of the study area in the East Drainage Canal (CNDDDB 2008). The canals provide suitable aquatic habitat, and adjacent ruderal grasslands provide suitable upland habitat.
Northwestern pond turtle	<i>Clemmys marmorata marmorata</i>	-	SSC	Occurs along the central coast of California east to the Sierra Nevada and along the southern California coast inland to the Mojave and Sonora Deserts; range overlaps with that of the northwestern pond turtle throughout the Delta and in the Central Valley	Woodlands, grasslands, and open forests; aquatic habitats, such as ponds, marshes, or streams, with rocky or muddy bottoms and vegetation for cover and food	Moderate; the nearest occurrence is located 5.7 miles northeast of the study area (CNDDDB 2008). The canals provide suitable aquatic habitat.
Bald eagle	<i>Haliaeetus leucocephalus</i>	-	E/FP	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean	Low; rare winter occurrences along the Sacramento River (CNDDDB 2008).

Chapter 2. Affected Environment, Environmental Consequences, and Mitigation Measures

Common Name	Scientific Name	Status ^a		California Distribution	Habitats	Potential Occurrence in Study Area
		Federal	State			
Aleutian Canada goose	<i>Branta canadensis leucopareia</i>	D	-	Only winters in the Central Valley of California	Grazes in marshes and stubblefields, roosts in water	Low; could forage in agricultural fields and roost in the canals.
Swainson's hawk	<i>Buteo swainsoni</i>	-	T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley; highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks, cottonwoods and other native and non-native trees in riparian habitats, tree rows, and lone trees; forages in grasslands, irrigated pastures, and grain, hay, and row crops	High; inactive nest is located adjacent to the study area on the west side of the Natomas Main Drainage Canal. A number of active nests are within 10 miles of the study area (CNDDB 2008). Six adults were observed flying over project study area during March 29, 2004, survey.
White-tailed kite	<i>Elanus leucurus</i>	-	FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands	High; nearest active nesting occurrence is located 3.7 miles northeast of the study area (CNDDB 2008). Cottonwood-willow riparian provides suitable roosting habitat, and agricultural fields provide suitable foraging habitat.
Western burrowing owl	<i>Athene cunicularia hypugea</i>	-	SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows	Low; the nearest occurrence was in 1991, 1.2 miles north of the study area (CNDDB 2008). Not observed in 2004, possibly because of new development. Potential nesting and foraging habitat along canal banks.
Loggerhead shrike	<i>Lanius ludovicianus</i>	-	SSC	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	High; observed foraging along West Main Drainage during April 13, 2004 survey. Could nest in willow riparian and black walnut habitat in study area.
Double-crested cormorant	<i>Phalacrocorax auritus</i>	-	SSC	Winters along the entire California coast and inland over the Coast Ranges into the Central Valley from Tehama County to Fresno County; a permanent resident along the coast from Monterey County to San Diego County, along the Colorado River and the Imperial River	Rocky coastlines, beaches, inland ponds, and lakes; needs open water for foraging and nests in riparian forests or on protected islands, usually in snags	High; observed in canal during March 29, 2004, survey.
Mountain plover	<i>Charadrius montanus</i>	-	SSC	Does not breed in California; in winter, found in the Central Valley south of Yuba County, along the coast in parts of San Luis Obispo, Santa Barbara, Ventura, and San Diego Counties; parts of Imperial, Riverside, Kern, and Los Angeles Counties	Occupies open plains or rolling hills with short grasses or very sparse vegetation; nearby bodies of water are not needed; may use newly plowed or sprouting grainfields	Low; nearest occurrence 11.5 miles northwest of study area, near Woodland (CNDDB 2008). May be present in agricultural areas during winter.

