

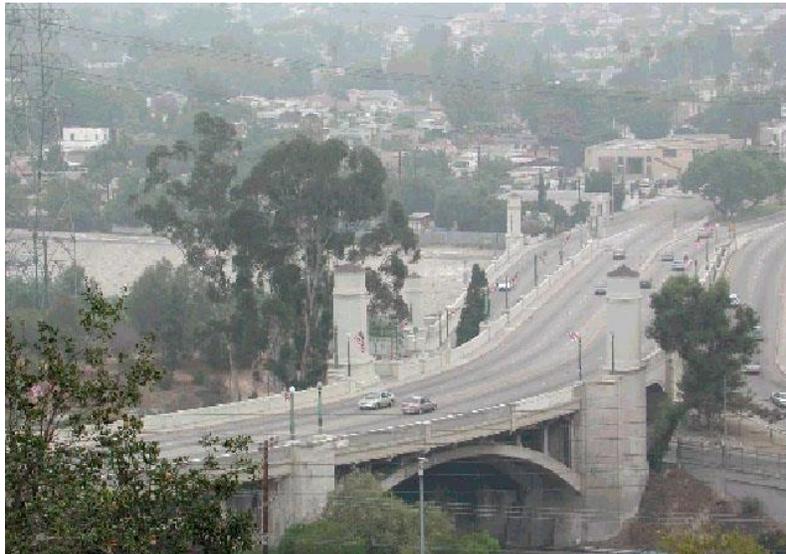
Glendale Boulevard-Hyperion Avenue Complex of Bridges Improvement Project

BHLS-5006 (181), BRLSZD-5006 (337),
BHLS-5006 (186), BHLS-5006 (187)

Bridge Nos. 53C-1881; 53C-1882; 53C-1883;
53C-1884; 53-1069; 53C-1179

LOS ANGELES COUNTY, CALIFORNIA
DISTRICT 7-LA-5, PM 23.6/23.9 BHLS 5006 (170)

Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment and Programmatic Section 4(f) Evaluation



Prepared by
State of California Department of Transportation
and City of Los Angeles

August 2013

The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327.



The City of Los Angeles and California Department of Transportation propose to improve the Glendale Boulevard-Hyperion Avenue Complex of Bridges between Ettrick Street and Glenfeliz Boulevard.

**INITIAL STUDY with Proposed Mitigated Negative Declaration /
ENVIRONMENTAL ASSESSMENT and Programmatic Section 4(f) Evaluation**

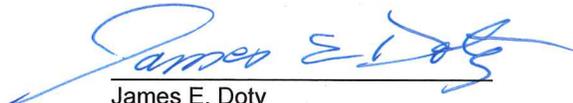
Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C) and 49 U.S.C. 303

CITY OF LOS ANGELES
Department of Public Works

THE STATE OF CALIFORNIA
Department of Transportation

9-4-13

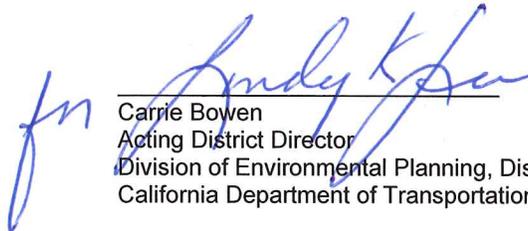
Date of Approval



James E. Doty
Manager
Environmental Management Group
Department of Public Works Bureau of Engineering
City of Los Angeles

9/4/13

Date of Approval



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CITY OF LOS ANGELES
OFFICE OF THE CITY CLERK
ROOM 395, CITY HALL
LOS ANGELES, CALIFORNIA 90012
CALIFORNIA ENVIRONMENTAL QUALITY ACT
PROPOSED MITIGATED NEGATIVE DECLARATION
(Article I, City CEQA Guidelines)

LEAD CITY AGENCY AND ADDRESS: Public Works Bureau of Engineering
1149 Broadway, Suite 750
Los Angeles, CA 90015-2213

PROJECT TITLE: Glendale Boulevard-Hyperion Avenue Complex of Bridges Improvement Project

PROJECT LOCATION: Glendale Boulevard and Hyperion Avenue between Ettrick Street and Glenhurst Avenue in the communities of Atwater Village and Silver Lake

COUNCIL DISTRICT
4 & 13

PROJECT DESCRIPTION:

- Modify the viaduct complex to correct safety and operational deficiencies, meet current seismic performance standards, and to restore original design details to the railings. Specifically, the proposed project would:
- Seismically strengthen viaduct complex structures.
- Improve the Hyperion Ave. viaduct roadway by adding a median barrier, consolidating the existing two sidewalks into a single sidewalk along the west side of the viaduct, adding a pedestrian crosswalk across southbound Glendale Boulevard at the northern end of the bridge, and restriping to provide new lane widths (12-foot inner and 14-foot-wide curb lanes).
- Widen the Glendale Boulevard bridges over the Los Angeles River by approximately eight feet each.
- Replace all the railings with balustrades based on the original design.
- Realign the I-5 northbound off-ramp to northbound Glendale Blvd. to connect with Glendale Blvd. south of the current exit to allow left-hand turns onto southbound Glendale Blvd.; signalize the new intersection.
- Add an access ramp from northbound Glendale Blvd. to the LA River bike path.
- Install a detention/infiltration basin utilizing the construction staging area between the I-5 and the LA River northwest of the complex for the purpose of permanent treatment of storm water runoff from a portion of the viaduct complex.
- As a mitigation measure to address construction impacts to pedestrians, construct an alternate pedestrian crossing over the LA River across the existing piers of the former Red Car (downstream of the viaduct complex) to connect the bike path along the right bank of the river with Glendale Blvd. northeast of the river.

NAME AND ADDRESS OF APPLICANT IF OTHER THAN CITY AGENCY:

PROPOSED FINDING: The **City Engineer** of the City of Los Angeles has determined the proposed project will not have a significant effect on the environment because mitigation measures have been included in the project to avoid potentially significant effects.

SEE THE ATTACHED PAGES FOR ANY MITIGATION MEASURES IMPOSED

THE INITIAL STUDY PREPARED FOR THIS PROJECT IS ATTACHED

PERSON PREPARING THIS FORM:
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SIGNATURE (Official):

DATE:
8-22-2013

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- Appendix B1: Section 4(f) Programmatic Evaluation
- Appendix B2: Resources Evaluated Relative to the Requirements of Section 4(f)
- Appendix C: Title VI Policy Statement
- Appendix D: List of Technical Studies
- Appendix E: Notice of Preparation

Summary

S.1 Introduction and Overview of the Project Area

The Glendale Boulevard-Hyperion Avenue Viaduct Complex (viaduct complex) is located between Atwater Village to the north and Silver Lake and Los Feliz to the south, in the City of Los Angeles. Figure 1-1 shows the overall project vicinity. The viaduct complex, completed in 1929, spans approximately 1,190 feet over the Los Angeles River, Interstate 5 (I-5), and Riverside Drive. Figure 1-2 shows the project location and depicts the viaduct complex and the immediate area.

The viaduct complex consists of the following structures:

- Waverly Drive Bridge (Bridge Number 53C-1179)
- Hyperion Avenue Viaduct, over Riverside Drive (53C-1882)
- Hyperion Avenue Viaduct, over I-5 (53-1069)
- Hyperion Avenue Viaduct, over the Los Angeles River (53C-1881)
- Southbound Glendale Boulevard Bridge, over the Los Angeles River (53C-1883)
- Northbound Glendale Boulevard Bridge, over the Los Angeles River (53C-1884)

The viaduct complex is generally aligned along a southwest-northeast axis and is bounded by Etrick Street on the south and Glenfeliz Boulevard on the north. The width of the existing roadway on Glendale Boulevard is approximately 34 feet in each direction. The width of the existing roadway on Hyperion Avenue is 54 feet total in both directions.

S.2 Purpose and Need

The purpose of the proposed project is to:

- Reduce vulnerability of the Glendale Boulevard-Hyperion Avenue viaduct complex in major earthquake events
- Resolve design deficiencies of the Glendale Boulevard-Hyperion Avenue viaduct complex
- Improve traffic circulation to improve the operational efficiency of the viaduct complex

With the exception of the Waverly Drive Bridge, each of the bridge structures of the viaduct complex requires seismic retrofitting to meet current design standards of the City of Los Angeles (“City”) and State of California. The Federal Highway Administration (FHWA) Sufficiency Rating (SR) of the existing viaduct complex was determined to be “functionally obsolete.” The project would reduce the current risk to public safety due to inadequate design characteristics of the Complex and the potential for catastrophic damage resulting

from the recently revised Maximum Credible Earthquake (MCE) design criteria. In addition, existing geometric configurations of the several complex components do not meet current design standards for operational safety. There are also nearby circulation issues that detract from the operational efficiency of the viaduct complex, and would need the reconfiguration of the northbound I-5 off-ramp to Glendale Boulevard.

S.3 Proposed Action

The City, in conjunction with the Department of Transportation (“Caltrans”) and FHWA, is proposing to modify the existing viaduct complex to correct existing safety and operational deficiencies, address pedestrian safety issues, meet current seismic performance standards, and to restore original design details to the railings. Specifically, the proposed project would accomplish the following:

- Seismically strengthen vulnerable viaduct complex structures.
- Improve the Hyperion Avenue viaduct roadway by adding a center median barrier to physically separate northbound and southbound traffic, consolidate the existing two sidewalks into a single sidewalk along the west side of the complex, add a pedestrian crosswalk across southbound Glendale Boulevard at the northern end of the bridge, and restripe the travel lanes to provide new lane widths (12-foot inner and 14-foot-wide curb lane).
- Widen the northbound and southbound Glendale Boulevard bridges over the Los Angeles River by approximately eight feet.
- Replace the existing deteriorated covered railings along both Glendale Boulevard bridges, along Hyperion Avenue, and along the Waverly Bridge with replica balustrades based on the original railing design.
- Realign the existing I-5 northbound off-ramp to northbound Glendale Boulevard to connect with Glendale Boulevard south of the current exit to allow left hand turns onto southbound Glendale Boulevard and signalize the new intersection.
- Add an access ramp from northbound Glendale Boulevard to the bike path along the Los Angeles River with an adjacent mini green space.
- Install a detention/infiltration basin utilizing the construction staging area between the I-5 and the Los Angeles River northwest of the viaduct as a permanent water quality–best management practice (BMP) for the purpose of permanent treatment of storm water runoff from a portion of the viaduct complex.
- As a mitigation measure to address pedestrian traffic and community impacts, construct an alternate pedestrian crossing over the Los Angeles River across the existing Red Car piers (downstream of the viaduct complex) to connect the bike path along the southwest side of the Los Angeles River with Glendale Boulevard on the northeast side of the River.

S.4 Project Alternatives

Seven project alternatives were considered during the project development phase. Section 1.3 in Chapter 1 provides a detailed description of the project alternatives. These alternatives were developed and screened based on the capacity to meet the project purpose and need, the extent of environmental impacts and community disruptions associated with each, and comparative cost effectiveness.

S.4.1 No Build Alternative

Under a No Build Alternative, no improvements to the viaduct complex would be undertaken, including seismic retrofit/rehabilitation. Existing roadway, pedestrian, and rail deficiencies would remain along the viaduct complex as would its existing seismic vulnerability.

The No Build Alternative would not meet the project's purpose and need.

S.5 Joint CEQA/NEPA Document

The project is subject to federal as well as state environmental review requirements because the City proposes the use of federal funds from the FHWA and/or the project requires a FHWA approval action. FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to Section 6005 of SAFETEA-LU codified at 23 U.S.C. 327(a)(2)(A). Effective July 1, 2007, FHWA has assigned, and Caltrans has assumed, all the USDOT Secretary's responsibilities under NEPA. Caltrans is the NEPA lead agency and the City is the California Environmental Quality Act (CEQA) lead agency.

The City, as the CEQA lead agency, proposes to adopt a Mitigated Negative Declaration (MND) based on the information in this joint environmental document. Further information specific to the CEQA analysis is contained in Chapter 3 and Appendix A.

Following receipt of public comments on this Initial Study/Environmental Assessment, the lead agencies will consider the comments and take actions regarding the environmental document and the project. Before making a decision on approval of the project, the City will determine whether to adopt a MND or require preparation of an Environmental Impact Report (EIR) under CEQA, and Caltrans will decide whether to issue a Finding of No Significant Impact (FONSI) or require preparation of an Environmental Impact Statement (EIS) under NEPA.

S.6 Summary of Environmental Impacts

Environmental impacts resulting from the proposed project, Build Alternative 1, and the No Build Alternative, as analyzed in Chapter 2, are summarized in Table S-2 at the end of this chapter. CEQA Guidelines (Section 15126.2) require the disclosure of significant environmental effects that cannot be avoided if a project is implemented.

S.7 Coordination with Public and Other Agencies

The proposed project would require permits, approvals, or coordination with various agencies, as summarized in Table S-1.

Agency	Permit/Approval	Status
California Department of Transportation	Encroachment Permit for viaduct construction (seismic) over I-5, and permit/design/construction approval for reconfiguration of the northbound I-5 off-ramp at Glendale Boulevard.	To be implemented during design and construction.
California Department of Fish and Game	Streambed Alteration Agreement	To be obtained prior to construction.
Los Angeles Regional Water Quality Control Board (LARWQCB)	Permit approval under the General Construction Activities Stormwater Permit. 401 Certification.	To be obtained prior to construction.
U.S. Army Corps of Engineers	404 Permit for discharge of dredged or fill material. Permit to construct access ramp(s) in the Los Angeles River channel, Approval of diversion plan.	To be obtained prior to construction.
State Historic Preservation Officer/Advisory Council on Historic Preservation (SHPO/ACHP)	Concurrence with HPSR and Findings of Effect documents; Approval of the Memorandum of Agreement (MOA)	MOA to be submitted to SHPO prior to project implementation
County of Los Angeles, Department of Public Works	Approval to enter and work in the Los Angeles River.	To be obtained prior to construction.
City of Los Angeles, Department of Transportation	Approval of work area traffic control plan (traffic management plan), lane closures, and establishment of traffic control and safety measures.	To be established during project design or prior to construction, and implemented during construction.
City of Los Angeles, Bureau of Sanitation	Permit to discharge treated extracted groundwater to the sewer system.	To be implemented during construction, if necessary.
City of Los Angeles, Board of Public Works	Permit to perform work or affect a traffic lane closure during peak traffic hours, including possible exemption from related prohibitions (Mayor's Directive No. 2).	To be implemented prior to construction.
City of Los Angeles, Police Commission	Permit to perform limited night construction	To be obtained prior to construction.
City of Los Angeles, Department of Water and Power	Approval of temporary easement for off-ramp realignment construction	To be obtained prior to construction.

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Land Use and Planning				
Proposed Project	<p>Temporary Impacts</p> <p>Access to local streets would be maintained during construction and residential and commercial land uses would not be adversely affected.</p> <p>A minor amount of construction would occur on a narrow sliver of landscaped median along northbound Glendale Boulevard and the majority of the landscaped median would remain unaffected during construction.</p> <p>During the seismic upgrades, the abutment strengthening would occur from the area beneath the viaduct complex, which would require the temporary suspension of the revocable permit to two businesses. The City would have full control of the areas prior to construction.</p> <p>Permanent Impacts</p> <p>The widening of the Glendale Boulevard bridges over the Los Angeles River would occur within the public right-of-way and would not affect the land use designations for the surrounding area.</p> <p>The widening of the northbound Glendale Boulevard Bridge would require tapering of the new bridge width to the current roadway width just north of the bridge. This would utilize a small portion of landscaped median in the Glendale Boulevard right-of-way. No new right-of-way would be required and no trees would be removed.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Land Use and Planning				
Proposed Project	<p>Permanent Impacts Because the proposed project would occur within existing right-of-way, it would not result in changes to adjacent land uses. The proposed project represents improvements to the existing viaduct complex and would not physically divide an established community or conflict with any land use plan, redevelopment plan, policy, or regulation.</p>	CEQA-Not Significant NEPA-Not Adverse	None Required	CEQA-Not Significant NEPA-Not Adverse
No Build Alternative	<p>Temporary Impacts The No Build Alternative would not result in land use impacts.</p>	CEQA-Not Significant NEPA-Not Adverse	None Required	CEQA-Not Significant NEPA-Not Adverse
	<p>Permanent Impacts The No Build Alternative would not result in land use impacts.</p>	CEQA-Not Significant NEPA-Not Adverse	None Required	CEQA-Not Significant NEPA-Not Adverse
Land Use and Planning– Parks and Recreational Facilities				
Proposed Project	<p>Temporary & Permanent Impacts The project would not require the use of any parks and recreational facilities. The project would not result in a change in existing land use, and does not have the potential to affect Griffith Park.</p>	CEQA-Not Significant NEPA-Not Adverse	None Required	CEQA-Not Significant NEPA-Not Adverse
	<p>The project would not conflict with any regional and local community plans/programs, and would conform to existing land uses.</p>	CEQA-Not Significant NEPA-Not Adverse	None Required	CEQA-Not Significant NEPA-Not Adverse
No Build Alternative	The No Build Alternative would not result in impacts to parks and recreational facilities	CEQA-Not Significant NEPA-Not Adverse	None Required	CEQA-Not Significant NEPA-Not Adverse

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Community Impacts – Community Character and Cohesion				
Proposed Project	<p>Temporary Impacts</p> <p>Construction of the proposed project would require traffic and parking restrictions, but would not substantially affect community character or cohesion because land uses and land use patterns would not be affected.</p> <p>During construction, vehicular and bicycle access would be maintained along all roadways, and cohesion between the Silver Lake and Atwater Village neighborhoods would not be substantially affected.</p> <p>Construction of viaduct complex improvements would have traffic lane restrictions, but such effects would not diminish the historic nature of the bridge or affect community cohesion or character.</p> <p>Construction along northbound and southbound Glendale Boulevard Bridges over the Los Angeles River would prohibit pedestrian access across the bridges</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA- Significant NEPA- Adverse</p>	<p>None Required</p> <p>None Required</p> <p>None Required</p> <p>Implement T-2</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Community Impacts – Community Character and Cohesion				
Proposed Project	<p>Permanent Impacts</p> <p>Over the long-term, the seismic improvements would result in the continued cohesion of the Silver Lake and Atwater Village neighborhoods through the maintenance of vehicular and pedestrian access between the two neighborhoods.</p> <p>The reconfiguration of the existing I-5 off-ramp would allow motorists exiting this off-ramp the option of turning left on Glendale Boulevard Blvd. (southbound) rather than having to make a U-turn at (Glenfeliz Boulevard Avenue) to then travel south on Glendale Boulevard. The option would slightly reduce total vehicle miles traveled and reduce weaving from merging northbound traffic from Hyperion Avenue and Glendale Boulevard.</p> <p>The proposed project would improve pedestrian safety along the viaduct complex, which would improve community cohesion and character.</p> <p>The proposed project would increase access to the Los Angeles River bike path through the provision of a new access path from northbound Glendale Boulevard, which would improve community cohesion or character through increased community access to commuter resources.</p> <p>The proposed project would provide replica railings based on the original balustrade design, which would improve community character through the provision of more accurate sense of the historic bridge’s details.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Community Impacts – Community Character and Cohesion				
No Build Alternative	<p>Temporary Impacts Because no changes to the viaduct complex would occur under the No Build Alternative, no temporary effects to community character or cohesion would occur.</p>	CEQA-Not Significant NEPA-Not Adverse	None Required	CEQA-Not Significant NEPA-Not Adverse
	<p>Permanent Impacts The No Build Alternative would not result in any changes to community cohesion and character.</p>	CEQA-Not Significant NEPA-Not Adverse	None Required	CEQA-Not Significant NEPA-Not Adverse
Community Impacts – Environmental Justice				
Proposed Project	<p>Temporary Impacts Construction of the proposed project would not result in adverse air, traffic or noise impacts, as discussed in Sections 2.4, 2.10, and 2.11. Construction along northbound and southbound Glendale Boulevard Bridges over the Los Angeles River would prohibit access across the bridges. As a mitigation measure for this impact, an alternate pedestrian crossing would be constructed over the Los Angeles River across the existing Red Car piers (downstream of the viaduct complex). The pedestrian crossing would provide a detour route around the Glendale Boulevard Bridges during construction. With implementation of this mitigation measure, the impact is not considered adverse. Since construction of the proposed project would not result in adverse impacts there would be no significant adverse impacts to disproportionately affect minority populations.</p>	CEQA-Not Applicable NEPA- No High and Adverse Impact to a minority or low-income population.	None Required	CEQA-Not Applicable NEPA- No High and Adverse Impact to a minority or low-income population.

