

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.

2.2.3 Paleontology

2.2.3.1 Regulatory Setting

FEDERAL REGULATIONS

Antiquities Act of 1906

The federal Antiquities Act of 1906 (16 United States Code [USC] 431–433) was enacted with the primary goal of protecting cultural resources in the United States. The Act explicitly prohibits appropriation, excavation, injury, and destruction of “any historic or prehistoric ruin or monument, or any object of antiquity” located on lands owned or controlled by the federal government, without permission of the secretary of the federal department with jurisdiction, and establishes criminal penalties, including fines and imprisonment, for these acts. The Antiquities Act also institutes a requirement for appropriate studies by qualified experts and stipulations regarding the management/curation of collected materials. Neither the Antiquities Act itself nor its implementing regulations (43 Code of Federal Regulations [CFR] 3) specifically mentions paleontological resources. However, several federal agencies—including the National Park Service (NPS), the Bureau of Land Management, and the U.S. Department of Agriculture (USDA) Forest Service—have interpreted objects of antiquity as including fossils. Consequently, the Antiquities Act represents an early cornerstone of efforts to protect the nation’s paleontological resources.

National Environmental Policy Act

NEPA does not provide specific guidance regarding paleontological resources, but the NEPA requirement that federal agencies take all practicable measures to “preserve important historic, cultural, and natural aspects of our national heritage” (NEPA Section 101[b][4]) is interpreted as applying to paleontological materials. Under NEPA, paleontological resources typically are treated in a manner similar to that used for cultural resources. The implementing regulations are 40 CFR 1500–1508 in Chapter V, “Council on Environmental Quality.”

National Natural Landmarks Program

The National Natural Landmarks Program (NNL Program) was established in 1962 under the authority of the Historic Sites Act of 1935 (16 USC 461–467). The goals of the NNL Program are to:

- encourage the preservation of sites that illustrate the nation’s geologic and ecological character,
- enhance the scientific and educational value of the sites preserved, and
- strengthen public appreciation of natural history and foster increased concern for the conservation of the nation’s natural heritage.

Under the NNL Program, sites that represent the nation’s “best” examples of various types of biological communities or geologic features (meaning that they are in good condition and effectively illustrate the specific character of a certain type of resource) are listed on the National Registry of Natural Landmarks (NRNL). At present, the NRNL includes 587 sites, ranging in size from 7 acres (2.83 hectares) to almost 1 million acres (404,686 hectares). Examples of sites designated as NNLs for their paleontological value include Sharktooth Hill in Kern County, Rancho La Brea in Los Angeles, and Rainbow Basin north of Barstow in San Bernardino County. The implementing regulation is 36 CFR 62.

The NNL Program is administered by the NPS. However, most sites listed on the NRNL are not transferred to federal ownership, and most do not become units in the national parks system; most continue to be managed by their current owners following listing. At present, about 50% of the nation's NNLs are managed by public agencies, about 30% are privately owned and managed, and about 20% are managed through collaboration between agencies and private entities.

The NPS is responsible for maintaining relationships with NNL landowners and monitoring the condition of all NNLs. Based on its monitoring, the NPS prepares an annual report identifying NNLs at risk of damage or degradation that is transmitted by the Secretary of the Interior to Congress.

STATE REGULATIONS

California Environmental Quality Act

CEQA encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a proposed project and to make decisions based on the findings of those analyses.

CEQA includes in its definition of historical resources “any object [or] site ... that has yielded or may be likely to yield information important in prehistory” (State CEQA Guidelines 15064.5[3]), which typically is interpreted as including fossil materials and other paleontological resources. More specifically, destruction of a “unique paleontological resource or site or unique geologic feature” constitutes a significant impact under CEQA (State CEQA Guidelines Appendix G). The treatment of paleontological resources under CEQA is generally similar to the treatment of cultural resources, requiring an evaluation of resources in a project's area of potential effect; an assessment of potential impacts on significant or unique resources; and the development of mitigation measures for potentially significant impacts, which may include monitoring combined with data recovery and/or avoidance.

Scott and Springer (2003) point out that “the stated intent of CEQA is to ‘develop and maintain a high-quality environment now and in the future, and take all action necessary to protect, rehabilitate, and enhance the environmental quality of the state’ (PRC §21001a). The ‘environment’ in the sense of CEQA is defined as ‘the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, [and] objects of historic or aesthetic interest’ (PRC §21060.5).”

The CEQA checklist (State CEQA Guidelines Appendix G, section V, “Cultural Resources”) asks whether the project would “[d]irectly or indirectly destroy a unique paleontological resource or site or unique geological feature.” CEQA does not provide further definitions or guidelines with respect to paleontological resources. At one extreme interpretation, virtually any fossil (except a trace fossil) could be considered unique in that it represents the only available evidence of the former existence of an individual plant or animal at the place and time represented. At the other extreme, it might be inferred that only those fossil specimens unlike any that have been found anywhere else deserve protection. Neither extreme reflects the significance of fossils to the modern science of paleontology nor aligns with the stated intent of CEQA.

Furthermore, a determination of uniqueness or significance, by even the most liberal of definitions, is clearly not possible prior to the actual discovery and is usually possible only after the specimen is collected, cleaned, and compared with others already existing in collections at research institutions. However, the probability that significant paleontological resources exist within a given body of rock or “soil” (unconsolidated sedimentary deposit) can be estimated given sufficient information (discussed later in this section).