Chapter 2. Affected Environment, Environmental Consequences, and Mitigation Measures

Common Name	Scientific Name	Status ^a		California Distribution	Habitats	Potential Occurrence in Study Area
		Federal	State			
Bank swallow	<i>Riparia riparia</i>	-	T	The state's largest remaining breeding populations are along the Sacramento River from Tehama County to Sacramento County and along the Feather and lower American Rivers, in the Owens Valley; nesting areas also include the plains east of the Cascade Range south through Lassen County, northern Siskiyou County, and small populations near the coast from San Francisco County to Monterey County	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam to allow digging; forages for insects over open water and cropland	None; nearest occurrence is located 1.7 miles southeast near the Business-80 bridge over the American River (CNDDDB 2008). Canals in the study area do not provide suitable nesting habitat for bank swallows.
Tricolored blackbird	<i>Agelaius tricolor</i>	-	SSC	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony	Low; numerous occurrences within a 10-mile radius of the study area (CNDDDB 2008). No nesting habitat but the ruderal grasslands and agricultural crops provide foraging habitat in the study area.
White-faced ibis	<i>Plegadis chihi</i>	-	SSC	Both resident and winter populations on the Salton Sea and in isolated areas in Imperial, San Diego, Ventura, and Fresno Counties; breeds at Honey Lake (Lassen County), at Mendota Wildlife Management Area (Fresno County), and near Woodland (Yolo County)	Prefers freshwater marshes with tules, cattails, and rushes, but may nest in trees and forage in flooded agricultural fields, especially flooded rice fields	Low; no occurrences recorded within a 10-mile radius of the study area (CNDDDB 2008). Could forage in agricultural habitat in the study area.
Hoary bat	<i>Lasiurus cinereus</i>	-	SSC	Common and widespread throughout most of California	Hoary bats spend the summer days hidden in the foliage of trees. Much like the red bat, they choose a leafy site open beneath them, and usually 10-15 feet above the ground. Hoary bats are solitary roosting bats and keep themselves well hidden	Low; suitable roosting habitat in cottonwood riparian habitat the study area. One occurrence approximately 3 miles south of the study area (CNDDDB 2008).

Chapter 2 Affected Environment, Environmental Consequences, and Mitigation Measures

Common Name	Scientific Name	Status ^a		California Distribution	Habitats	Potential Occurrence in Study Area
		Federal	State			

NOTES:

asl = above sea level

^a Status Explanations:

-- = No status.

Federal

- E = listed as endangered under FESA
- T = listed as threatened under FESA

State

- E = Listed as endangered under CESA
- T = Listed as threatened under CESA
- FP = Fully protected under the DFGC
- SSC = Species of special concern in California

Chapter 3 List of Preparers

3.1 City of Sacramento

Zuhair Amawi, City Project Manager

Scott Johnson, Assistant Planner

3.2 URS Corporation

Gary Horton, Project Manager

Sami Kalantari, Project Engineer

3.3 ICF Jones & Stokes Associates

Maggie Townsley, Project Director

Wendy Johnson, Project Manager

Stephanie Myers, Wildlife Biologist

Sue Bushnell, Botanist

Mark Bowen: Cultural Resources

Shannon Hatcher: Air Quality and Noise

Wendy Johnson and Bonnie Chiu: Land Use, Population/Housing, Utilities, Hazards, Aesthetics

Wendy Johnson and John Jarecki: Water Resources, Transportation/Circulation, Energy, Hazards, Utilities

Wendy Johnson and Kristin Hammond: Recreation and Public Services

John Durnan, Graphics

Joan Lynn, Editor

Ken Cherry, Editor

This Page Intentionally Left Blank

Appendix A CEQA Environmental Significance
Checklist

ENVIRONMENTAL SIGNIFICANCE CHECKLIST

Supporting documentation of all CEQA checklist determinations is provided in Chapter 2 of this Initial Study/Mitigated Negative Declaration. Documentation of "No Impact" determinations is provided at the beginning of Chapter 2. Discussion of all impacts and mitigation measures under the appropriate topic headings in Chapter 2.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
--	--------------------------------	---	------------------------------	-----------

V. CULTURAL RESOURCES -- Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

VI. GEOLOGY AND SOILS -- Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
--------------------------------	---	------------------------------	-----------

VII. HAZARDS AND HAZARDOUS MATERIALS –

Would the project:

- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

VIII. HYDROLOGY AND WATER QUALITY -- Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
--------------------------------	---	------------------------------	-----------

XI. NOISE --

Would the project result in:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XII. POPULATION AND HOUSING -- Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Less Than Significant			
Potentially Significant Impact	With Mitigation Incorporation	Less Than Significant Impact	No Impact	

XIII. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. RECREATION –

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

XV. TRANSPORTATION/TRAFFIC -- Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

e) Result in inadequate emergency access?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

f) Result in inadequate parking capacity?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVI. UTILITIES AND SERVICE SYSTEMS –