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Community Impacts – Environmental Justice				
	<p>Permanent Impacts</p> <p>The proposed project would result in moderate losses of historic fabric from both Glendale Boulevard bridges over the Los Angeles River. The impacts to these resources relate to the structures' eligibility for listing in the NHRP and do not result in direct impacts to humans. Although the loss of historic fabric from the Glendale Boulevard bridges are not likely to affect the structure's continued eligibility for listing by the NRHP, the loss of historic fabric itself is considered to be a permanent adverse impact. However, because the adverse impact is related to the loss of historic fabric and no adverse aesthetic impacts were identified, the adverse impact does not have the capacity to disproportionately and adversely affect either minority or low income populations.</p> <p>The proposed project would not result in adverse impacts that could permanently and disproportionately affect either minority or low-income populations.</p>	<p>CEQA-Not Applicable NEPA-Not Adverse</p> <p>CEQA-Not Applicable NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p>	<p>CEQA-Not Applicable NEPA-Not Adverse</p> <p>CEQA-Not Applicable NEPA-Not Adverse</p>
No Build Alternative	<p>Temporary and Permanent Impacts</p> <p>The No Build Alternative would not result in new or additional impacts to the community (social, economic) or environmental justice issues relative to existing conditions.</p>	<p>CEQA-Not Applicable NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Applicable NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Utilities/Emergency Services				
Proposed Project	<p>Temporary Impacts</p> <p>Construction of the proposed project would not result in substantial disruptions in utility services because underground utilities are identified and planned for during the project design process. The proposed project would follow the underground service alert (Dig Alert) program, as required by standard contract specifications.</p> <p>Construction is not expected to substantially affect the accessibility or response time of fire protection or police protection response units because the existing network of local streets provide alternative routes and because the Contractor would be required to prepare a Traffic Management Plan (TMP) subject to approval by the Los Angeles Department of Transportation (LADOT).</p> <p>Construction of the proposed project would result in generation of some demolition debris and construction debris. A high fraction of construction debris is typically recycled or reused because of its economic advantage over new materials. The fraction of debris deemed not suitable for recycling or reuse could be disposed of in an inert landfill, thereby saving valuable sanitary landfill capacity in municipal landfills.</p> <p>Permanent Impacts</p> <p>The proposed project would not result in additional demands for utilities or public services, or substantially affect the availability of or access to public facilities and services.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would not result in new or additional impacts to utilities or emergency service providers relative to existing conditions because no construction would occur. The No Build Alternative would not provide needed seismic improvements to the viaduct complex, and would remain vulnerable to earthquakes.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Traffic and Transportation/Pedestrian and Bicycle Facilities				
Proposed Project	<p>Temporary Impacts</p> <p>Construction of the proposed project would not increase traffic, but would temporarily reduce the capacity of the affected streets because there would be some lane closures. Temporary on-street parking restrictions along southbound Glendale Boulevard between Valleybrink Road and the viaduct complex and along the frontage roads that connect Waverly Drive to Rowena Avenue are also required. Staged construction in accordance with the approved TMP would be implemented with LADOT oversight and coordination.</p> <p>Prior to construction and demolition work along the viaduct complex, protective barriers would be constructed along the exteriors of the structures to contain any debris, tools, or materials that could fall on sidewalks, roadways, property, or the Los Angeles River below. The placement of the protective barriers could require temporary detours or traffic lane restrictions during the evenings for one to two days at each location.</p> <p>Some voluntary diversion of Hyperion Avenue through traffic (between San Fernando Road and Rowena Avenue) utilizing Fletcher Drive or Los Feliz could occur but should not be substantial due to the additional travel distances, additional signalized intersections, and peak hour congestions.</p> <p>Pedestrian access along the southbound and northbound Glendale Boulevard bridges could be prohibited during construction.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA- Significant NEPA- Adverse</p>	<p>None Required</p> <p>None Required</p> <p>None Required</p> <p>Implement T-2: Construct an alternate pedestrian crossing on the Red Car piers that connects both banks of the LA River. The bridge, in conjunction with the new access to the LA River bikeway (from N/B Glendale Boulevard, will provide a detour around the Glendale Blvd. Bridges during construction.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA- Not Significant NEPA- Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Traffic and Transportation/Pedestrian and Bicycle Facilities				
Proposed Project	<p>Permanent Impacts Key intersections in the project area, Glendale/Glenfeliz, Glendale/Riverside, and I-5 Northbound Off-ramp/Glendale would operate at acceptable levels of service.</p> <p>The reconfiguration of the northbound I-5 off-ramp to Glendale Boulevard would install a new signalized intersection at the terminus of the reconfigured off-ramp to allow left turns onto southbound Glendale Boulevard. This could create a potential sight distance issue as southbound traffic travels under the viaduct complex. This distance limit is considered potentially significant or adverse.</p> <p>Because the proposed project would not permanently affect traffic volume/capacity relationships along the viaduct or surrounding area, would not increase operational congestion at intersections, would not be a traffic generator, and would not affect local or regional traffic service standards or congestion management requirements, adverse impacts would not occur.</p> <p>The new bike path access from northbound Glendale Boulevard would allow bicyclists in the surrounding area another option to access the bike path.</p> <p>The proposed project would improve pedestrian safety along the viaduct complex and pedestrian access to the Los Angeles River bike path.</p> <p>The proposed project would provide seismic retrofits to the existing viaduct complex and increase the likelihood that the bridge would remain operational following a major seismic event.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Significant NEPA-Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>T-1: The signalization for the realigned off-ramp intersection will include traffic control for southbound Glendale Boulevard traffic, north of the Hyperion Bridge overcrossing. Traffic control will include, but not limited to, signalization to allow traffic to stop north of Hyperion Bridge overcrossing rather than at the new realigned off-ramp intersection.</p> <p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Traffic and Transportation/Pedestrian and Bicycle Facilities				
No Build Alternative	The No Build Alternative would not result in temporary or permanent impacts to traffic transportation/pedestrian and bicycle facilities; but would also not minimize the potential for damage of the viaduct complex from seismic events.	CEQA-Not Significant NEPA-Not Adverse	None Required	CEQA-Not Significant NEPA-Not Adverse
Visual/Aesthetics				
Proposed Project	<p>Temporary Impacts</p> <p>Temporary minor degradation of viaduct complex views would accompany project construction but because these effects would be temporary, would occur in a staged manner, and occur in urbanized areas where temporary view interruptions are common and necessary occurrences, these effects are not considered significant.</p> <p>Although construction would occur along the viaduct complex along Glendale Boulevard and at the abutments adjacent to Riverside Drive, construction would not affect the resources that form the basis for their designation as scenic highways.</p> <p>Permanent Impacts</p> <p>The proposed project would restore the original balustrade style railing system, which would be a visual improvement over the current covered railing system. Although the proposed project would also include crash-resistant protective barriers between the travel lanes and restored balustrades along Hyperion Avenue, as well as a center divider which would partially conceal the restored railing system, portions of the railing would be visible and the effect would be an improvement in the overall visual character of the viaduct complex.</p> <p>The proposed project would reinforce the spandrel columns with fiber wrap and shotcrete. These improvements are not expected to appreciably change the appearance of the columns or side views of the complex's arch support structures because all spandrel columns would be reinforced and because the general form and appearance would not be altered.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Visual/Aesthetics				
Proposed Project	<p>Permanent Impacts</p> <p>The proposed project would not change existing shade or shadow characteristics of the viaduct complex.</p> <p>The proposed project would refurbish and reuse the light poles and globes currently present on the viaduct complex. Additional electroliers (light poles) may be added in order to increase the illumination at the roadway, as required by the City’s Bureau of Street Lighting. However, the new lighting would not introduce a new source of glare or intrude on nearby properties because the light would be diffused.</p> <p>The proposed viaduct complex improvements would not affect the landscaped median along Glendale Boulevard and would therefore not affect its scenic highway status. Similarly, the proposed improvements would not affect Riverside Drive or its scenic highway designation.</p> <p>The pedestrian crossing connecting the left and right banks of the Los Angeles River utilizing the existing Red Car piers is visually consistent with the landscape unit, and does not intrude onto the aesthetic features of the viaduct complex.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would result in no new or additional impacts to visual/aesthetic quality relative to existing conditions.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Cultural Resources				
Proposed Project	<p>Temporary Impacts Construction activities associated with implementing seismic reinforcement and other bridge improvements would result in construction noise, dust, and traffic lane restrictions, but such effects would not diminish the historic nature of the bridge.</p> <p>Permanent Impacts The deteriorated railing would be restored along Waverly Drive over Hyperion Avenue, which would not adversely affect the bridge (53C1179)</p> <p>None of the modifications (sidewalks, median, barriers, railings, etc.) planned for the viaduct complex would have an adverse effect on the three Hyperion Avenue bridge structures (53C1882, 531069, and 53C1881).</p> <p>The seismic improvements to the Complex would minimally alter the physical characteristics of these bridges and would be designed so that the size and scale of the new features do not adversely impact the original features. These changes would not introduce visual elements that diminish the integrity of the bridge.</p> <p>Pedestrian enhancements are planned for the vicinity of both Glendale Boulevard bridges, but these enhancements would not have an adverse affect on either of the bridges because these activities do not entail removing, changing or altering any historic features or fabric of these bridges.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Cultural Resources				
Proposed Project	<p>Permanent Impacts</p> <p>The project would have an adverse effect on the viaduct complex through the loss of historic fabric of both the Southbound Glendale Boulevard Bridge (53C1883) and the Northbound Glendale Boulevard Bridge (53C1884), which would be altered and widened. These improvements would result in a loss of historic fabric.</p>	<p>CEQA-Significant NEPA-Adverse</p>	<p>H-1: Recordation to Historic American Engineering Record Specifications pursuant to Section 110(b) of the National Historic Preservation Act, etc.</p> <p>H-2: Disseminate copies of the HABS/HAER report to appropriate local libraries, etc.</p> <p>H-3: Online publication of historical information from HAER report.</p> <p>H-4: Produce a video documentary about the bridge and its place among the famous bridges spanning the LA River.</p> <p>H-5: Prepare traveling exhibits that address the history of the viaduct complex.</p> <p>H-6: Consult with the SHPO regarding replication of original elements, etc.</p> <p>H-7: Prepare construction monitoring plan and conduct periodic monitoring of construction activities.</p>	<p>CEQA- Not Significant NEPA- Resolved</p>
No Build Alternative	<p>The No Build Alternative would not result in new or additional impacts to historic resources relative to existing conditions.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Archaeological Resources				
Proposed Project	<p>Temporary and Permanent Impacts</p> <p>Temporary impacts to archaeological resources are not anticipated from the proposed project due to the lack of such resources within the project APE and the disturbed nature of the project area.</p> <p>Although no archaeological resources are expected to be encountered during construction, a professional archaeologist would monitor all ground disturbing activities as requested by the Chairman of the Gabrielino/Tongva Tribal Council</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>A-1: A professional archaeologist would monitor all ground disturbing activities during construction and would act according to the Special Order and Caltrans policies if archaeological resources are discovered.</p> <p>If buried cultural materials are encountered, work in the area of the resource would be halted and applicable actions under City of Los Angeles and Caltrans policy would be implemented.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would not result in new or additional impacts to archeological resources relative to existing conditions.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Hydrology, Water Quality, Stormwater Runoff				
Proposed Project	<p>Temporary Impacts</p> <p>No adverse impacts to water quality would occur due to implementation of the SWPPP and construction of the detention/infiltration basin.</p>	<p>CEQA- Not Significant NEPA- Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>
	<p>Permanent Impacts</p> <p>Although the proposed project would slightly widen the Glendale Boulevard bridge structures over the Los Angeles River, no substantial increases in pollutant deposition to the roadway would occur because increased vehicular travel would not occur.</p> <p>The pier extensions for the Glendale Boulevard bridges and the walkway along the north River bank would be designed to not affect channel hydraulics.</p> <p>Although the widening of the Glendale Boulevard bridges over the Los Angeles River represents an increase in paved area, it would not result in the generation of additional storm water runoff as the widened area would capture rainfall that would otherwise fall or be conveyed to the Los Angeles River. None of the other project elements would increase runoff to flow to the Los Angeles River.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would not result in new or additional impacts to hydrology, water quality, and stormwater runoff relative to existing conditions.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Hazardous Waste/Materials				
Proposed Project	<p>Temporary Impacts</p> <p>During pile installation, contaminated groundwater could seep into the drilled holes, and when the piles are casted with concrete, the contaminated groundwater would be displaced to the river channel as the concrete fills the bottom of the drilled hole.</p> <p>Yellow traffic striping present along the center of Hyperion Avenue and Glendale Boulevard may contain lead chromate pigments, and if removed by sand blasting or grinding, aerial dispersion of the material could occur; therefore, there is a potential for adverse health impacts to workers and the public.</p>	<p>CEQA- Not Significant NEPA-Adverse</p> <p>CEQA- Not Significant NEPA-Adverse</p>	<p>Note: HZ-1 through HZ-4 are legal requirements, and are included here for informational purposes only.</p> <p>HZ-1: Require the selected contractor to prepare and implement a management plan in the event that hazardous wastes are encountered during construction. All contaminated groundwater, contaminated soil, and hazardous wastes and debris encountered or generated during construction would be properly excavated, stored, tested, treated and/or disposed in accordance with all federal, state, and local laws and regulations.</p> <p>HZ-2: Perform representative sampling and testing of yellow traffic paint in areas that could be affected by construction. If hazardous materials in the paint exceed standards, abate the traffic paint and properly dispose of the material prior to construction.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>

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Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Hazardous Waste/Materials				
Proposed Project	<p>Temporary Impacts</p> <p>The landscaped area currently adjacent to the relocated northbound I-5 off-ramp may contain aerially deposited lead (ADL), which could pose safety hazards to workers or the public.</p> <p>There is the potential for asbestos-containing material (ACM) to be present in bridge joints and lead-based paint (LBP) to be present on the bridge rails or abutments. If present, the ACM and/or LBP could be disturbed during demolition activities.</p>	<p>CEQA- Not Significant NEPA-Adverse</p> <p>CEQA- Not Significant NEPA-Adverse</p>	<p>HZ-3: Perform representative sampling and testing of the area ramp alignment area for the presence of ADL. If ADL is present above action levels, abate the ADL-contaminated soil, in accordance with all applicable laws and regulations, prior to construction of the reconfigured ramp. A Health and Safety Plan by Contractor would be required pursuant to GC/GR requirements</p> <p>HZ-4: Perform a survey (during the design phase or prior to construction) for ACM in the bridge joints and for the presence of LBP in areas of the viaduct complex to be removed. If present, remove the ACM and/or LBP prior to or as part of the demolition process, in accordance with all applicable laws, regulations, and rules. A Health and Safety Plan by Contractor would be required pursuant to GC/GR requirements.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Hazardous Waste/Materials				
Proposed Project	<p>Permanent Impacts</p> <p>Once roadway improvements are constructed, traffic operations on these roadways would not result in the generation of hazardous wastes that could impact the corridor.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would result in no new or additional impacts related to hazardous waste/material relative to existing conditions.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>
Air Quality				
Proposed Project	<p>Temporary Impacts</p> <p>During construction, all the criteria pollutant emissions would not exceed SCAQMD’s daily significance thresholds and, would not result in a temporary adverse impact.</p> <p>None of the criteria pollutant emissions are predicted to exceed localized significance thresholds. Therefore, localized impacts from criteria pollutant emissions would not result in a significant impact to air quality.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Air Quality				
Proposed Project	<p>Permanent Impacts</p> <p>Project operation would not result in an incremental increase of greenhouse gases relative to the No Project alternative.</p> <p>The proposed project is included in the 2011 FTIP under project IDs LA0F007, LA0F008, and LA0F009. Because the proposed project would not increase traffic throughput or increase the capacity of the viaduct complex, no increases in criteria pollutants would result that could cause adverse impacts to air quality. In addition, the new signalized intersection at the reconfigured northbound I-5 off-ramp to Glendale Boulevard would save vehicle miles traveled (VMT) and would operate at a free flowing level (LOS B), so no CO or particulate matter hotspots are expected to occur from project operation. Similarly, this new intersection is not expected to result in PM2.5 hotspots due to the free flowing level of service and saved VMT.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would result in no new or additional impacts related to air quality relative to existing conditions.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Noise				
Proposed Project	<p>Temporary Impacts</p> <p>Construction activities would be noisy but would be conducted in compliance with all applicable laws, including the Los Angeles Municipal Code.</p> <p>Permanent Impacts</p> <p>The Glendale Boulevard bridges would be widened, but the traffic lanes would not be noticeably moved from their current locations, as road shoulders would be installed. As a result, noticeable changes in traffic noise levels are not expected to occur.</p> <p>The reconfiguration of the northbound I-5 off-ramp to Glendale Boulevard would reduce vehicle miles traveled along Glendale Boulevard, resulting in a slight reduction in traffic noise along Glendale Boulevard.</p>	<p>CEQA- Not Significant NEPA- Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would result in no new or additional impacts related to noise relative to existing conditions.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