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		
Ozone ^a	O ₃	1 hour	0.09	N/A	N/A	N/A	N/A	
		8 hours	0.070	0.08	137	157	If exceeded If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area
Carbon monoxide (Lake Tahoe only)	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
		8 hours	6	N/A	7,000	N/A	If equaled or exceeded	N/A
Nitrogen dioxide	NO ₂	Annual average	0.030	0.053	56	100	N/A	If exceeded on more than 1 day per year
		1 hour	0.18	N/A	338	N/A	If exceeded	N/A
Sulfur dioxide	SO ₂	Annual average	N/A	0.03	N/A	80	N/A	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	N/A	655	N/A	If exceeded	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	N/A	N/A	N/A	N/A	N/A	If exceeded at each monitor within area
		24 hours	N/A	N/A	50	150	If exceeded	If exceeded on more than 1 day per year
		Annual arithmetic mean	N/A	N/A	12	15	N/A	If 3-year average from single or multiple community-oriented monitors is exceeded
Sulfate particles	SO ₄	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
Lead particles	Pb	Calendar quarter	N/A	N/A	25	N/A	If equaled or exceeded	N/A
		30-day average	N/A	N/A	1.5	N/A	N/A	If exceeded no more than 1 day per year

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 catalyts 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 contraction 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 NO_x 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 (≥ 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
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 (PM ₁₀) ^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 (PM ₁₀) ^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 (PM ₁₀) ^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 (PM _{2.5})—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 ^c 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 unhealthful 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 dBA $L_{eq,1h}$.

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).

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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 (CNDDB) (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 maybe 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.

Table 2.3.3-1. Sensitive Plants Identified during the Pre-Field Investigation as Having the Potential to Occur in the I-80 Study Area

Common Name	Scientific Name	Status		Geographic Distribution	Habitat Requirements	Blooming Period	Potential Occurrence in Study Area
		Federal ^a	State ^a CNPS ^a				
Ferris's milk-vetch	<i>Astragalus tener</i> var. <i>ferrisae</i>	-	1B.1	Central Valley from Butte County to Alameda County	Subalkaline flats and floodlands, usually on adobe soils of valley and foothill grasslands, below 200 feet asl	Apr–May	None; no suitable habitat present in the project area
Alkali milk-vetch	<i>Astragalus tener</i> var. <i>tener</i>	-	1B.2	Merced, Solano, and Yolo Counties; historically more widespread	Grassy flats and vernal pool margins, on alkali soils, below 200 feet asl	Mar–Jun	None; no suitable habitat present in the project area
Heartscale	<i>Atriplex cordulata</i>	-	1B.2	Western Central Valley and valleys of adjacent foothills	Saline or alkaline area in chenopod scrub, meadows and seeps, sandy soils in valley and foothill grassland; below 1,230 feet	Apr–Oct	None; no suitable habitat present in the project area
Brittlescale	<i>Atriplex depressa</i>	-	1B.2	Western and eastern Central Valley and adjacent foothills on west side of Central Valley	Alkaline clay soils in chenopod scrub, playas, valley and foothill grasslands; below 1,050 feet	May–Oct	None; no suitable habitat present in the project area
San Joaquin spearscale	<i>Atriplex joaquiniana</i>	-	1B.2	West edge of Central Valley from Glenn County to Tulare County	Alkaline soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland; below 2,740 feet	Apr–Oct	None; no suitable habitat present in the project area
Succulent owl's-clover	<i>Castilleja campestris</i> ssp. <i>succulenta</i>	T	1B.2	Southern Sierra Nevada foothills, eastern San Joaquin Valley—Fresno, Madera, Merced, Mariposa, San Joaquin, and Stanislaus Counties	Vernal pools (often acidic soils)	Apr–May	None; no suitable habitat present in the project area
Palmate-bracted bird's-beak	<i>Cordylanthus palmatus</i>	-	1B.1	Livermore Valley and scattered locations in the Central Valley from Colusa County to Fresno County	Alkaline sites in grassland and chenopod scrub, 16–510 feet	May–Oct	None; no suitable habitat present in the project area
Dwarf downingia	<i>Downingia pusilla</i>	-	2.2	California's Central Valley and South America	Vernal pools and mesic valley and foothill grasslands, 1,500 feet asl	Mar–May	None; no suitable habitat present in the project area
Bogg's Lake hedge-hyssop	<i>Gratiola heterosepala</i>	-	1B.2	Inner north Coast Ranges, Central Sierra Nevada foothills, Sacramento Valley and Modoc Plateau—Fresno, Lake, Lassen, Madera, Modoc, Placer, Sacramento, Shasta, San Joaquin, Solano, and Tehama Counties	Clay soils in areas of shallow water, lake margins and vernal pool margins	Apr–Jun	None; no suitable habitat present in the project area
Woolly rose-mallow, a.k.a. California	<i>Hibiscus lasiocarpus</i>	-	2.2	Central and southern Sacramento Valley, deltaic central valley—Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter,	Wet banks, freshwater marshes; generally below 135 feet asl	Aug–Sep	Moderate; suitable habitat occurs along

Initial Study/Mitigated Negative Declaration

Natomas I-80 Bicycle and Pedestrian Overcrossing

June 2008

2.3-26