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVII. MANDATORY FINDINGS OF SIGNIFICANCE –

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B Mitigation Summary

Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
Land Use			
LU-1: Potential alteration of the present or planned use of an area	Significant	LU-1: Locate Construction Staging Areas away from Residential Areas LU-2: Limit Construction Traffic LU-3: Provide Advance Notice of Construction Activities	Less than Significant
LU-2: Potential effects on agricultural resources or operation	Less than Significant	No Mitigation Is Required	--
Aesthetics			
AES-1: Substantially change scenic resources	Less than Significant	No Mitigation Is Required	--
AES-2: Degrade visual character in project area	Less than Significant	No Mitigation Is Required	--
AES-3: Create a new source of light and glare which would adversely affect views	Less than Significant	No Mitigation Is Required	--
Cultural Resources			
CUL-1: Cause a substantial adverse change in significance of a historic resource	Less than Significant	No Mitigation Is Required	--
Hydrology, Water Quality, Stormwater, and Runoff			
HYD-1: Potential alteration of existing drainage patterns or absorption rates	Less than Significant	No Mitigation Is Required	--
HYD-2: Potential to increase flooding hazards	Less than Significant	No Mitigation Is Required	--
HYD-3: Potential impacts on water quality	Less than Significant	No Mitigation Is Required	--
HYD-4: Potential to deplete or interfere with groundwater supplies and recharge	Less than Significant	No Mitigation Is Required	--
Geology, Soil, and Seismicity			
GEO-1: Potential to expose people to the risk of strong seismic events, liquefaction, or landslides	Less than Significant	No Mitigation Is Required	--
GEO-2: Potential to locate structures on expansive soil or soils that are inadequate	Less than Significant	No Mitigation Is Required	--
GEO-3: Potential effect on unique geologic resource	Less than Significant	No Mitigation Is Required	--
Paleontology			
PAL-1: Potential effects on sensitive paleontological resources	Significant	PAL-1: During construction activities, if sensitive paleontological resources are encountered, work will be stopped immediately and recording and salvage activities will be instituted	Less than Significant

Appendix B. Mitigation Summary

Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
Hazardous Waste/Materials			
HAZ-1: Potential for accidental explosion or release of hazardous substances	Significant	HAZ-1: Comply with Standard Specifications for Public Works Construction and the SWPPP	Less than Significant
HAZ-2: Potential presence of Aerially Deposited Lead in soils	Significant	HAZ-1: Comply with Standard Specifications for Public Works Construction and the SWPPP HAZ-2: Conduct site investigation for Aerially Deposited Lead	Less than Significant
Air Quality			
AIR-1: Potential for construction-related emissions	Significant	AIR-1: Reduce NO _x emissions from off-road diesel-powered equipment AIR-2: Submit an off-road construction equipment inventory to the SMAQMD AIR-3: Control visible emissions from off-road diesel-powered equipment AIR-4: Phase construction activities	Less than Significant
AIR-2: Potential for fugitive dust emissions	Significant	AIR-5: Control fugitive dust emissions	Less than Significant
Noise			
NO-1: Noise impacts on noise-sensitive receptors	Significant	NO-1: Limit hours for construction activities NO-2: Equip engines with silencers	Less than Significant
Biological Resources			
BIO-1: Substantial adverse effect on riparian habitat	Significant	BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone	Less than Significant
BIO-2: Substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act	Significant	BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone BIO-2: Implement City BMP measures to reduce impacts on Waters of the U.S. BIO-3: Obtain and comply with State, Federal, and Local Permits	Less than Significant
BIO-3: Substantial adverse effect on sensitive natural community identified in local or regional plans, policies, and regulations of the California Department of Fish and Game or U.S. Fish and Wildlife Service	Less than significant		--

Appendix B. Mitigation Summary

Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
BIO-4: Substantially adversely affect northwestern pond turtle	Significant	<p>HCP V.A.1: Preconstruction surveys</p> <p>HCP V.A.3: General measures to minimize take</p> <p>HCP V.A.5j: Measures to reduce take of northwestern pond turtle</p> <p>BIO-4: Implement City BMP measures to reduce impacts to sensitive species</p> <p>BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone</p> <p>BIO-3: Obtain and comply with State, Federal, and Local permits</p>	Less than Significant
BIO-5: Substantially adversely affect white-tailed kite	Significant	<p>HCP V.A.1: Preconstruction surveys</p> <p>HCP V.A.3: General measures to minimize take</p> <p>BIO-4: Implement City BMP measures to reduce impacts to sensitive species</p> <p>BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone</p> <p>BIO-5: Construct outside of the nesting season or conduct preconstruction surveys for nests and implement appropriate restrictions</p>	Less than Significant