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Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Wetlands				
Proposed Project	<p>Temporary Impacts</p> <p>The in-river work area is completely paved and contains only a small area (approximately 2,000 square feet) of common wetland plants. This vegetation would have to be removed to accommodate the proposed retrofits but would not represent a substantial loss of wetland habitat.</p> <p>Construction activity would be limited to the existing in-river concrete pad and would not encroach into the wetlands present 50 feet upstream and 120 feet downstream of the concrete work area. As a result, no direct loss of this wetland vegetation would occur.</p> <p>Construction related activities occurring within or above the river channel could pollute surface waters in the channel and carry pollutants downstream into wetland habitat.</p> <p>In-river flow diversion structures have the potential to reduce the availability of water to wetlands immediately downstream of construction site.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Significant NEPA-Not Adverse</p> <p>CEQA-Significant NEPA-Not Adverse</p>	<p>None required</p> <p>None Required</p> <p>B-1: Cofferdams or other approved flow diversions should be erected in the existing concrete channel during project construction.</p> <p>B-2: Maintain the regular flow of the river across the full width of the channel immediately downstream of the construction site, keeping the downstream wetlands watered.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Wetlands				
Proposed Project	<p>Permanent Impacts</p> <p>Because none of the project’s pier extensions or foundations would encroach into any unlined portion of the Los Angeles River, no adverse permanent impacts to wetlands or wetland communities would occur.</p> <p>Sparse freshwater emergent plants have established along the base of pier abutments. This vegetation would have to be removed to accommodate the proposed retrofits.</p> <p>Construction related activities occurring within or above the river channel could pollute surface waters in the channel and carry pollutants downstream into wetland habitat.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>None Required</p> <p>Implement Measure B-1.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would not provide seismic or other improvements to the viaduct complex, and as such, would not result in any impacts to wetlands.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Plant Species				
Proposed Project	<p>Temporary Impacts</p> <p>The in-river work area is completely paved and is therefore unlikely to support special status plant species.</p> <p>In-river flow diversion structures have the potential to reduce the availability of water to wetlands immediately downstream. Therefore, Davidson’s bush mallow, Parish’s gooseberry, and San Bernardino aster could be adversely affected if present and flow is not restored adequately.</p> <p>Permanent Impacts</p> <p>The in-river work area is completely paved and is therefore unlikely to support special status plant species.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>Implement Measure B-2.</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would not improve the viaduct complex, and would not result in any impacts to special-status plant species.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Animal Species				
<p>Proposed Project</p>	<p>Temporary Impacts</p> <p>Because impacts to wetland vegetation often affect the animals that utilize them as habitat, potential impacts to wetlands and plants also apply to wildlife.</p> <p>If project construction would occur during the bird nesting season (between February 15th and August 31st) there is potential for construction noise to disrupt breeding activities for Peregrine falcon and migratory birds protected under the MBTA.</p> <p>Construction-related activities occurring within or above the river channel could pollute surface waters in the channel and carry pollutants downstream into wetland habitat and increase water turbidity which could impact the arroyo chub, a CDFG species of special concern. Pollutants include construction materials, dust, debris, soils and construction related water wastes.</p>	<p>CEQA-Significant NEPA-Adverse</p> <p>CEQA-Significant NEPA-Not Adverse</p> <p>CEQA-Significant NEPA-Not Adverse</p>	<p>Implement Measures B-1, B-2, and implement Measure B-3: a Worker Environmental Awareness Program (WEAP) will be presented to all construction personnel on site.</p> <p>B-4: A qualified biologist should conduct pre-construction nest surveys of riparian habitat and viaduct complex structures to identify any nests within 500 feet of the work area.</p> <p>B-5: Retain a biological monitor on site for the duration of construction activities during nesting bird season.</p> <p>B-6: A qualified biologist should conduct a preconstruction survey of the concrete pad immediately below the viaduct complex for arroyo chub. If any arroyo chub are found, they will be collected with seine netting and relocated downstream.</p> <p>B-7: Install turbidity curtains at the downstream end of the work zone for the duration of in-channel construction. Turbidity curtains will be inspected weekly and prior/following storm events.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Animal Species				
Proposed Project	<p>Temporary Impacts</p> <p>If project construction occurs during the bat breeding season (April 15th through August 1st), there is potential for construction to disrupt breeding/roosting activities for four special status bat species.</p> <p>Permanent Impacts</p> <p>Because no project construction activities would occur in or above an unlined portion of the river channel, no significant permanent adverse impacts to habitat for special status animal species would be expected to occur.</p>	<p>CEQA-Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>B-8: Conduct pre-construction surveys for bats. If they are found, implement further measures defined in B-8.</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would not provide seismic or other improvements to the viaduct complex, and as such, would not result in any impacts to special-status animal species that may occur in the project vicinity.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Table S-2. Summary of Environmental Effects

Resource Areas and Alternatives	Environmental Impacts	Impact Determination (CEQA/NEPA)	Mitigation Measures (CEQA) Minimization Measures (NEPA)	Impact after Minimization or Mitigation (CEQA/NEPA)
Threatened and Endangered Species				
Proposed Project	<p>Temporary Impacts</p> <p>The in-river work area is completely paved and does not contain suitable habitat for Gambel’s water cress or the Southwestern willow flycatcher. As a result, construction activities would not reduce habitat for these federally listed species.</p> <p>Construction related activities occurring within or above the river channel could pollute surface waters in the channel and carry pollutants downstream into wetland habitat containing Gambel’s water cress and Southwestern willow flycatcher.</p> <p>In-river flow diversion structures have the potential to reduce the availability of water to wetlands immediately downstream which could negatively impact Gambel’s water cress.</p> <p>If project construction would occur during breeding season for the Southwestern willow flycatcher, there is potential for construction noise to disrupt its breeding activities.</p> <p>Permanent Impacts</p> <p>The in-river work area is completely paved and does not contain suitable for Gambel’s water cress or the Southwestern willow flycatcher. As a result, construction activities would not reduce habitat for these federally listed species.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p> <p>CEQA-Significant NEPA-Adverse</p> <p>CEQA-Significant NEPA-Adverse</p> <p>CEQA-Significant NEPA-Adverse</p> <p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p> <p>Implement Measure B-1</p> <p>Implement Measure B-2</p> <p>Implement Measure B-3</p> <p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>
No Build Alternative	<p>The No Build Alternative would not provide seismic or other improvements to the viaduct complex, and as such, would not result in any impacts to threatened or endangered species that may occur in the project vicinity.</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>	<p>None Required</p>	<p>CEQA-Not Significant NEPA-Not Adverse</p>

Chapter 1 Proposed Project

1.1 Introduction

The Glendale Boulevard-Hyperion Avenue Viaduct Complex (viaduct complex) is located between Atwater Village in the Northeast Los Angeles Community Planning Area and the Hollywood Community Planning Area of the City of Los Angeles. Figure 1-1 shows the project in its regional context. The viaduct complex, completed in 1929, spans approximately 1,190 feet over the Los Angeles River, Interstate 5 (I-5), and Riverside Drive. Figure 1-2 shows the project location and depicts the viaduct complex and the immediate area.

The viaduct complex consists of the following structures:

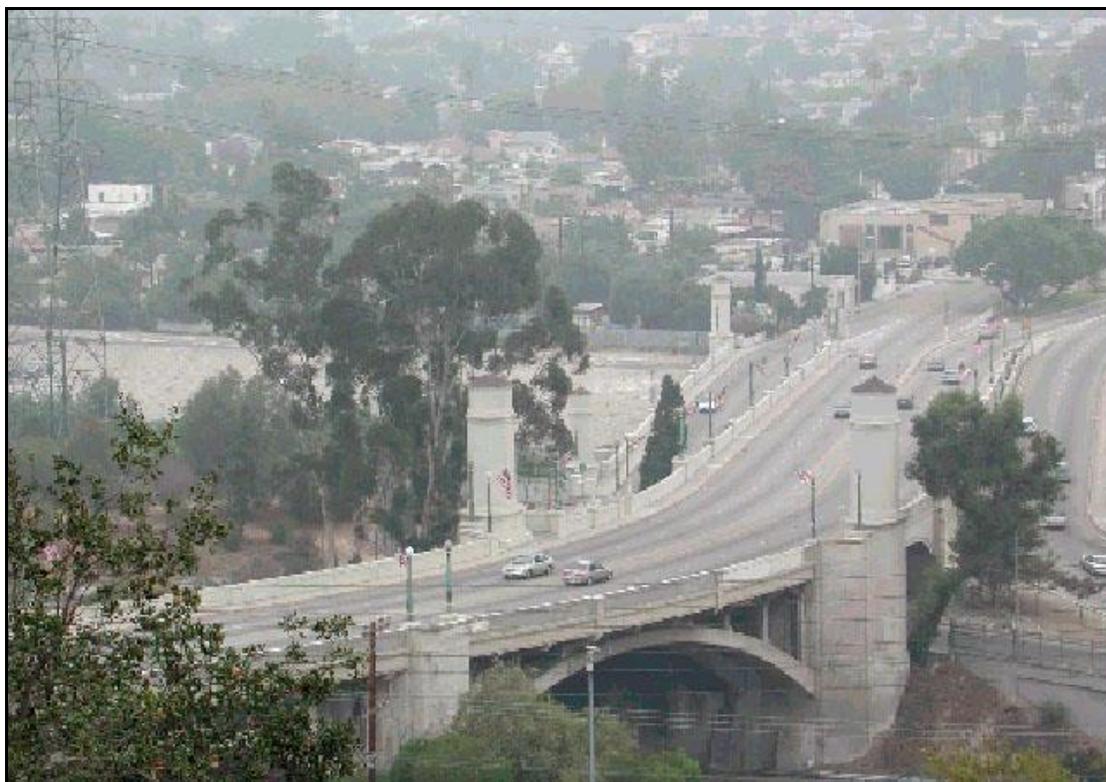
- Waverly Drive Bridge (Bridge Number 53C-1179)
- Hyperion Avenue Viaduct over Riverside Drive (53C-1882)
- Hyperion Avenue Viaduct over I-5 (53-1069)
- Hyperion Avenue Viaduct over the Los Angeles River (53C-1881)
- Southbound Glendale Boulevard Bridge over the Los Angeles River (53C-1883)
- Northbound Glendale Boulevard Bridge over the Los Angeles River (53C-1884)

The viaduct complex is generally aligned along a southwest-northeast axis and is bounded by Etrick Street on the southwest and Glenfeliz Boulevard on the northeast, respectively. Photograph 1 shows the viaduct complex as seen from the hillside to the southeast. The width of the existing roadway on Glendale Boulevard is approximately 34 feet in each direction. The width of the existing roadway on Hyperion Avenue is 54 feet in both directions combined. A portion of the Hyperion Avenue Viaduct (531069) spans I-5 and is under the jurisdiction of the California Department of Transportation (Caltrans). Of the six structures comprising the viaduct complex, this is the only component that is part of the State Highway System. The five other structures are under the jurisdiction of the City of Los Angeles.

The viaduct complex connects Hyperion Avenue in the Griffith Park area of the Hollywood community with Glendale Boulevard in the Atwater area of the Northeast Los Angeles community.

The six structures that comprise the viaduct complex have been determined, in their entirety, to be eligible for listing in the National Register of Historic Places (NRHP). The viaduct complex is also designated as Los Angeles Historic-Cultural Monument Number 164.¹

¹ City of Los Angeles, “Historic-Cultural Monument (HCM) List,” available online at: http://preservation.lacity.org/files/HCMDatabase111510_0.pdf.

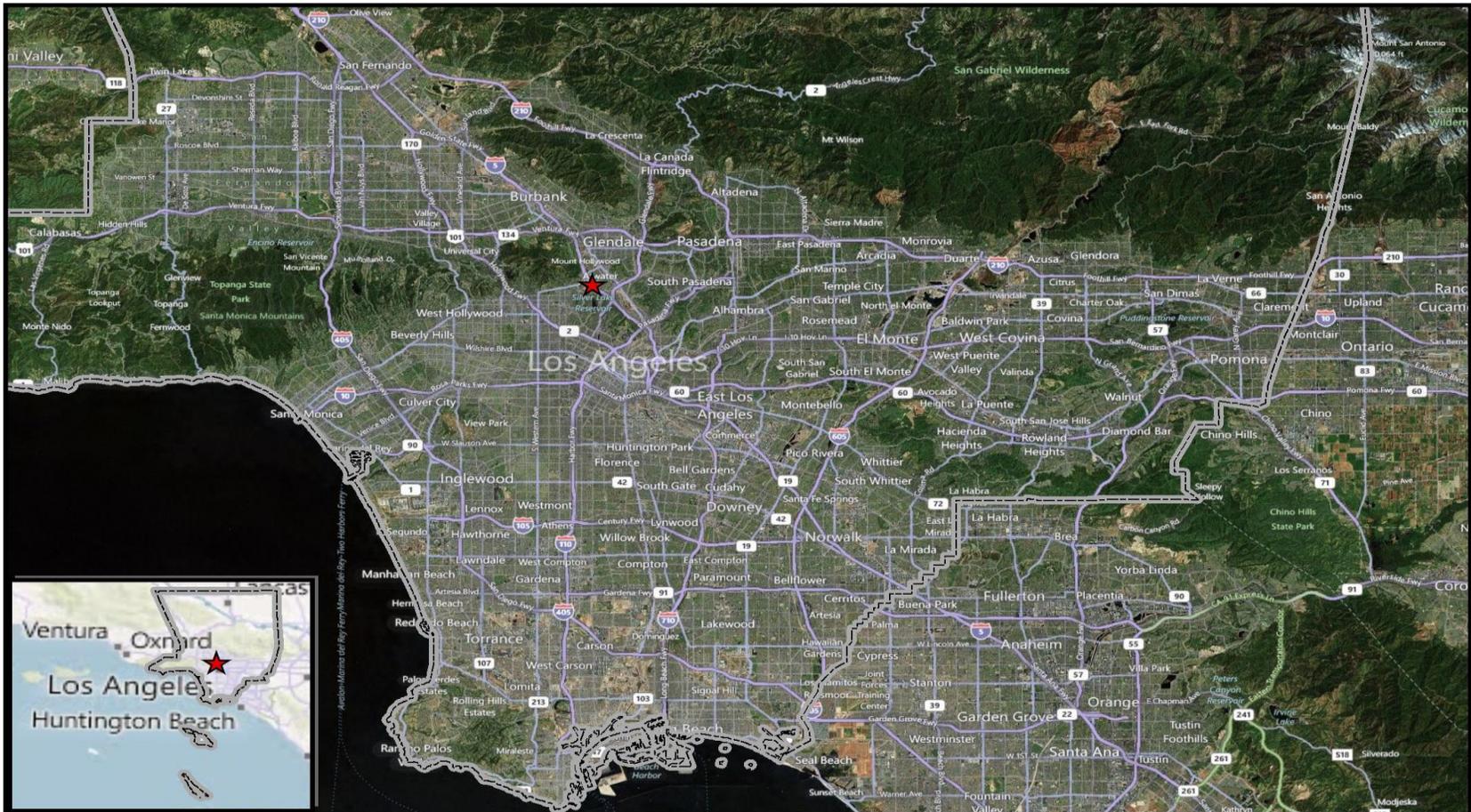


Photograph 1: Northern View of the Glendale Boulevard-Hyperion Avenue Viaduct Complex

This project is included in the FY 2011/2012 Federal Transportation Improvement Program (FTIP) and is proposed for partial funding from the Highway Bridge Program (HBP) authorized by the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU), Public Law 109-59. In addition, the project is included in the 2011 Southern California Association of Governments (SCAG) Regional Transportation Improvement Program (RTIP).

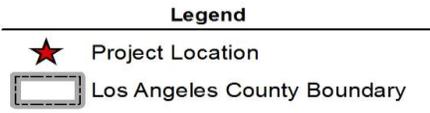
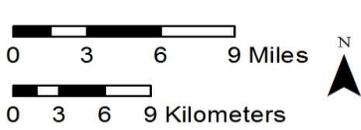
The project is subject to federal as well as state environmental review requirements because the City proposes the use of federal funds from the Federal Highway Administration (FHWA) and/or the project requires a FHWA approval action. FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to Section 6005 of SAFETEA-LU codified at 23 U.S.C. 327(a)(2)(A). Effective July 1, 2007, FHWA has assigned, and Caltrans has assumed, all the USDOT Secretary's responsibilities under the National Environmental Policy Act (NEPA). Caltrans is the NEPA lead agency and the City is the California Environmental Quality Act (CEQA) lead agency

Following receipt of public comments on this Initial Study/Environmental Assessment, the lead agencies will consider the comments and take actions regarding the environmental document and the project. Before making a decision on approval of the project, the City will determine whether to adopt a MND or require preparation of an Environmental Impact Report (EIR) under CEQA, and Caltrans will decide whether to issue a Finding of No Significant Impact (FONSI) or require preparation of an Environmental Impact Statement (EIS) under NEPA.



Source: UltraSystems Environmental, Inc., 2011; Bing Maps, 2011

November 7, 2011



Glendale-Hyperion Viaduct Complex

Regional Map

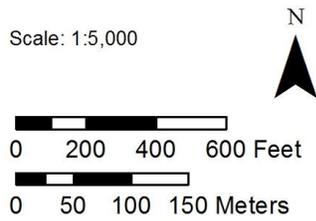
Map Depicting Project Site in the L.A. Region

Figure 1-1: Regional Map



Source: Bing Maps, 2009; Ultrasystems Environmental, Inc, 2011

November 7, 2011



**Glendale-Hyperion
Viaduct Complex**
Project Overview Map

Figure 1-2: Project Overview Map

1.2 Project Purpose and Need

1.2.1 Purpose

The purpose of the proposed project is to:

- Reduce vulnerability of the Glendale Boulevard-Hyperion Avenue viaduct complex in major earthquake events
- Resolve design deficiencies of the Glendale Boulevard-Hyperion Avenue viaduct complex
- Improve traffic safety and traffic circulation to increase the operational efficiency of the viaduct complex

1.2.2 Need

A bridge must be geometrically adequate in order to function properly. The determination of geometric adequacy includes the consideration of several components, including the number of travel lanes; roadway width; shoulder width; approach roadway width; vertical clearance over the roadway, underclearances; horizontal clearances; sight distances across the bridge and at the approaches; proximity to intersections; and the functional classification of its associated roadways.