Appendix B. Mitigation Summary

Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
BIO-6: Substantially adversely affect loggerhead shrike	Significant	HCP V.A.1: Preconstruction surveys HCP V.A.3: General measures to minimize take HCP V.A.5g: Measures to reduce take of loggerhead shrike BIO-4: Implement City BMP measures to reduce impacts to sensitive species BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone	Less than Significant
BIO-6: Substantially adversely affect migratory birds and raptors	Significant	HCP V.A.1: Preconstruction surveys HCP V.A.3: General measures to minimize take BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone BIO-5: Construct outside of the nesting season or conduct preconstruction surveys for nests and implement appropriate restrictions	Less than Significant

Appendix B. Mitigation Summary

Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
BIO-6: Substantially adversely affect giant garter snake habitat	Significant	HCP V.A.1: Preconstruction surveys	Less than Significant
		HCP V.A.3: General measures to minimize take	
		HCP V.A.5a: Measures to reduce take of giant garter snake	
		BIO-4: Implement City BMP measures to reduce impacts to special-status species	
		BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone	
		BIO-3: Obtain and comply with State, Federal, and Local permits	
BIO-7: Substantially adversely affect Swainson's hawk	Significant	Measure BIO-6: Compensate for the temporary and permanent loss of GGS habitat	Less than Significant
		HCP V.B.5b: Measures to reduce take of Swainson's hawk	
		BIO-4: Implement City BMP measures to reduce impacts to sensitive species	
		BIO-1: Install construction barrier fencing to protect sensitive biological resources located adjacent to the construction zone	
BIO-3: Obtain and comply with State, Federal, and Local permits	Significant	BIO-7: Avoid the introduction or spread of noxious weeds in the project area	Less than Significant
		BIO-7: Avoid the introduction or spread of noxious weeds in the project area	

Appendix C Acronyms

Acronym**Meaning**

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
ADL	aerially deposited lead
APE	Area of Potential Effects
ASR	Archaeological Survey Report
BFEs	Base Flood Elevations
Bikeway Master Plan	2010 City/County Bikeway Master Plan
BMP	Bicycle Master Plan
CAAQS	California Ambient Air Quality Standards
CalEPPC	California Exotic Pest Plant Council
Caltrans	California Department of Transportation
Caltrans	California Department of Transportation
Canal Bridge	at-grade level bridge across the West Drainage Canal
CARB	California Air Resources Board
CBSC	California Building Standards Code
CE	Categorical Exclusion
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	Code of Federal Regulations
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
City	City of Sacramento
CNDDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO ₂	carbon monoxide
County	Sacramento County
CWA	Clean Water Act

Appendix C. Acronyms

dB	decibel
dBA	A-weighted decibel
DFG	Department of Fish and Game
DFGC	California Fish and Game Code
DFGC	California Fish and Game Code
DOT	Department of Transportation
DPR	Department of Parks and Recreation
EB	eastbound
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FOE	Finding of Effects
FR	Federal Register
FR	Federal Register
General Construction Permit	General Permit for Discharges of Storm Water Associated with Construction Activity
GGG	Giant garter snake
HCP	Habitat Conservation Plan
HP	horsepower
HRER	historic resources evaluation report
I-5	Interstate 5
IS	Initial Study
L _{dn}	day-night level
L _{eq}	equivalent sound level
L _{max}	maximum sound levels
L _{min}	minimum sound levels
L _n	sound level percentiles