FHWA uses a sufficiency rating (SR) metric to indicate whether a bridge is structurally deficient (SD) or functionally obsolete (FO). These safety ratings are used to establish eligibility for (Highway Bridge Program) HBP funds and are derived from bridge inspection reports prepared in cooperation with Caltrans' Office of Structure Maintenance and Investigations (OSM&I). Each bridge inspection report includes SR, SD, FO, and other data. Bridges that are SD or FO with an SR under 80 (out of a possible 100) are considered deficient by FHWA and are candidates for placement on the Eligible Bridge List (EBL). The SR of the Glendale-Hyperion Viaduct Complex was determined to be 72, which classifies it as "functionally obsolete" under the FHWA ranking criteria.

With the exception of the Waverly Drive Bridge, each of the bridge structures of the viaduct complex requires seismic retrofitting to meet current design standards of the City of Los Angeles and State of California. In addition, existing geometric configurations of several of the viaduct Complex's structures do not meet current design standards for operational safety.

The design-related deficiencies of the viaduct complex include the following:

- Inadequate curb-to-curb width to meet major highway design standards.*
- Inadequate lateral clearance beneath the Hyperion Bridge (53C-1881).
- Absence of shoulders.*
- Deteriorated railings. *
- Inadequate pedestrian facilities along Hyperion Avenue and Glendale Boulevard.

* These deficiencies are common to all structures.

In addition to the design deficiencies listed above, there are other nearby circulation system issues that detract from the optimal operational efficiency of the viaduct complex. As an example, the northbound I-5 off-ramp to Glendale Boulevard terminates at Glendale Boulevard and only allows right turns onto northbound Glendale Boulevard. Motorists wishing to travel southbound on Glendale Boulevard must first make a right turn onto Glendale Boulevard, travel over the northbound Glendale Boulevard Bridge (over the Los Angeles River), merge to the far left lane to enter a turning pocket at Glenfeliz Boulevard, make a U-turn at this location, travel south on Glendale Boulevard over the southbound Glendale Boulevard Bridge, and after traveling under the Hyperion Avenue viaduct, continue south on Glendale Boulevard. Furthermore, the existing northbound I-5 off-ramp to Glendale Boulevard is deficient in that the sight distance at this ramp intersection does not meet Caltrans standards for corner sight distance for stop-controlled freeway exit traffic. Traffic volume and Level of Service (LOS) data are presented in Tables 2.4-1 through Tables 2.4-4. In order to improve the operational efficiency of the viaduct complex and related surrounding circulation system, there is also a need to reconfigure the northbound I-5 off-ramp to Glendale Boulevard.

1.2.2.1 Seismic Deficiencies

The current viaduct complex presents a risk to public safety due to the potential for collapse under recently revised maximum credible event (earthquake) design criteria. Each of the viaduct complex's component structures, except the Waverly Drive Bridge, requires seismic retrofitting to meet current Caltrans and City of Los Angeles design standards. These standards were revised based upon observations following the Loma Prieta and Northridge earthquakes.

In addition to the hazard to users associated with a potential for collapse under earthquake conditions, the viaduct complex extends over a portion of the I-5 freeway, thereby exposing users of that facility to an associated risk. Thus, there is a need to seismically strengthen the viaduct complex to minimize associated seismic risks to public safety and to minimize risks to the public transportation system.

1.2.2.2 Design Deficiencies

Curb-to-Curb Widths

Hyperion Avenue along the viaduct complex has two lanes in each direction, both of which are 12 feet wide. An 8-foot, double-striped median separates the traffic in each direction. Under American Association of State Highway and Transportation Officials (AASHTO) design standards, a minimum curb-to-curb width of 56 feet is required to remove the deficiency related to deck geometry. This includes 12-foot inner lanes, 14-foot curb lanes (12-foot travel lane and 2-foot shoulder), and a 4-foot median along Hyperion Avenue.

The Northbound Glendale Boulevard Bridge and the Southbound Glendale Boulevard Bridge (both over the Los Angeles River) have two 12-foot-wide travel lanes each, and these bridges do not meet AASHTO standards.

Lateral Clearance

The lateral clearance under Hyperion Avenue between the Abutment No. 4 and the left lane along southbound Glendale Boulevard (as it passes beneath the Hyperion Viaduct) is sub-standard, and there is a need to correct this deficiency.

Shoulders

Both Glendale Boulevard northbound and southbound bridges over the Los Angeles River currently lack shoulders. Since these connect to State Highway System (SHS) facilities (northbound and southbound I-5 ramps), a minimum shoulder width of four feet is required. The curb-to-curb widths of these two structures do not currently meet the design standard.

Railings

The railings along the viaduct complex were originally balustrades, but were covered with gunnite in 1962 as part of a rail repair project (CLA, 1962). The current railings are deteriorating with signs of spalling and cracking, with the covering along some sections showing physical separation. The railings are also considered to be deficient in certain sections due to damage caused by vehicle collisions.

Pedestrian Facilities

The current pedestrian facilities along Hyperion Avenue and Glendale Boulevard viaducts are inadequate and present safety hazards to pedestrians. Currently, 5-foot-wide sidewalks are along both the east and west sides of the viaduct complex's Hyperion Avenue roadway from the retaining wall near Waverly Drive northward to Hyperion Avenue's merger with north- and southbound Glendale Boulevard.

On the east side of Hyperion Avenue (southern end), the sidewalk terminates at the retaining wall, which supports the Waverly Drive Bridge (over Hyperion Avenue). However, a 2-foot-wide curb extends along the abutment/retaining wall adjacent to the northbound traffic. Pedestrians using the east sidewalk must walk along this narrow curb after the sidewalk ends and are exposed to vehicular traffic.

On the west side of the viaduct complex's Hyperion Avenue roadway, the sidewalk also terminates at a 2-foot-wide curb that extends along the retaining wall base. An ascending walkway aligned along the top of the west retaining wall provides an alternative for pedestrian use rather than navigating the 2-foot curb lying adjacent to the southbound traffic lane. However, despite the presence of this safer alternative, many pedestrians elect to use the 2-foot curb, which exposes them to traffic hazards.

The Hyperion Avenue roadway merges with and transitions to Glendale Boulevard at the northern end of the viaduct complex. A landscaped median extends from the merge point almost to Glenfeliz Boulevard to the north. Southbound and northbound Glendale Boulevard roadways extend on either side of both the merge point and the median. The existing sidewalks on either side of Hyperion Avenue terminate at the merge point and force pedestrians to cross either northbound or southbound Glendale Boulevard traffic without benefit of a designated cross walk against Glendale Boulevard traffic, which generally travels at a high rate of speed.

The existing pedestrian facilities on both northbound and southbound Glendale Boulevard viaducts over the Los Angeles River are approximately 3.5 to 4-foot-wide sidewalks. These extremely narrow sidewalks are inadequate, and expose pedestrians travelling this section of either side of Glendale Boulevard to safety hazards caused by high-speed vehicular traffic.

There are two staircases within the project area where pedestrians can access Hyperion Avenue and Glendale Boulevard. One, which connects Glendale Boulevard and Hyperion Avenue, is located on the west side of Hyperion Avenue. A second staircase provides pedestrian access

between Riverside Drive and Hyperion Avenue, and is also on the west side of Hyperion Avenue.

1.2.2.3 I-5 Ramp Deficiencies

The northbound I-5 off-ramp to Glendale Boulevard is configured for a right turn only onto northbound Glendale Boulevard. Under the current ramp configuration, vehicles exiting I-5 are confronted with a semi-blind right turn onto Glendale Boulevard and are obscured from the view of northbound motorists (approaching from the south). As shown in **Table 1-1**, the total actual accident rates along southbound I-5 and the northbound I-5 off-ramp to Glendale Boulevard are above the statewide average accident rates for similar facilities. Northbound I-5 and the northbound on-ramp from Glendale Boulevard are both below the statewide average accident rates for similar facilities.

Table 1-1: Actual and Statewide Average Accident Rates for I-5

From April 1, 2007 to March 31, 2010

Location I-5 (Post Mile 23.0/24.0)	Actual			Statewide Average		
	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
NB Off-Ramp to Glendale Blvd (Acc/MV)	0	0.12	1.07	0.006	0.33	0.90
NB On-Ramp from Glendale Blvd (Acc/MV)	0	0.25	0.52	0.003	0.22	0.6085

Acc/MVM: Accidents Per Million Vehicle Miles

Acc/MV: Accidents Per Million Vehicles

Source: MGE Engineering, Inc., Glendale Boulevard-Hyperion Avenue Viaduct Complex Improvement Project Draft Project Report, January, 2012 (MGE, 2012)

In addition, motorists exiting northbound I-5 at this location wishing to travel south on Glendale Boulevard must first travel north on Glendale Boulevard, weave across up to three lanes of traffic beyond the Hyperion Avenue merge point but before the intersection of Glendale Boulevard with Glenfeliz Boulevard (a distance of approximately 400 feet). The motorists must then execute a U-turn at Glenfeliz Boulevard to connect with southbound Glendale Boulevard. These maneuvers introduce a high level of operational inefficiency throughout the involved segment.

1.2.3 Independent Utility and Logical Termini

The proposed project is deemed to have independent utility and would meet logical termini requirements. Independent utility refers to the project's ability to independently function without additional transportation improvements in the area. Logical termini for a project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts.

The project would improve a functionally obsolete bridge that traverses a major freeway (I-5) and the Los Angeles River, as well as seismically strengthen the viaduct complex to meet current seismic standards. The project would also reconfigure the northbound I-5 off-ramp to Glendale Boulevard and install a new signalized intersection. The new signalized intersection would permit exiting northbound motorists to make left turns directly onto southbound Glendale Boulevard and eliminate the need to first travel north to execute U-turns at Glenfeliz Boulevard. The project has independent utility because it would correct current seismic and design deficiencies, and would improve the operational efficiency of a defined structure along an existing roadway without the need for additional improvements in the area. The defined structure, the viaduct complex, is bounded by Etrick Street on the southwest and Glenfeliz Boulevard on the northeast. These points serve as logical termini, based on the project features to meet the purpose and need.

1.3 Project Description and Alternatives

This section describes the proposed action and the design alternatives that were developed by the City to achieve the project purpose and need while avoiding or minimizing environmental impacts. The alternatives are the Proposed Action, No-Build Alternative, Transportation System Management/Transportation Demand Management Alternative, and five other Build Alternatives considered but withdrawn from further discussion.

Each alternative was evaluated based on its ability to meet project's purpose and need objectives, ability to avoid or substantially lessen significant impacts or result in minimum environmental impacts, costs, and implementation feasibility. Thus, the Proposed Action is considered most viable after careful evaluation and meets the described criteria for evaluation.

1.3.1 Proposed Action

The viaduct complex spans both I-5 and the Los Angeles River in the Northeast Los Angeles Community Planning Area of the City. The Proposed Action would modify the viaduct complex to address safety and operational deficiencies, pedestrian safety issues, and current seismic deficiencies. These efforts would be sufficient to remove the viaduct complex from the HBP EBL. In addition, the proposed project would restore original design details to the railings, and eliminate an existing sight-line hazard associated with the I-5 off-ramp. The current funding amount scheduled to complete the bridge improvement is approximately \$35,595,000. The following descriptions of proposed improvements are organized by the components that comprise the viaduct complex. An overview of the project footprint is provided in Figure 1-3.

1.3.1.1 Hyperion Avenue from south of Waverly Drive to Glendale Boulevard

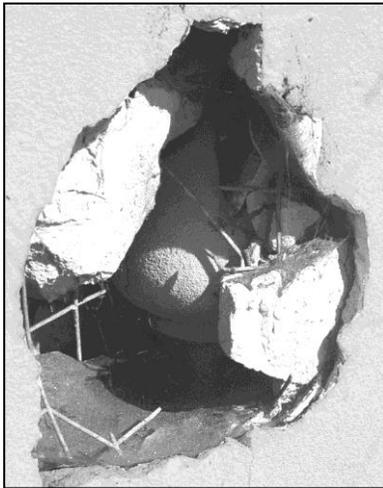
Modifications to this section of the viaduct complex would occur to the three Hyperion Avenue Bridges (53C-1881, 53C-1882, & 53-1069) and would include the following:

Sidewalk and Curb – East Side. The existing 2-foot curb along the east side of Hyperion Avenue (adjacent to the retaining wall beneath the Waverly Drive Bridge) and the 5-foot sidewalk along the east side of Hyperion Avenue (north of the retaining wall) would be eliminated, and a concrete crash barrier would be placed along the rails. Figure 1-4 below shows a typical cross-section for this portion of Hyperion Avenue.

Sidewalk and Curb – West Side. The existing 5-foot-wide sidewalk along the west side of the Hyperion Avenue Bridge and the 2-foot-wide curb adjacent to the retaining wall beneath Waverly Drive would be replaced with a new 8-foot-wide sidewalk (north of the retaining wall) that tapers from eight feet to four feet adjacent to the retaining wall (at approximately the point where the staircase from Riverside Drive meets Hyperion Avenue). This 4-foot-wide section of the sidewalk against the retaining wall would be about 1 foot high (above the roadway). North of the retaining wall, tubular railing atop a concrete safety barrier would be constructed between the widened sidewalk and the southbound traffic lanes to provide a physical barrier between vehicular traffic and the sidewalk for increased pedestrian safety (see Figure 1-4 for the cross sectional drawing).

Pedestrian Crossing. At the north end of the viaduct complex, a pedestrian crosswalk extended from the improved sidewalk along the west side of Hyperion Avenue to the west side of Glendale Boulevard (across southbound traffic on Glendale Boulevard) would be constructed (see Figure 3B above).

Hyperion Avenue Center Divider. The existing striped center divider along Hyperion Avenue on the viaduct complex would be replaced with a median barrier to physically separate northbound and southbound travel lanes in order to prevent cross-over accidents.



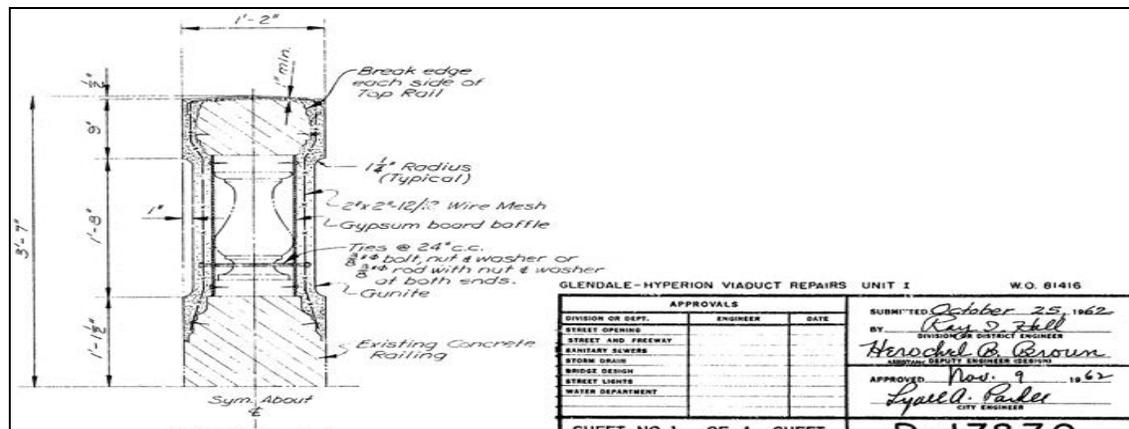
Photograph 2: Damaged Rail.

There have been several accidents along Hyperion Avenue on the viaduct complex whereby vehicles have collided into the rails and have damaged the rails and covering. At one location, a loose original baluster can be seen through a hole in the concrete rail cover (Photograph 2).

The existing concrete coverings also make it more difficult to assess the integrity of the balustrade structures. The City identified an as-built plan sheet (from a 1962 repair project), which provides the detail for how the rail coverings were applied. According to this plan sheet, the sides of the top rails were broken away, presumably to provide better bonding of the reinforced gunnite covering. Inset 1 below shows the applicable portion of the as-built plan sheet for the repair project. The railings were also considered to be partially deficient due to deterioration and damage caused by collisions with vehicles.

Traffic Lane Restriping. The proposed project would not include the addition of traffic lanes along the Hyperion Avenue segment of the viaduct complex. Rather, the existing four travel lanes would be retained and restriped to provide a new configuration of 12-foot-wide inner lanes and 14-foot-wide curb lanes along both travel directions of Hyperion Avenue.

Bridge Rail Replacement. The existing railings along the Hyperion Avenue and Glendale Boulevard viaducts, as well as the Waverly Bridge, were originally balustrades, but were covered with gunnite in 1962 and now have a solid appearance.



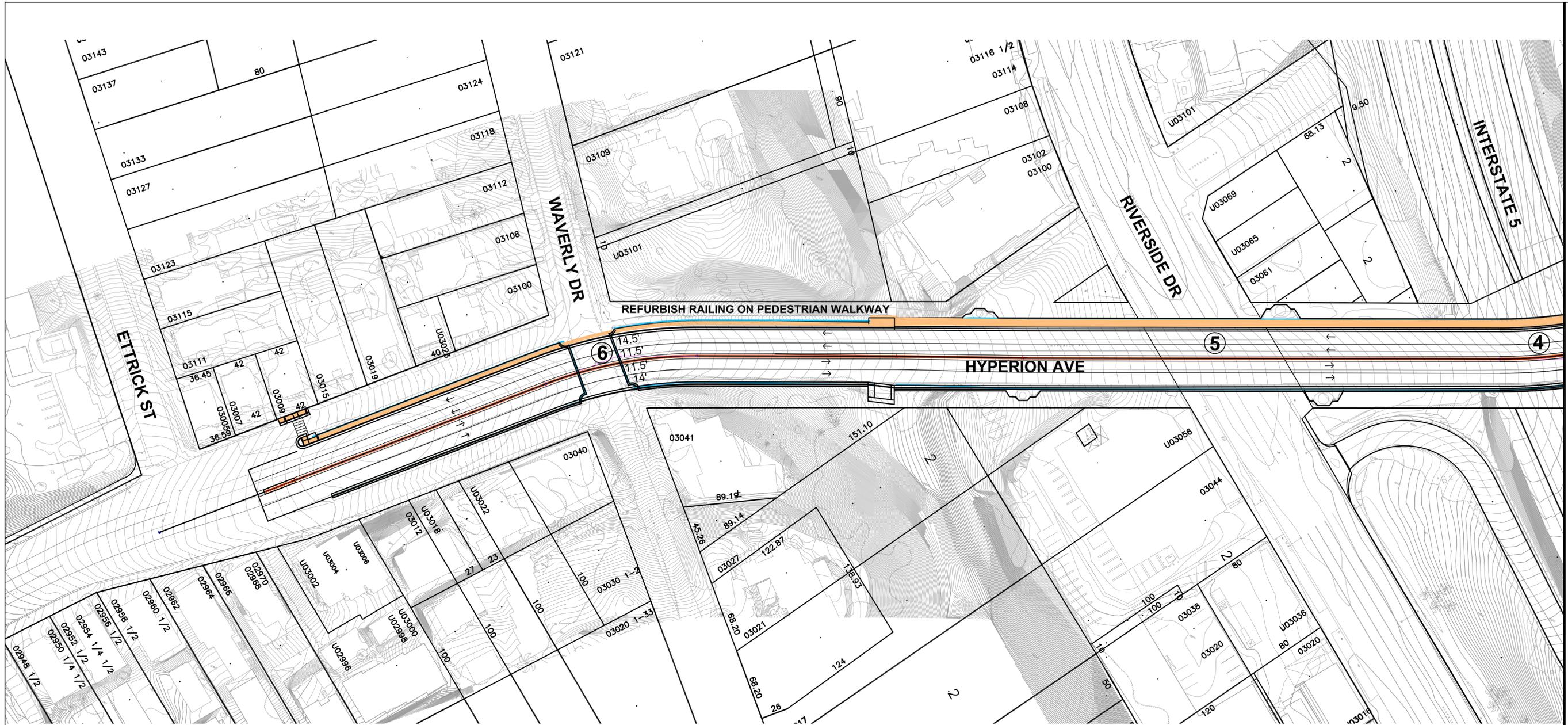
Inset 1: Balustrade Structures As-Built

The proposed project would restore the viaduct complex's railings to their original design, including the open balustrades, similar to those along the median at the north end.(see Photograph 3).



Photograph 3: Remnant Original Railing with Balustrade on Glendale Boulevard to be Replicated

Street Lighting. Construction of the replica balustrades would require work on the current pedestals on which lamp posts are mounted, which would necessitate the temporary removal of the existing lighting along the bridge. The existing posts would be carefully removed, stored, refurbished, and reused. Lighting fixtures would most likely be replaced with new LED Fixtures that meet the City's currently adopted lighting standards (the Illuminating Engineering Society of North America RP-8-00) (D. Nguyen, personal communication, October 5, 2007). Additional replica posts and fixtures could be added, if necessary, to meet the City's lighting standards.



MATCH LINE, SEE FIGURE 3A

-  PROPOSED BIKE/PEDESTRIAN TRAIL, SIDEWALK
-  PROPOSED HISTORIC RAILING REPLICATION
-  PROPOSED MEDIAN BARRIER
-  PROPOSED PEDESTRIAN CROSSWALK

- ① GLENDALE BOULEVARD NB BRIDGE WIDENING
- ② GLENDALE BOULEVARD SB BRIDGE WIDENING
- ③ HYPERION AVENUE BRIDGE OVER LA RIVER REHABILITATION
- ④ HYPERION AVENUE BRIDGE OVER I-5 SEISMIC RETROFIT
- ⑤ HYPERION AVENUE BRIDGE OVER RIVERSIDE DRIVE SEISMIC RETROFIT
- ⑥ WAVERLY DRIVE OVER HYPERION AVE HISTORIC RAILING REPLICATION
- ⑦ INTERSTATE 5 NORTH BOUND RAMP MODIFICATION
- ⑧ PEDESTRIAN & BICYCLIST LINKAGE IMPROVEMENT
- ⑨ BMP INFILTRATION BASIN

FIGURE 1-3A
PROJECT FOOTPRINT MAP

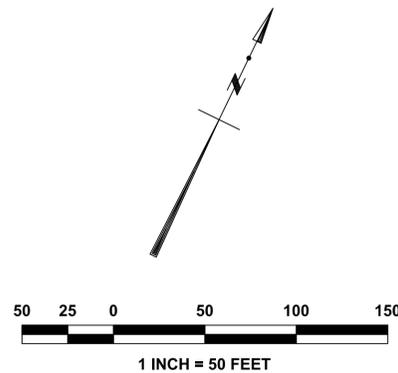
GLENDALE - HYPERION STRUCTURES
(53C-1881, 53C-1883, AND 53C-1884)
REHABILITATION AND SEISMIC RETROFIT DESIGN

SEPT 2013



ERIC GARCETTI
MAYOR

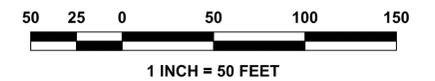
TOM LABONGE COUNCILMEMBER DISTRICT 4
MITCH O'FARRELL COUNCILMEMBER DISTRICT 13





ERIC GARCETTI
MAYOR

TOM LABONGE **MITCH O'FARRELL**
COUNCILMEMBER COUNCILMEMBER
DISTRICT 4 DISTRICT 13



-  PROPOSED BIKE/PEDESTRIAN TRAIL, SIDEWALK
-  PROPOSED HISTORIC RAILING REPLICATION
-  PROPOSED MEDIAN BARRIER
-  PROPOSED PEDESTRIAN CROSSWALK

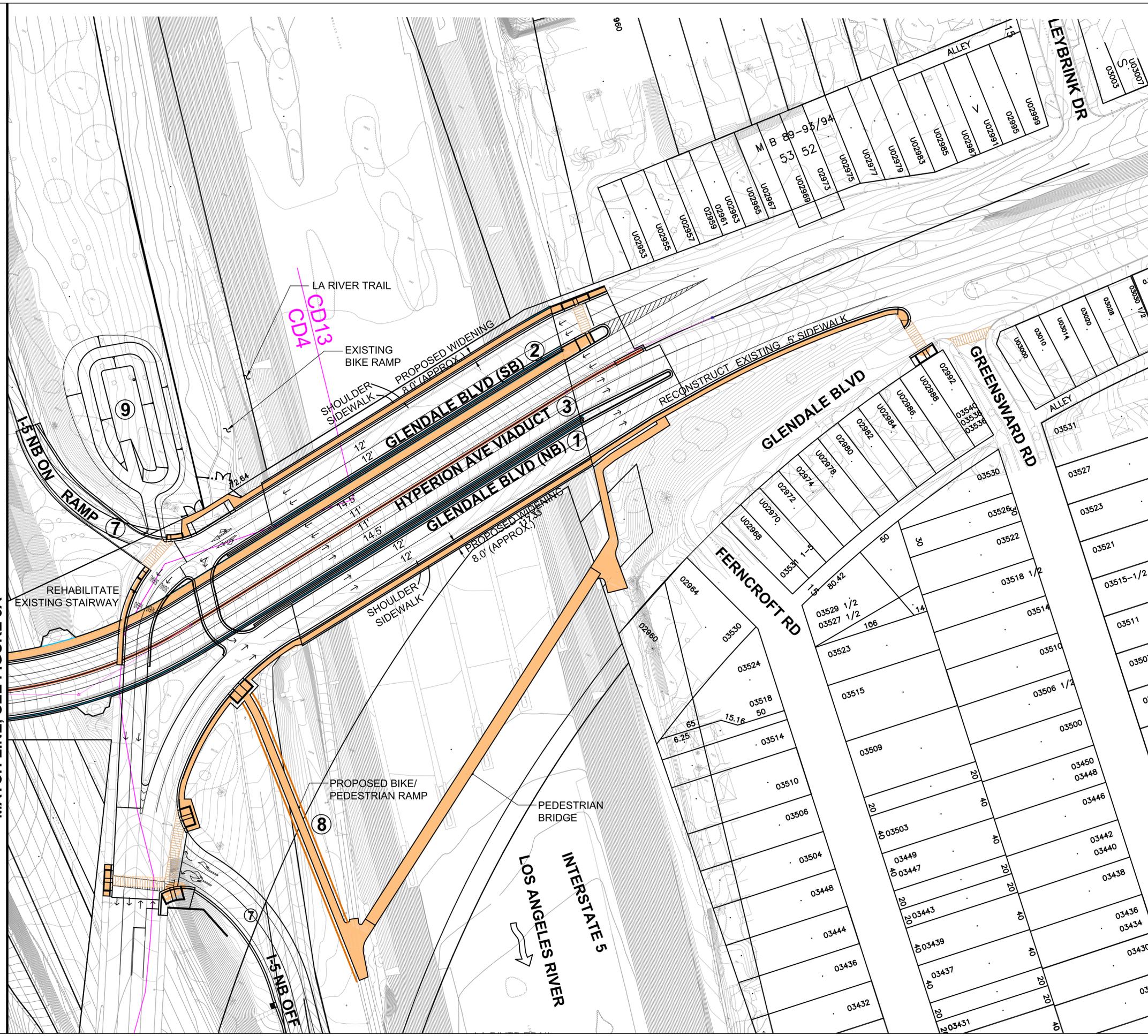
- ① GLENDALE BOULEVARD NB BRIDGE WIDENING
- ② GLENDALE BOULEVARD SB BRIDGE WIDENING
- ③ HYPERION AVENUE BRIDGE OVER LA RIVER REHABILITATION
- ④ HYPERION AVENUE BRIDGE OVER I-5 SEISMIC RETROFIT
- ⑤ HYPERION AVENUE BRIDGE OVER RIVERSIDE DRIVE SEISMIC RETROFIT
- ⑥ WAVERLY DRIVE OVER HYPERION AVE HISTORIC RAILING REPLICATION
- ⑦ INTERSTATE 5 NORTH BOUND RAMP'S MODIFICATION
- ⑧ PEDESTRIAN & BICYCLIST LINKAGE IMPROVEMENT
- ⑨ BMP INFILTRATION BASIN

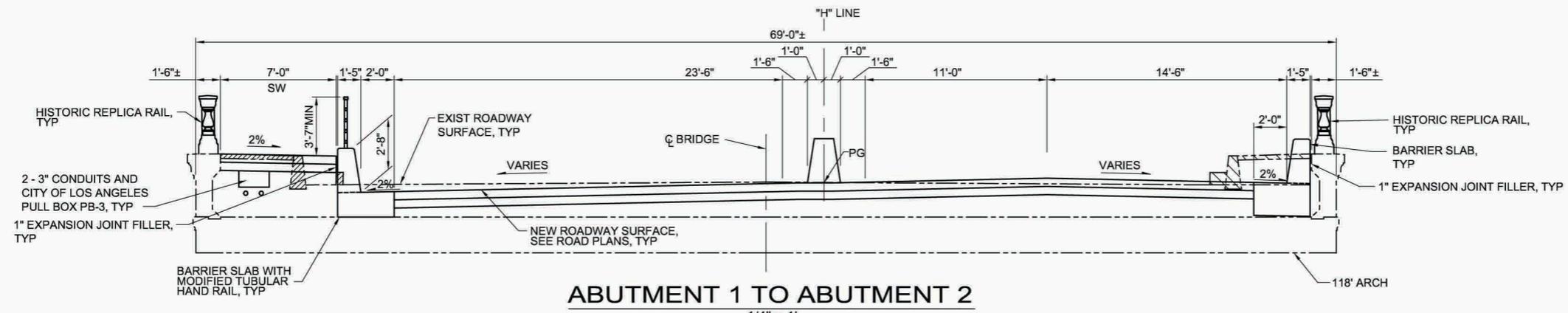
FIGURE 1-3B PROJECT FOOTPRINT MAP

GLENDALE - HYPERION STRUCTURES
(53C-1881, 53C-1883, AND 53C-1884)
REHABILITATION AND SEISMIC
RETROFIT DESIGN

SEPT 2013

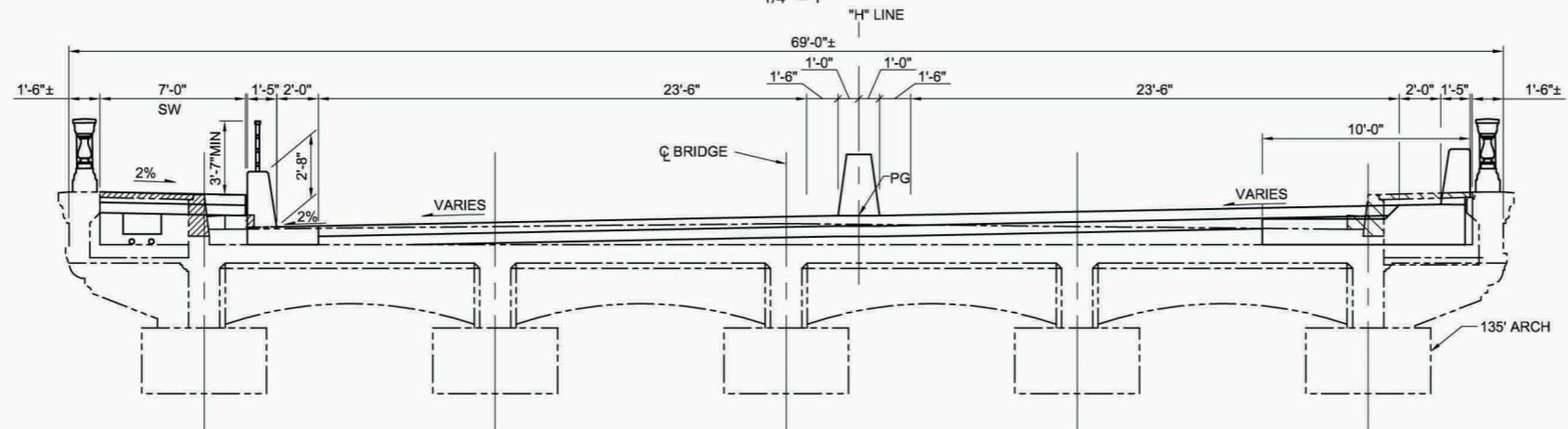
MATCH LINE, SEE FIGURE 3A





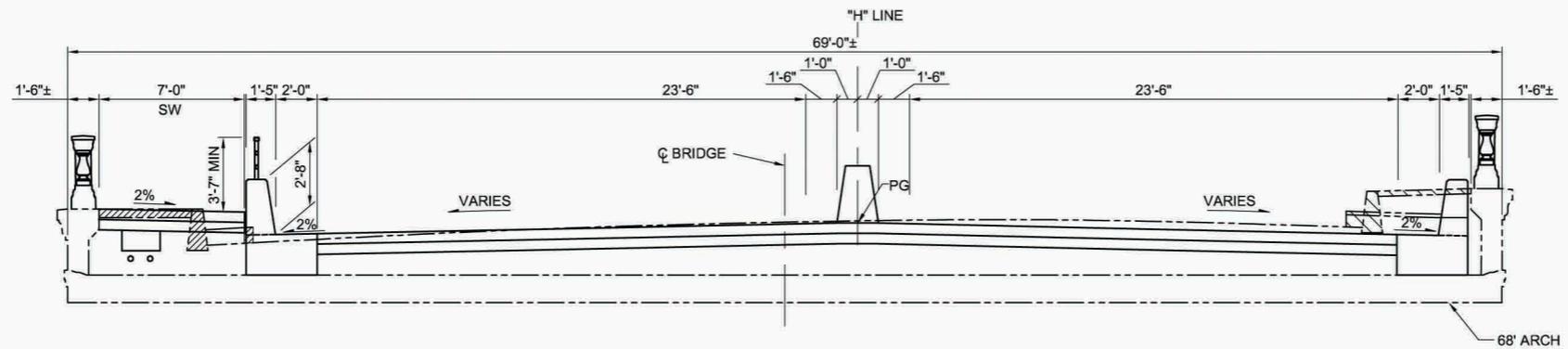
ABUTMENT 1 TO ABUTMENT 2

1/4" = 1'



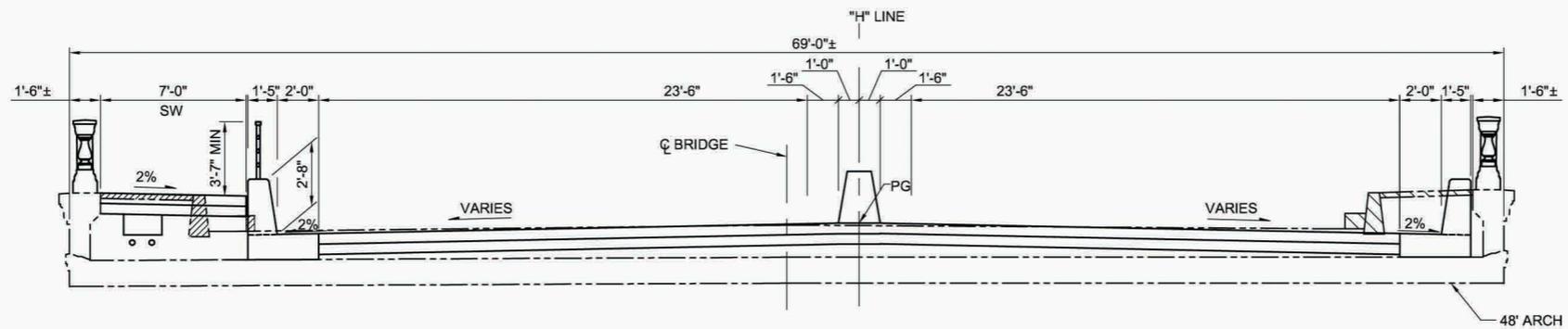
ABUTMENT 2 TO ABUTMENT 3

1/4" = 1'



ABUTMENT 3 TO PIER 3

1/4" = 1'



PIER 3 TO ABUTMENT 6

1/4" = 1'

LEGEND:
 INDICATES BRIDGE REMOVAL PORTION

FIGURE 1-4
HYPERION AVENUE CROSS SECTIONS
 (BR#53C-1882, BR#53C-1069 & BR#53C-1881)

1.3.1.2 Waverly Drive Bridge

Bridge Rail Replacement. The existing covered railings along the Waverly Drive Bridge over Hyperion Avenue would be replaced with new balustrades that more closely follow the original design (Photograph 3).

1.3.1.3 Northbound Glendale Boulevard Bridge over the Los Angeles River

Bridge Widening. The Northbound Glendale Boulevard Bridge (53C-1884) over the Los Angeles River would be widened by eight feet by extending the deck and pier supports to the southeast. This would provide room for a widened sidewalk and curb lane, as well as the addition of a curbside shoulder. The shoulder would facilitate a bicycle route as a transportation element in the 2010 Bicycle Plan. No additional travel lanes would be added. The existing abutments would be removed and reconstructed approximately eight feet to the east. Photograph 4 shows the existing piers and abutments (including the northern-most pylon), as well as the bicycle path along the Los Angeles River. As part of the bridge widening, the existing decorative pylons at either end of the bridge would be carefully removed and repositioned (CLA, 2007b). The bridge widening would require tapering of the new bridge width to the current roadway width just north of the bridge. This would utilize a small portion (approximately 90 square feet) of a landscaped median² in the Glendale Boulevard right-of-way.

Bridge Rail Replacement. The existing covered railing system (shown in Photograph 4) would be removed and replaced with railings that replicate the original design. The bronze, pedestal-



Photograph 4: Northbound Glendale Boulevard over the Los Angeles River

mounted light poles would be carefully removed, stored, and re-mounted on restored pedestals as part of the restored railing system. The replacement replica balustrade along northbound Glendale Boulevard would utilize the original balustrade design (see Photograph 3 above) but

² The landscaped median has been named “Red Car River Park” by the Friends of Atwater Village, but it is not an official park or recreation area, being entirely within the street right-of-way.

with spacing adjustments between the balusters to reflect current safety requirements. (The maximum center-to-center balustrade spacing would be up to 11.5 inches and would not allow a 6-inch diameter sphere to pass through.)