LNWI	lower northwest interceptor
LNWI	Lower Northwest Interceptor Sewer Main
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MND	Mitigated Negative Declaration
NAAQS	National Ambient Air Quality Standards
NBHCP	Natomas Basins Habitat Conservation Plan
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NFIP	National Flood Insurance Program
NNL Program	National Natural Landmarks Program
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO _x	nitrous oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NRNL	National Registry of Natural Landmarks
OHWM	ordinary high-water mark
PA	Programmatic Agreement
PM	Post Mile
PM2.5	particulate matter smaller than 2.5 microns or less in diameter
POC	pedestrian overcrossing
ppd	pounds per day
ppm	parts per million
PUD	Planned Unit Development
RD-1000	Reclamation District 1000
ROG	reactive organic gases
RT	Regional Transit
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement

Appendix C. Acronyms

SDC	Seismic Design Criteria
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO ₂	sulfur dioxide
SR	State Route
SRCSD	Sacramento Regional County Sanitation District
SVAB	Sacramento Valley Air Basin
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
USACE	U.S. Army Corps of Engineers
USC	United States Code
USC	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

Appendix D References Cited

Appendix D References Cited

D.1 Printed References

- American Ornithologists' Union. 1983. Checklist of North American birds. 6th edition. Lawrence, KS: Allen Press.
- Analytical Environmental Services. 2003. Bikeway Master Plan Draft Environmental Impact Report. December 2003. Prepared for the City of Sacramento
- Bell, C. J., E. L. Lundelius Jr., A. D. Barnosky, R. W. Graham, E. H. Lindsay, D. R. Ruez Jr., H. A. Semken Jr., S. D. Webb, and R. J. Zakrzewski. 2004. The Blancan, Irvingtonian, and RanchoLabrean Mammal Ages. In M. O. Woodburne (ed.), *Late Cretaceous and Cenozoic Mammals of North America*. Columbia University Press, New York.
- Bennett, G. L., G. S. Weissmann, G. S. Baker, and D. W. Hyndman. 2006. Regional-Scale Assessment of a Sequence-Bounding Paleosol on Fluvial Fans Using Ground-Penetrating Radar, Eastern San Joaquin Valley, California. *Geological Society of America Bulletin*, Vol. 118, No. 5/6:724–732.
- Bowen, M. 2004. *Historic Resources Evaluation Report for the Natomas Interstate 80 Bicycle and Pedestrian Overcrossing Project*. City of Sacramento, Sacramento County, California. On file at the California Department of Transportation, District 3, Marysville, CA.
- Bradley, D., and M. Corbett. 1995. *Final Rural Landscape Report for Reclamation District 1000*. U.S. Army Engineer District, Corps of Engineers. On file at the City of Sacramento Planning and Building Department. Sacramento, CA
- California Air Resources Board. 2006. *The California Almanac of Emissions and Air Quality: 2006 Edition*. Planning and Technical Support Division. Sacramento, CA.
- . 2008a. *Ambient Air Quality Standards*. Last Revised: February 21, 2008. Available: <<http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>>. Accessed: February 26, 2008.
- . 2008b. *Air Resources Board Databases: Aerometric Data Analysis and Management System (ADAM)*. Last Revised: January 15, 2008. Available: <<http://www.arb.ca.gov/html/databases.htm>>. Accessed: March 17, 2008.
- California Department of Fish and Game. 1994. Staff report regarding mitigation for impacts to Swainson's hawk (*Buteo swainsoni*) in the Central Valley of California. November 1. Sacramento, CA.
- California Department of Food and Agriculture. 2001. Pest ratings of noxious weed species and noxious weed seed (list and update). Available: <<http://pi.cdfa.ca.gov/weedinfo/Index.html>>. Last updated: February 22, 2001.
- California Department of Transportation. 2003. *Construction Site Best Management Practices Manual*. Sacramento, CA.
- . 2007. *Statewide Storm Water Quality Handbooks*. Sacramento, CA.