New Bike Path Access. A portion of the Los Angeles River Bikeway passes beneath the viaduct complex. Access to the bikeway is available from southbound Glendale Boulevard but not northbound Glendale Boulevard. The proposed project would construct a new access to the Los Angeles River bike path from northbound Glendale Boulevard, just south of the widened bridge.

Traffic Lane Restriping. The travel lanes would be restriped to accommodate a 6-foot shoulder and 5-foot 5-inch clear sidewalk.

1.3.1.4 Southbound Glendale Boulevard Bridge over the Los Angeles River

Bridge Widening. The southbound Glendale Boulevard Bridge (53C-1883) over the Los Angeles River would be widened by eight feet by extending the deck and supports to the northwest. This would provide room for a widened sidewalk and curb lane plus the addition of a curbside shoulder. The shoulder would facilitate a bicycle route as a transportation element in the 2010 Bicycle Plan. No additional travel lanes would be added. Figure 1-5 shows a cross section of southbound Glendale Boulevard. The existing piers would be extended northwestward to support the widened deck. The existing abutments would be extended approximately eight feet to the northwest. Photograph 5 below shows the existing piers and abutments (including the northern-most pylon), as well as the Los Angeles River. As part of the bridge widening, the existing pylons at either end of the bridge would be carefully removed and repositioned at the end of the new railing. Pylons would be reinstalled in the same configuration the railing and roadway as they currently exist.

Bridge Rail Replacement. The existing covered railing system (shown in Photograph 5) would be removed and replaced with railings that replicate the original design. The bronze, pedestal-mounted light poles would be carefully removed, stored, and re-mounted on restored pedestals as part of the restored railing system. The replacement replica balustrades along the southbound Glendale Boulevard Bridge (see Photograph 5) would utilize the original design (see Photograph 3 above) but with spacing adjustments between the balusters to reflect current safety requirements (the maximum center-to-center balustrade spacing would be up to 11.5 inches and would not allow a 6-inch diameter sphere to pass through).

Southbound to Northbound Turn-Around. The turn-around beneath the Hyperion Bridge that allows cars traveling southbound on Glendale Boulevard to turn around and travel northbound on Glendale Boulevard would remain in its current configuration.

Traffic Lane Restriping. The southbound Glendale Boulevard viaduct would be restriped to accommodate a 6-foot shoulder and 5-foot 5-inch clear sidewalk.

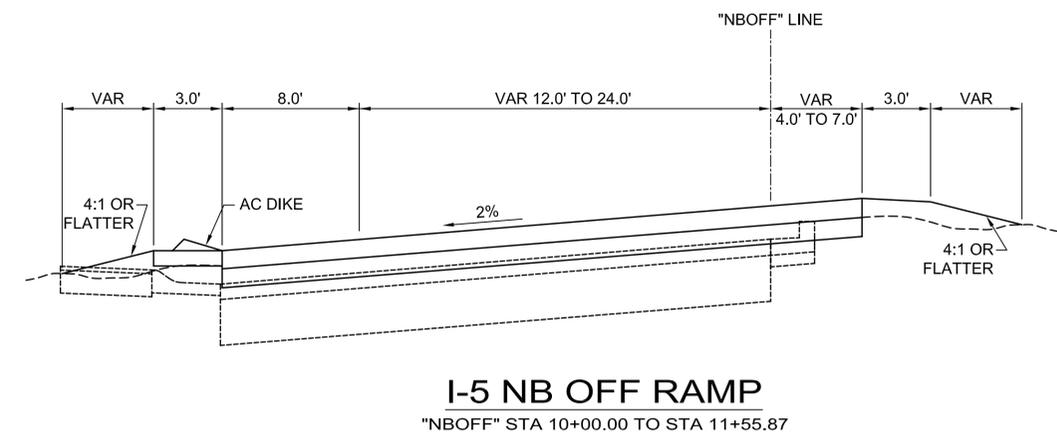
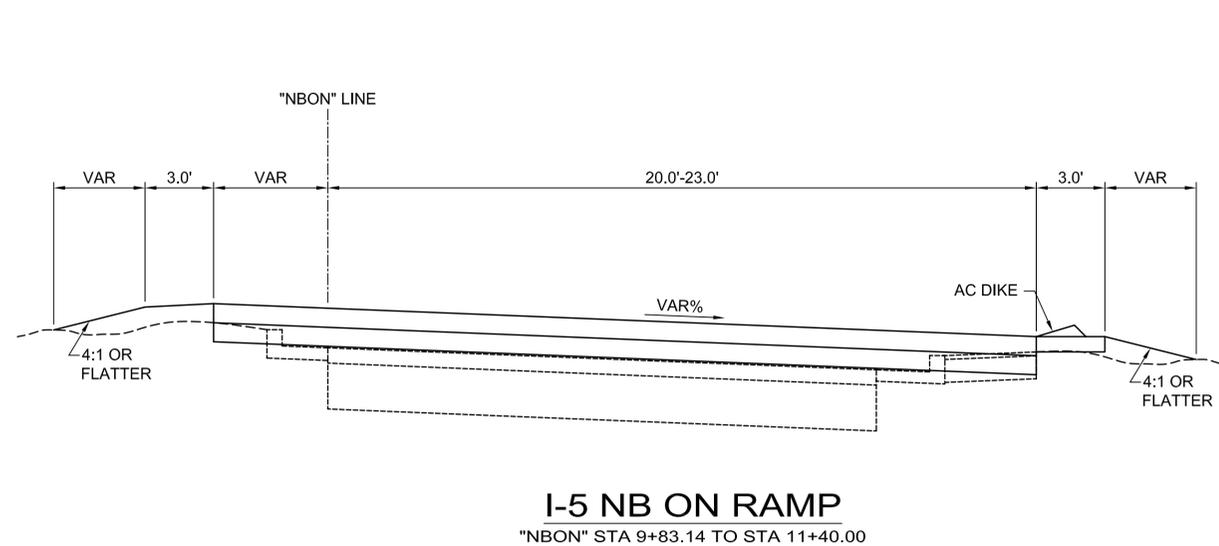
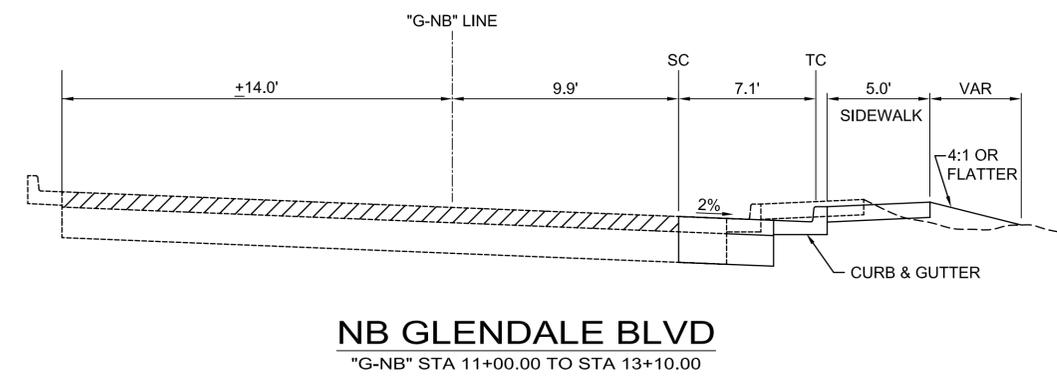
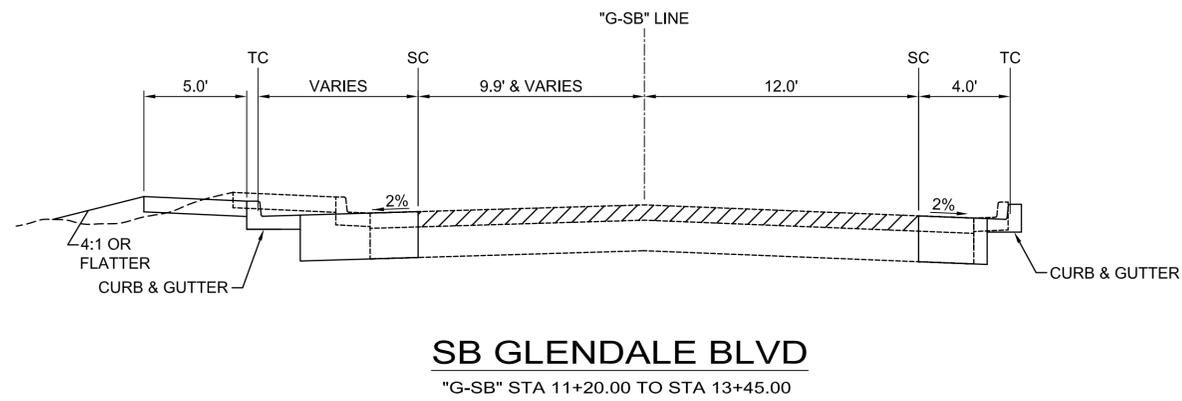
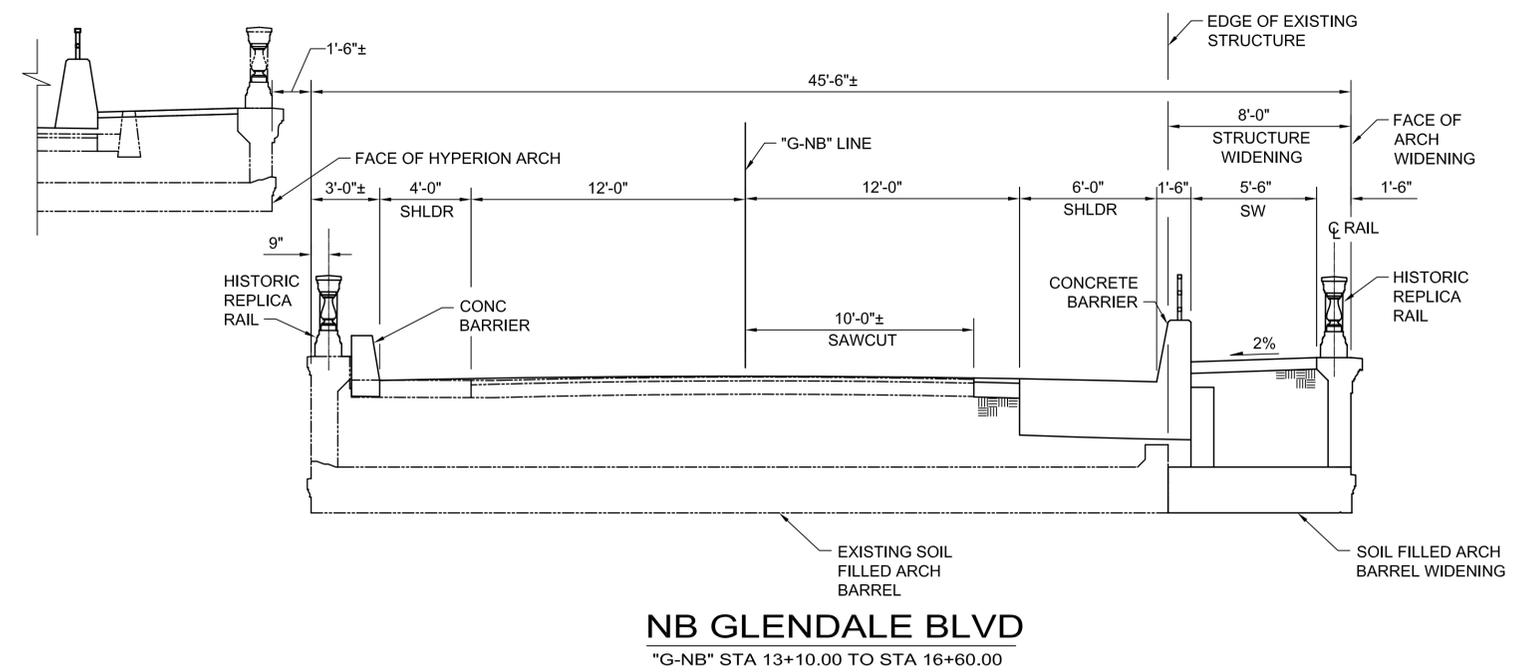
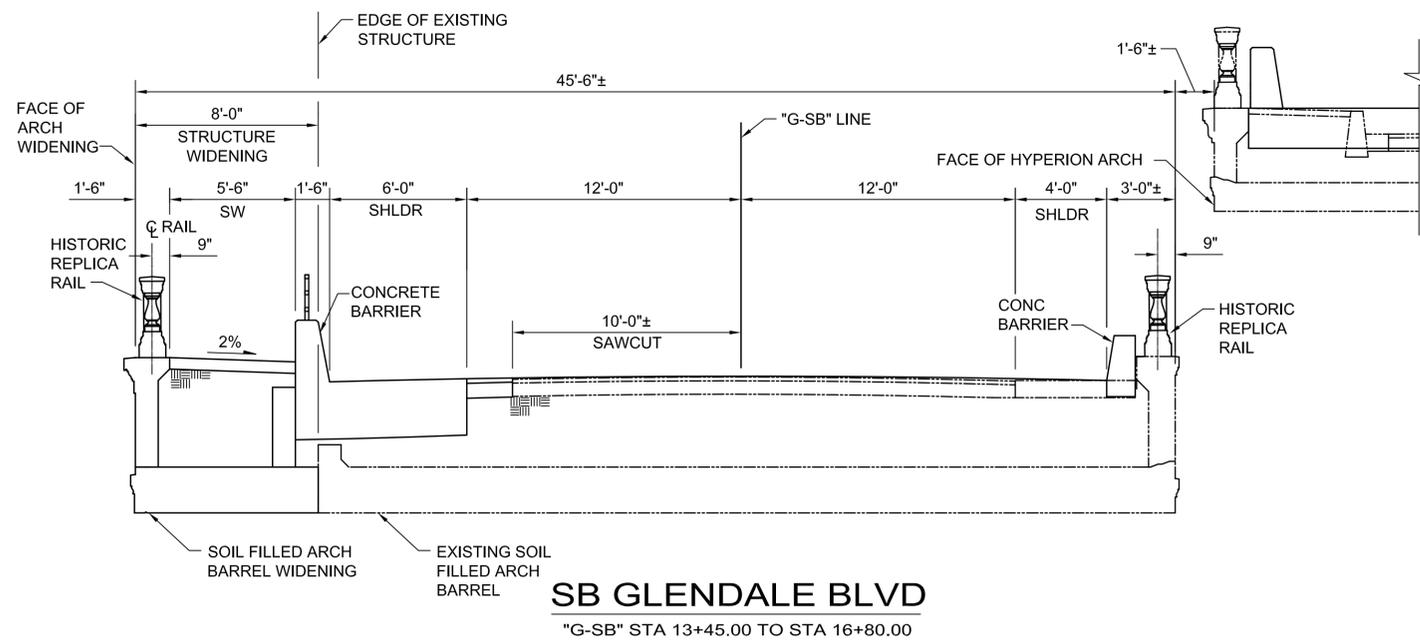


FIGURE 1-5
GLENDALE BOULEVARD CROSS SECTIONS
GLENDALE - HYPERION STRUCTURES
(53C-1881, 53C-1883, AND 53C-1884)
REHABILITATION AND SEISMIC
RETROFIT DESIGN



Photograph 5: Southbound Glendale Boulevard over the Los Angeles River

I-5 On-Ramp Modifications. The existing northbound on-ramp approach to the I-5 from southbound Glendale Boulevard would be slightly realigned southward (see Figure 1-3B) to correspond with the traffic lane restriping along the widened southbound Glendale Boulevard bridge (over the Los Angeles River). Photograph 6 below shows the existing on-ramp.

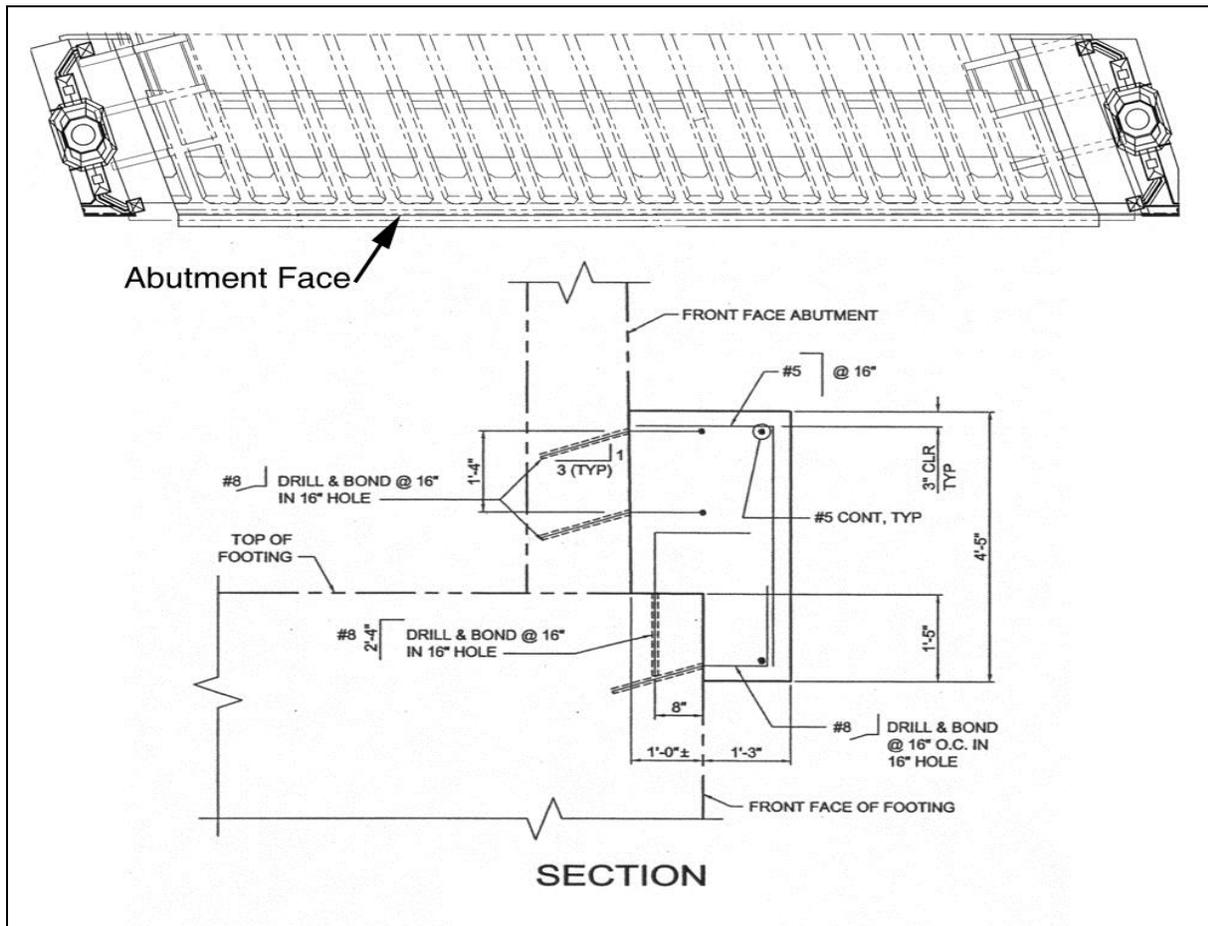


Photograph 6: Southbound Glendale Boulevard at the turn-around (left) and Northbound I-5 on-ramp

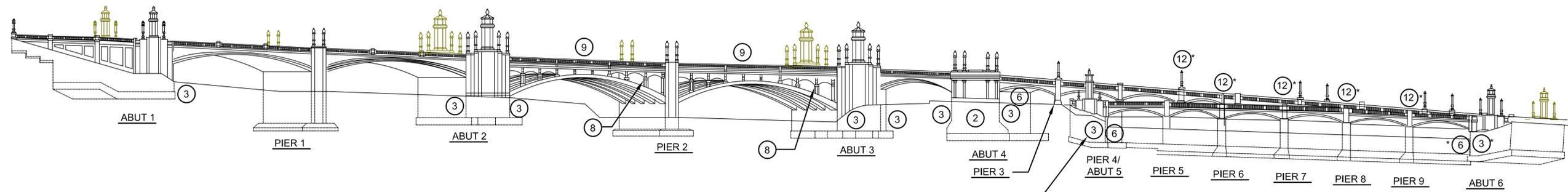
1.3.1.5 Seismic Improvements

Seismic improvements would primarily involve strengthening improvements to the substructure elements of the viaduct complex. Four categories of seismic retrofits would occur, and are described below. Figure 1-6 illustrates the overall proposed seismic retrofit plan that shows the location and type of seismic retrofit along the viaduct complex.