Appendix D. References Cited

- California Natural Diversity Database. 2008. Records search of the Grays Bend, Taylor Monument, Rio Linda, Davis, Clarkburg, Florin, Saxon, and Sacramento East 7.5-minute quadrangles. Sacramento, CA. California Department of Fish and Game.
- Caltrans. See California Department of Transportation.
- CARB. See California Air Resources Board.
- CDFA. See California Department of Food and Agriculture.
- CDFG. See California Department of Fish and Game.
- Cherven, V. B. 1984. *Early Pleistocene glacial outwash deposits in the eastern San Joaquin Valley, California: a model for humid-region alluvial fans*. *Sedimentology* 31 (6):823–836.
- Chiea, L. 2008. Larry Craig, Caltrans Environmental Coordinator. Email message February 14, 2008. <Larry_Chiea@dot.ca.gov>.
- City of Sacramento. 1987. City of Sacramento General Plan Update Draft Environmental Impact Report. Department of Planning and Development. March.
- . 1988a. City of Sacramento General Plan. Department of Planning and Development. Adopted by the City of Sacramento City Council on January 19, 1988. (Resolution No. CC88-058.)
- . 1988b. North Natomas Community Plan. Department of Planning and Development Department. Adopted by the City of Sacramento City Council on November 29, 1988.
- . 1994. North Natomas Community Plan. Department of Planning and Development. Adopted by the Sacramento City Council on May 4, 1994. (Resolution No. 94-259.) Amended by Sacramento City Council on April 16, 1996.
- . 1999. South Natomas Community Plan. Amended June 1999. City of Sacramento Planning Department. Sacramento, CA.
- . 2001. *The 2010 Sacramento City/County Bikeway Master Plan Update*. Sacramento City/County staff. Sacramento, CA.
- . 2002. North Natomas Community Plan Map. Last updated August 2002.
- . 2003a. Housing Element of the General Plan, Housing Element Update July 1, 2002 – July 30, 2007. City of Sacramento Planning and Building Department. Adopted by the City Council July 10, 2003. (Resolution No. 2003-384.)
- . 2003b. South Natomas Community Plan Map. Last Updated January 2006.
- . City of Sacramento website. Updated July 1, 2004. Accessed July 7, 2004. Available at <http://www.cityofsacramento.org>.
- . 2005. Technical Background Report for the 2030 General Plan. Available: <http://www.sacgp.org/documents.html#tbr>. Accessed: March 17, 2008.

Appendix D. References Cited

- . 2007. *City of Sacramento Draft 2030 General Plan Update*. Sacramento, CA.
- . 2008a. *City of Sacramento Draft 2030 General Plan Update. North Natomas Draft Community Plan Chapter*. Sacramento, CA.
- . 2008b. *City of Sacramento Draft 2030 General Plan Update. South Natomas Draft Community Plan Chapter*. Sacramento, CA.
- City of Sacramento Website. Updated 2008. Accessed March 12, 2008. Available online at: <http://www.cityofsacramento.org/>.
- City of Sacramento/County of Sacramento. 1993. *2010 Sacramento City/County Bikeway Master Plan* (Department of Transportation. Adopted by the County of Sacramento on November 23, 1993. Adopted by the City of Sacramento April 11, 1995. Sacramento, CA.
- City of Sacramento, Sutter County, and Natomas Basin Conservancy. 2003. *Final Natomas Basin Habitat Conservation Plan*. Sacramento and Sutter Counties, CA.
- CNDDDB. See California Natural Diversity Database.
- Dames & Moore. 1995. *Final Rural Landscape Report for Reclamation District 1000*. U.S. Army Engineer District, Corps of Engineers. On file at the City of Sacramento Planning and Building Department. Sacramento, CA
- EPA. See U.S. Environmental Protection Agency.
- Federal Highway Administration. 1983. *Visual Impact Assessment for Highway Projects*. (FHWA-HI-88-054.) Available at: <http://www.dot.ca.gov/ser/guidance.htm#visual>
- Federal Highway Administration, Advisory Council on Historic Preservation, California State Historic Preservation Officer, and California Department of Transportation. 2004. *Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as It Pertains to the Administration of the Federal-Aid Highway Program in California*.
- Federal Transit Administration. 2006. *Transit Noise Impact and Vibration Assessment*. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>
- FHWA. See Federal Highway Administration.
- Gillespie, A. R., M. M. Clark, and R. M. Burke. 1999. Eliot Blackwelder and the alpine glaciations of the Sierra Nevada. In E. M. Moores, D. L. Stout, and D. Sloan (eds.), *Classic Cordilleran Concepts: A View from California*. (Geological Society of America Special Paper 338, page 449.)
- Grinnell, J. and A. H. Miller. 1944. The distribution of the birds of California. *Pacific Coast Avifauna*. 27:1-608