Abutment Transverse Wall Shear Friction Retrofit. This work would involve the addition of concrete bolsters between the abutment walls and abutment footing, which is below ground. This retrofit would require excavation along one side of each abutment to provide access to the footing. The bolster would then be installed along the base of the abutment and footing to strengthen the connection. Inset 2 shows typical details for this work and illustrates the strengthened wall-footing connection. Once the concrete bolsters are constructed, the excavation would be filled and the retrofit would be entirely buried.



Inset 2: Abutment Transverse Wall Retrofit Details



DEVELOPED ELEVATION

1" = 75'

NOTE: DETAILS ELIMINATED BY CATRANS ARE NOT SHOWN.

SEISMIC RETROFIT LEGEND

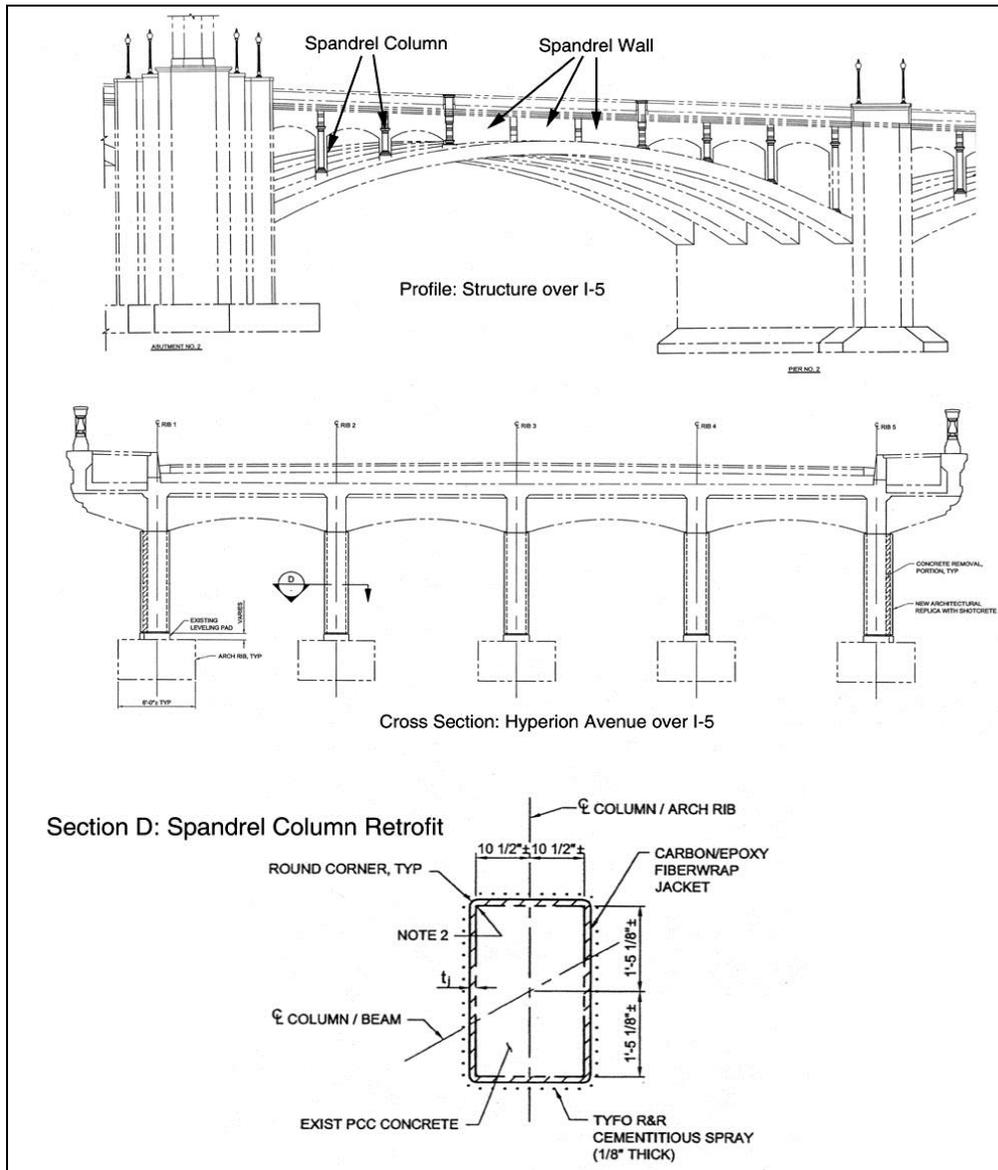
- ② BUTTRESS WALL STRENGTHENING
- ③ ABUTMENT TRANSVERSE WALL SHEAR FRICTION RETROFIT
- ⑥ ARCH SHEAR RETROFIT AND DUCTILITY RETROFIT
- ⑧ SPANDREL COLUMN DUCTILITY RETROFIT
- ⑨ INTERIOR SPANDREL WALL STRENGTHENING
- ⑫ PIER WALL CHANNEL LINING RETROFIT

NOTE:
FOR RETROFIT DETAILS, SEE "RETROFIT DETAILS" SHEETS; LEGEND
NUMBERS CORRESPOND TO RETROFIT DETAIL NUMBERS.

**FIGURE 1-6
PROJECT SEISMIC RETROFIT PLAN**

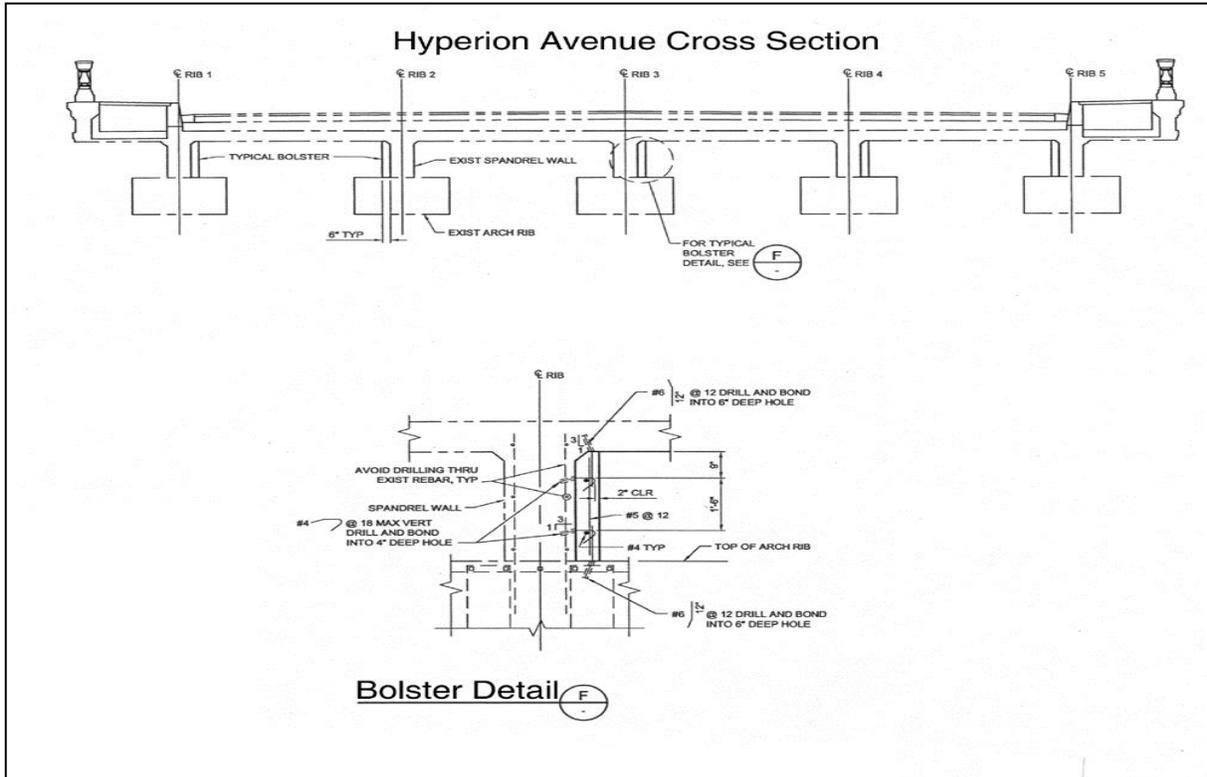
**GLENDALE - HYPERION STRUCTURES
(53C-1881, 53C-1883, AND 53C-1884)
REHABILITATION AND SEISMIC
RETROFIT DESIGN**

Spandrel Column Ductility Retrofit. The section of the viaduct complex over I-5 is supported by two arched spans with an open spandrel design (see Figure 1-6). The deck above is supported by both spandrel columns and spandrel walls. Seismic strengthening of the spandrel columns would involve wrapping the existing spandrel columns with a carbon-epoxy fiber wrap. Once the columns have been wrapped, a layer of concrete, similar in texture and color, would be applied. Inset 3 shows typical details for this work.



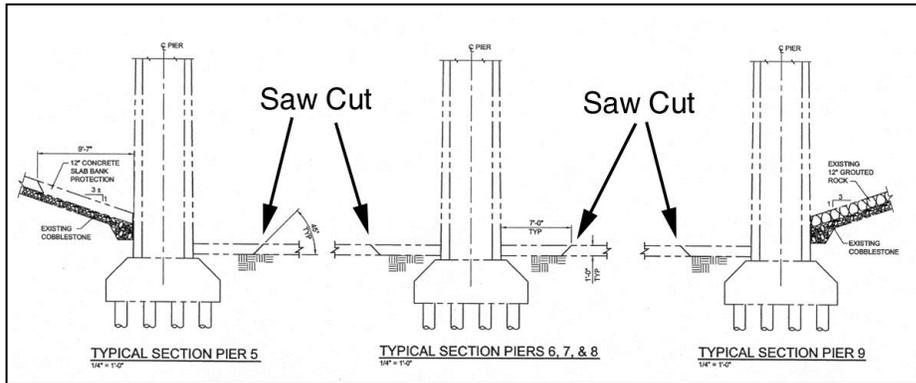
Inset 3: Spandrel Column Ductility Retrofit Details

Interior Spandrel Wall Strengthening. For the two arched spans over I-5, spandrel walls instead of columns are used to support the deck (above the arches). The seismic retrofit of the spandrel walls would involve the addition of concrete bolsters along one side of each spandrel wall (between the top of the arch and the deck) to increase the strength of the deck-arch connection. The bolsters would be constructed only on the interior faces of the walls so they would be mostly hidden from view. Inset 4 shows typical details for this work.



Inset 4: Spandrel Wall Retrofit (Bolster) Details

Pier Wall Channel Lining Retrofit. This work would involve cutting the existing channel lining so that the piers would be free to move during an earthquake, which would prevent damage to the base of the piers. An inclined saw cut would be placed parallel to the pier wall so that when the pier wall moves back and forth the channel lining would not restrict the movement. Inset 5 shows typical details for this work.



Inset 5: Pier Wall Channel Lining Retrofit

Section 1.3.1.6 [DELETED]

1.3.1.7 I-5 Off-Ramp Reconfiguration

The existing I-5 northbound off-ramp to Glendale Boulevard would be realigned southward to connect with northbound Glendale Boulevard south of its current terminus (see Figure 1-3B). This realignment would improve the sight distance and operational safety issues faced by motorists exiting northbound I-5 at this location. In addition, the realigned off-ramp would be signalized and permit exiting northbound motorists to make left turns directly onto southbound Glendale Boulevard, eliminating the need to first travel north to execute U-turns at Glenfeliz Boulevard. The exact signal configuration has not been determined but would be designed and implemented in accordance with City and Caltrans requirements. After the ramp reconfiguration, the former ramp area would be landscaped. The signalized intersection would also provide a controlled pedestrian crossing across Glendale Boulevard, which would facilitate pedestrian access to Hyperion Avenue via the staircase (Photograph 7) from Glendale Boulevard (along the west side of the viaduct complex).



Photograph 7: Staircase from Glendale Boulevard Along West Side of Viaduct complex

1.3.1.8 Infiltration/Detention Basin

A detention/infiltration basin will be constructed just northwest of the viaduct complex as a permanent water quality best management practice (BMP) for purposes of controlling runoff from the viaduct complex. This area is currently part of the Caltrans I-5 Right-of-Way. Under agreement with Caltrans, the Contractor will utilize this area as a staging area prior to construction of the permanent basin. Hyperion Avenue storm water and a portion of the Glendale Boulevard (northbound and southbound) storm water in the vicinity of the basin will be directed into the basin in order to detain, infiltrate and treat a portion of it. The basin would provide detention and infiltration as a pre-treatment of stormwater prior to river discharge. It would be provided with metered drainage to prevent insect vector issues as well as provide for emergency overflow into the river as protection for adjacent transportation. This BMP will meet the City goals of not increasing net discharge and provide for improved treatment associated with the first flush of storm water. Several trees would be removed to construct the basin, and new trees and ground cover would be planted after contractor demobilization.

The basin will also be integrated into the proposed Sunnynook Park,³ which is scheduled for construction in 2012 west of Glendale Boulevard, east of I-5, west of the Los Angeles River and south of the Sunnynook Pedestrian Bridge upstream of the project site. A perimeter path leads up to the basin, which has been shown as part of the Sunnynook Park project.

³ The Sunnynook River Park is a separate proposed project located in the vicinity of the proposed project. Refer to Table 1-4: Related Projects, for more information.

1.3.1.9 Project Construction

Project construction is expected to start in the summer of 2014 or later and occur over 2.5 years. Project components would be constructed in a phased manner that would maintain vehicular traffic and access on Hyperion Avenue and Glendale Boulevard (northbound and southbound) at all times (CLA, 2007b). The contractor would utilize staging areas to store equipment and supplies either within the construction work zone or at a nearby area such as the Caltrans right-of-way between I-5 and the Los Angeles River just northwest of the viaduct complex. Towards the end of construction, when that area is no longer required as a staging area, it would be excavated and the detention/infiltration basin, as described in Section 1.3.1.8, would be installed.

The contractor would be required to comply with all applicable rules, regulations, and standard specifications. Imported fill would not be required. In addition, construction would occur with an exemption from the Bureau's Special Order #01-0406 for implementing the Mayor's Executive Directive No. 2 (BOE, 2006) that sets requirements for rush hour construction on City streets. Further information on this directive is provided in Section 2.4.3.

In addition to the overall construction descriptions below, further construction phasing details are provided in the discussion of temporary traffic effects in Section 2.4.3.

Construction along Hyperion Avenue

Prior to construction and demolition work along the Hyperion Avenue structures, protective barriers would be constructed along the exterior of the viaduct complex to contain any debris, tools, or other materials that could fall on sidewalks, roadways, the river, or other property below. The protective barriers would be constructed of timber and plywood (similar to falsework), or other equally effective material. The protective barriers could require placement at night for up to two days at each location to minimize disruptions along thoroughfares such as Riverside Drive and I-5. Once the protective barriers are in place, construction of the improvements would begin.

While the railing replacement and the sidewalk work are occurring along Hyperion Avenue, temporary pedestrian detours around work zones would be established. In addition, a center work zone would be phased for median construction in Hyperion Avenue. At least one travel lane in each direction would be maintained at all times. K-rails would be utilized to protect the temporary pedestrian walkways and work zones from traffic.

Construction along the Glendale Boulevard Bridges

Prior to construction and demolition work along the Glendale Boulevard bridges, protective barriers would be constructed along the bridge exteriors to contain any debris, tools, or other materials that could fall into the river below or into the work zone established in the river channel.

During widening of the northbound and southbound Glendale Boulevard bridges, one of the two travel lanes on each structure would be converted to work zones, which would be physically separated from the remaining travel lane (most likely with K-rails). At least one travel lane along each bridge would be maintained at all times. Pedestrian access along both bridges during construction would likely have to be temporarily prohibited, and detoured around the work area.

During pier and abutment construction, a work zone would also be established in the river in the immediate area of the piers or abutments. This section of the river bottom is concrete-covered, and the work area would be confined to the concrete pad so as to not physically disturb the

unlined portions of the river upstream or downstream of the viaduct complex. Flow within the river would be diverted around the work area. Piles would be installed by augering holes, inserting support sleeves and/or reinforcing cages, and filling the drilled holes with concrete. Appropriate BMPs would be utilized. The bridge work would require intermittent closure of the existing bikeway underneath the bridge for the safety of bicyclists.

Construction of the Northbound I-5 Off-Ramp Realignment

The reconfiguration of the northbound I-5 off-ramp at Glendale Boulevard would be prioritized to occur in the first phase to allow left-turns to southbound Glendale Boulevard, which would minimize vehicular travel on Glendale Boulevard during construction of the other project components.