Appendix D. References Cited

- Hart, E. W., and W. A. Bryant. 1997. *Fault-Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps*. (Special Publication 42.). California Division of Mines and Geology
- International Conference of Building Officials. 1997. *Uniform Building Code*. Whittier, CA
- Jennings, M. R., and M. P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California*. Final report. California Department of Fish and Game, Inland Fisheries Division. Rancho Cordova, CA.
- Jennings, M. R., M. P. Hayes, and D. C. Holland. 1992. A petition to U.S. Fish and Wildlife Service to place the California red-legged frog and the western pond turtle on the list of endangered and threatened wildlife and plants.
- Jones & Stokes. 2004. *Negative Archaeological Survey Report for the Interstate 80 Bicycle and Pedestrian Overcrossing Project City of Sacramento, Sacramento County, California*. July. (J&S 03-211.) Sacramento, CA. Prepared for the City of Sacramento, Sacramento, CA.
- . 2008. *Natomas Interstate 80 Bicycle and Pedestrian Overcrossing Project Finding of Effects*. Sacramento, CA.
- Lettis, W. R., and Unruh, J. R. 1991. Quaternary geology of the Great Valley, California, in Morrison, R. B., editor, *Quaternary nonglacial geology—Conterminous U. S., Geological Society of America, Geology of North America*, vol. K-2.
- Sacramento Metropolitan Air Quality Management District. 2004. *Guide for Air Quality Assessment in Sacramento County*. July 10. Sacramento, CA.
- Scott, E., and K. Springer. 2003. CEQA and fossil preservation in California. *The Environmental Monitor*, fall 2003.
- Shlemon, R. J. 1971. The Quaternary Deltaic and Channel System in the Central Great Valley, California. *Annals of the Association of American Geographers*, 61(3):427–440.
- SMAQMD. See Sacramento Metropolitan Air Quality Management District.
- State of California. 2003. *State of California General Plan Guidelines 2003*. Governor's Office of Planning and Research. Available: http://www.opr.ca.gov/planning/publications/General_Plan_Guidelines_2003.pdf.
- Stebbins, Robert C. 2003. *A Field Guide to Western Reptiles and Amphibians*. 3rd Edition. Boston: Houghton Mifflin Company.
- U.S. Environmental Protection Agency. 2008. *AirData*. Last Revised: March 4, 2008. Available: <http://www.epa.gov/air/data/reports.html>>. Accessed: March 17, 2008.
- U.S. Fish and Wildlife Service. 1999. Draft Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). Portland, OR.
- USFWS. See U.S. Fish and Wildlife Service.

Weissmann, G. S., J. F. Mount, and G. E. Fogg. 2002. Glacially driven cycles in accumulation space and sequence stratigraphy of a stream-dominated alluvial fan, San Joaquin Valley, California. *Journal of Sedimentary Research*.

D.2 Personal Communications

de Beauvieres, Mary. 2008. Principal Planner. City of Sacramento Department of Parks and Recreation. Email communication concerning current park and recreational lands within the City of Sacramento. June 2008.

Chiea, Larry. 2008. Environmental Coordinator. California Department of Transportation. Email communication concerning Section 7 consultation for the Natomas I-80 Bicycle and Pedestrian Overcrossing Project. February 2008.

Johnson, S. 2004. Scott Johnson, Assistant Planner, City of Sacramento Planning and Building Department, Environmental Planning Services. Numerous emails and phone communication. March–July 2004.

Widell, C. 1994. Office of Historic Preservation Concurrence Letter Regarding Eligibility of RD 1000 Rural Historic Landscape District to National Register of Historic Places. September 16. On file at the North Central Information Center. Sacramento, CA.

Appendix E Letter of Concurrence

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov



March 24, 2008

Reply To: FHWA080226A

Gregory P. King
Chief, Cultural and Community Studies Office
Division of Environmental Analysis
Department of Transportation
PO Box 942874
Sacramento, CA 94274-0001

Re: Finding of No Adverse Effect for the Proposed Interstate 80 Bicycle and Pedestrian Overcrossing Project, Sacramento County, CA

Dear Mr. King:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (PA)*.

The California Department of Transportation is requesting my concurrence that a finding of no adverse effect without standard conditions is appropriate for this undertaking. Based on my review of the submitted documentation, I concur with this finding.

Thank you for considering historic properties as part of your project planning. If you have any questions, please contact Natalie Lindquist of my staff at your earliest convenience at (916) 654-0631 or e-mail at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