During construction of the realigned northbound I-5 off-ramp approach to northbound Glendale Boulevard, the existing off-ramp would be kept operational. The realigned portion of the off-ramp would first be constructed and then connected to the freeway exit during off-peak hours. A short-term overnight ramp closure may be required during the actual connection process. Realignment of the I-5 off-ramp would be phased with widening of the northbound Glendale Boulevard Bridge. Following the off-ramp realignment, the former off-ramp would be removed. A new access to the Los Angeles River bike path from northbound Glendale Boulevard would also be constructed and the area would be landscaped.

Construction of Seismic Retrofits

Seismic retrofit work involving the bridge abutments, columns, and piers would also be accomplished in a staged manner within established work zones to ensure that vehicular traffic (i.e. along Riverside Drive and I-5), pedestrian traffic, and bikeway traffic (along the Los Angeles River) would be safely maintained.

1.3.1.10 Pedestrian Overcrossing across the Los Angeles River

In the interest of reducing construction duration to minimize impacts and due to width restrictions during the widening construction phase, it is anticipated that both the NB and SB Glendale Boulevard bridges would be widened in a single phase. To provide adequate construction area for the contractor to perform the widening, pedestrian traffic would be excluded from both sides of both bridges. As a mitigation measure for this impact upon pedestrian transportation, the City would construct an alternate pedestrian crossing over the Los Angeles River across the existing Red Car piers (downstream of the viaduct complex) to connect the bike path along the southwest side of the Los Angeles River with Glendale Boulevard on the southeast side of the river. The pedestrian crossing, in conjunction with the new access to the Los Angeles River bikeway from northbound Glendale Boulevard, would provide a detour route around the Glendale Boulevard bridges during construction. In order for this measure to serve as an effective detour for pedestrians, the pedestrian crossing and the new access to the bike path would have to be fully constructed and operational before commencing the widening of the Glendale Boulevard bridges.

The Atwater Village and Silver Lake neighborhood councils have requested a pedestrian crossing over the Los Angeles River at this location during meetings and hearings on this Project. This crossing would provide an alternate, motorized-vehicle free access to the River, and encourage people from the residential community on the northeast side of the River to come to

the existing bike path on the west bank and to the new Sunnynook River Park. It would also encourage environmental education of the public by bringing non-motorized users to the river resources.

As a result, the City has committed to an upgrade from a temporary pedestrian bridge, as required for construction mitigation, to a permanent pedestrian facility, including meeting City lighting criteria. A pedestrian path would be installed to join the northeast touchdown of the crossing and the northbound Glendale Boulevard sidewalk.

1.3.2 No Build Alternative

Under the No Build Alternative, no improvements to the viaduct complex would be undertaken, including seismic retrofit/rehabilitation. The existing viaduct complex would remain seismically deficient and remain vulnerable to earthquake-induced forces, deformations, and possible failures. In the event of an earthquake, the existing structures would continue to pose a level of hazard to the public using the viaduct complex that is greater than would be the case for a structure rehabilitated to current seismic performance standards. The No Build Alternative would not meet the project purpose and need, as discussed in Section 1.2. Although the No Build Alternative would not meet the project objectives, it is being evaluated in this joint environmental document because it is required under CEQA and NEPA. Under CEQA, the No Build Alternative is equivalent to the No Project Alternative. Under NEPA, the No Build Alternative reflects the No Federal Action alternative.

1.3.3 Alternatives Considered but Eliminated from Further Discussion

In addition to the project alternatives described above, other alternatives were considered and withdrawn from further consideration because they would:

- Fail to meet the project's purpose and need objectives.
- Result in greater environmental impacts than the proposed project.
- Fail to avoid or substantially lessen the significant impacts of the proposed project.

These alternatives are summarized in Table 1-2, Summary and Comparison of Alternatives. These other alternatives were withdrawn from further consideration. Table 1-2 also includes the Build Alternatives and the No Build Alternative for comparison purposes.

Table 1-2: Summary and Comparison of Alternatives

Alternative	Meets Purpose and Need?	Impacts?	Advantages and Disadvantages	Cost?	Carried Forward?
Proposed Action	Yes	Low	Would remove the viaduct complex from the EBL, would provide seismic upgrades, would improve pedestrian safety, improve I-5 off-ramp, would improve bike path access, and would provide restoration of historic features.	High	Yes
Build Alternative 1: Seismic Retrofit Only	Partially	Low	Would provide seismic upgrades but would not improve roadway deficiencies, remove the viaduct complex from the EBL, or provide restoration of historic features.	Low	No
Build Alternative 2: Widen Hyperion by 44 feet & Glendale Bl. Bridges by 24 feet	Yes	Very High	Would widen bridge to meet current standards, but cause major community and traffic disruptions. Would require moderate right-of-way acquisition and relocations. Would accommodate pedestrians along both sides of Hyperion Avenue. The Glendale bridges would also have sidewalks on both sides. The viaduct complex would likely lose historic status.	Very High	No
Build Alternative 3: Widen Hyperion by 24 feet & Glendale Bl. Bridges by 16 feet	Yes	High	Would widen bridge to meet current standards, but cause major community and traffic disruptions. Would require low-moderate right-of-way acquisition and relocations. Would accommodate pedestrians only on the west side of Hyperion. The viaduct complex would likely lose historic status.	High	No
Build Alternative 4: New Bridge at Existing Location	Yes	Very High	Would provide a new bridge that meets current standards, but cause major community and commuter disruptions and require some right-of-way acquisitions and relocations. Would remove Historic-Cultural Monument.	Very High	No
Build Alternative 5: New Bridge at an adjacent New Location	Yes	Very High	Would require extensive right-of-way acquisitions and relocations. Seismic and geometric deficiencies of existing viaduct complex would remain. Would not provide	Very High	No

Table 1-2: Summary and Comparison of Alternatives

Alternative	Meets Purpose and Need?	Impacts?	Advantages and Disadvantages	Cost?	Carried Forward?
No Build Alternative	No	Indirect	restoration of historic features. Would not address design or seismic deficiencies	None	Yes*
Transportation System Management and Transportation Demand Management Alternatives	No	Low	Would not address design or seismic deficiencies, and would not remove the viaduct complex from the EBL.	Low	No

* The No Build Alternative is being carried forward for further consideration as required by the California Environmental Quality Act (No Project alternative) and the National Environmental Policy Act (No Federal Action alternative).

1.3.3.1 Build Alternative 1 – Seismic Retrofit Only

Build Alternative 1 – Seismic Retrofit Only would sufficiently strengthen the existing viaduct complex to meet current seismic performance standards. This alternative would not remove the complex from the HBP EBL, but would only implement the seismic retrofit improvements previously described in Section 1.3.1.1.5 (the proposed project’s seismic improvements). Aside from seismic improvement, no other improvements would be provided. The seismically retrofitted bridge structures would retain their current geometric configuration.

The widening of the Glendale Boulevard bridges over the Los Angeles River, enhanced pedestrian and traffic safety improvements, replacement replica balustrades, and new access to the Los Angeles River bike path from northbound Glendale Boulevard would not be implemented. Under this alternative, existing covered rails and other altered architectural design features would not be restored. Moreover, existing traffic hazards to pedestrians that walk along the 2-foot curbs adjacent to the retaining walls near Waverly Drive (along Hyperion Avenue) would remain.

Build Alternative 1 would not meet the project goal of removing the viaduct complex from the EBL under the HBP, but would bring the viaduct complex up to current seismic standards. In addition, Build Alternative 1 would not include the reconfiguration of the northbound I-5 off-ramp to Glendale Boulevard and would not improve the operational efficiency of the viaduct complex.

Construction would require approximately one-year. The total cost for Build Alternative 1 is estimated to be approximately \$5.5 million. The funding source for Build Alternative 1 would be State Seismic Retrofit funds.

1.3.3.2 Build Alternative 2 – Viaduct Widening by 44 Feet

Build Alternative 2 – Viaduct Widening by 44 Feet would widen the viaduct structures along Hyperion Avenue by 44 feet and the Glendale Boulevard bridges by 24 feet. This alternative would add four lanes to Hyperion Avenue (two lanes in each direction) and one additional lane each along the southbound Glendale Boulevard Bridge (over the Los Angeles River) and the northbound Glendale Boulevard Bridge.

Build Alternative 2 would require the acquisition of right-of-way on either side of the existing viaduct complex, including a strip of the greenscape to the east of the viaduct complex's northern end, which is now designated as Red Car River Park. In addition, this alternative would require the Waverly Diver Bridge to be removed and replaced with a wider bridge. This alternative would cost an estimated \$95 million dollars (2005 dollars) and require approximately four years for construction.

This alternative would also result in substantial loss of the viaduct complex's historic fabric.

As part of the public coordination process, Build Alternative 2 was presented to Atwater Village, Silver Lake, and other stakeholders in 2002, and the stakeholders expressed opposition to it. Due to the high level of potential impacts during construction, the extent of potential loss of historic fabric, the high cost, and lack of community support, Build Alternative 2 was withdrawn from further consideration as a viable project alternative.

1.3.3.3 Build Alternative 3 - Viaduct Widening by 24 Feet

Build Alternative 3 – Viaduct Widening by 24 Feet would widen the viaduct structures along Hyperion Avenue by 24 feet and the Glendale Boulevard bridges by 16 feet. This alternative would include full standard shoulders and full standard sidewalks on both sides, and full standard median in the center of the Hyperion Avenue structure. No lanes would be added as part of this alternative. Standard shoulders and sidewalk would also be added to both Glendale Boulevard Bridges.

Build Alternative 3 would also require the acquisition of right-of-way on either side of the existing viaduct complex, including the greenscape to the east of the viaduct complex, which was designated as Red Car River Park. This alternative would also require demolition and replacement of the Waverly Bridge structure with a wider structure. This alternative would cost an estimated \$60 million dollars (2005 dollars) and be constructed over approximately four years.

This alternative would also result in substantial loss of the viaduct complex's historic fabric.

As part of the public coordination process, Build Alternative 3 was presented to Atwater Village, Silver Lake, and other stakeholders in 2002, and, as with Build Alternative 2, the stakeholders were decisively opposed to it. Opponents cited the high level of potential impacts during construction, and the associated loss of historic fabric. In consideration of this proposal's high cost and lack of community support, Build Alternative 3 was eliminated from further consideration as a viable project alternative.

1.3.3.4 Build Alternative 4 – New Bridge at Existing Location

Build Alternative 4 – New Bridge at the Existing Location would require complete demolition of the existing viaduct complex and construction of an entirely a new bridge at the same location.

The new bridge provided by Build Alternative 4 would meet current standards for seismic performance and geometric design. Build Alternative 4 would result in construction-related impacts substantially greater than those of the other Build Alternatives because the viaduct complex is one of four key thoroughfares that cross the Los Angeles River in the extended project vicinity (the other three are Fletcher Drive, SR-2 or the Glendale Freeway, and Los Feliz Boulevard). This alternative would require the complete closure of the viaduct complex for an extended period of time, which would result in substantial impacts to commuters and the local circulation system during construction. In addition, this alternative would result in substantial economic impact to local businesses along Glendale Boulevard and Hyperion Avenue. Furthermore, Build Alternative 4 would result in the complete demolition of the historic viaduct complex, which is eligible for listing in the NRHP and is a City Historic-Cultural Monument.

The total cost for Build Alternative 4 is estimated to be in excess of \$140 million (2005 dollars).

Build Alternative 4 was withdrawn from further consideration because it would have the greatest adverse effect on the historic resource, resulting from the demolition of the entire viaduct complex, and because the costs and other environmental impacts for this alternative would be substantially greater than other build alternatives.

1.3.3.5 Build Alternative 5 – New Bridge at New Location

Build Alternative 5 – New Bridge at a New Location would provide a replacement bridge for the existing viaduct complex, on either side of the viaduct complex. The existing viaduct complex would remain in place and retain its historic fabric, but would not be seismically improved. Moreover, Build alternative 5 would not cure the design or seismic defects of the existing viaduct complex.

Build Alternative 5 was briefly considered but withdrawn from further consideration because it was not considered to be a prudent and feasible alternative. Moreover, this alternative would require extensive right-of-way acquisition and reconfiguration of the entire street system at both ends of the viaduct complex, because there are other more viable and realistic alternatives that could be implemented, because the existing seismic concerns with the existing viaduct complex would not be addressed, and because of the high the level of anticipated environmental impacts and cost.

1.3.3.6 Transportation Systems Management (TSM) and Transportation Demand Management (TDM) Alternative

Because the Project is intended to bring the existing viaduct complex into compliance with current design and seismic performance/safety standards, rather than increase the volumetric flow of traffic by capacity enhancement or operational efficiency, implementation of a TSM and TDM Alternative would not address the purpose and need of the proposed project. TSM and TDM are not considered viable because they cannot resolve the current physical design or geometric deficiencies and reduce the vulnerability of the viaduct complex in case of major earthquake events.

1.4 Permits and Approvals Needed

Table 1-3 below contains a list of agency approvals that will be required for the proposed project.

Table 1-3: List of Agency Approvals and Permits

Agency	Permit/Approval	Status
California Department of Transportation	Encroachment Permit for viaduct construction (seismic) over I-5, construction of BMP infiltration basin in I-5 Right-of-Way, new bike path access ramp utilizing existing northbound I-5 off-ramp and permit/design/construction approval for reconfiguration of the northbound I-5 off-ramp at Glendale Boulevard.	To be implemented during design and construction.
California Department of Fish and Game	Streambed Alteration Agreement	To be obtained prior to construction.
Los Angeles Regional Water Quality Control Board (LARWQCB)	Permit approval under the General Construction Activities Stormwater Permit. Clean Water Act water quality certification.	To be obtained prior to construction.
U.S. Army Corps of Engineers	Clean Water Act Permit for discharge of dredged or fill material, Permit to construct access ramp(s) in the Los Angeles River channel, Permit to construct pedestrian bridge over Los Angeles River, Approval of water diversion plan.	To be obtained prior to construction.
State Historic Preservation Officer/Advisory Council on Historic Preservation (SHPO/ACHP)	Concurrence with HPSR and Findings of Effect documents; Approval of the Memorandum of Agreement (MOA)	MOA to be submitted to SHPO prior to final IS/EA.
County of Los Angeles, Department of Public Works	Approval to enter and work in the Los Angeles River. Permit to construct pedestrian bridge over Los Angeles River and easement in the Flood Control District.	To be obtained prior to construction.
City of Los Angeles, Department of Transportation	Approval of work area traffic control plan (traffic management plan), lane closures, and establishment of traffic control and safety measures	To be established during project design or prior to construction, and implemented during construction.
City of Los Angeles, Bureau of Sanitation	Permit to discharge treated extracted groundwater to the sewer system.	To be implemented during construction, if necessary.
City of Los Angeles, Board of Public Works	Permit to perform work or affect a traffic lane closure during peak traffic hours, including possible exemption from related prohibitions (Mayor's Directive No. 2).	To be implemented prior to construction.
City of Los Angeles, Police Commission	Permit to perform limited night construction	To be obtained prior to construction.
City of Los Angeles, Department of Water and Power	Approval of temporary easement for off-ramp realignment construction	To be obtained prior to construction.

1.5 Related Projects

The City has identified several approved or proposed projects within the vicinity of the proposed project that could contribute to cumulative impacts. These projects are listed in Table 1-4. Other development projects are planned for the project area; however, these projects would occur on private parcels and would not physically affect the street system in the project vicinity. Traffic from the development projects is accounted for in the traffic growth factor used to project future traffic in the project area.

Table 1-4: Related Projects

Project & Location	Description	Project Status
Silver Lake Reservoir Complex Storage Replacement Project	The Silver Lake Reservoir Complex Storage Replacement Project would remove Silver Lake and Ivanhoe reservoirs from direct service to the LADWP water distribution system. Water storage currently provided by the Silver Lake Reservoir Complex (SLRC) would be replaced by a 110-million-gallon (MG) buried storage reservoir at the former Headworks Spreading Grounds (HWSG site). The new storage reservoir would be accompanied by water conveyance facilities and a 4-megawatt (MW) hydroelectric power generating facility at the HWSG site to capture energy from the water pressure coming into the reservoir. A regulating station at the SLRC and a new bypass pipeline around the reservoir complex would convey water delivery flow to existing service areas, and Silver Lake and Ivanhoe reservoirs would cease to be operated as drinking water storage facilities. The bypass pipeline is the portion of this project that would be located in the vicinity of the proposed project. The bypass pipeline will extend along West Silver Lake Drive from Armstrong to below the reservoir. It will be jacked from the following 3 pits: 1) Ivanhoe/Armstrong, 2) West Silver Lake near the curve, and 3) terminus at the south end of the SLRC. (R. Pendergrass, personal communication, March 22, 2007)	Construction of the Bypass pipeline is currently scheduled to start on 1/2012 and end by 11/29/2013.
Los Angeles River Revitalization Master Plan	The Los Angeles River Revitalization Master Plan is a 20-year blueprint for development and management of the Los Angeles River. Objectives of the plan include the establishment of environmentally sensitive urban design guidelines, land use guidelines, and development guidelines for the river zone that will create economic development opportunities to enhance and improve river-adjacent communities by providing open space, housing, retail spaces such as restaurants and cafes, educational facilities, and places for other public institutions.	The plan was adopted by City Council in 2007.
Sunnynook River Park	The Sunnynook River Park is a priority project of the Los Angeles River Revitalization Master Plan. It is a multi-benefit project that will create a greenway/infiltration park in a 5-acre area along the existing bike path on the west side of the Los Angeles River. The area will serve as a rest area for pedestrians and cyclists, be landscaped with native vegetation and include picnic areas, benches, educational signage and art.	Construction is scheduled to begin in May 2012 and will last 6 months.

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

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

- Sole Source Aquifers – No sole source aquifers are located in the project area.
- Coastal Zone – The project site is inland near the Los Angeles civic center, and is not located in an area covered by the California Coastal Zone Management Plan.
- Wild and Scenic Rivers – No wild or scenic rivers are located in the vicinity of the project site.
- Agricultural Wetlands – The project area does not contain agricultural fields or agricultural wetlands.
- Farmlands/Timberlands – The project site is in an urban area, and no farmland/agricultural or timberlands are on or adjacent to the project site.
- Parking – The project would not change the parking prohibition on the viaduct or adversely affect parking.
- Growth – The proposed project would not provide additional capacity, and consequently it would not generate increases in traffic or promote more intensive uses of land or growth in the project area.
- Geology/Soils – The project area was previously disturbed to construct the freeway, river channel and past facilities, such as the Red Car Line and the original Glendale Boulevard.
- Paleontology – Work associated with the proposed project would occur in an area previously disturbed for the building of complex components that is not known to contain paleontological materials.

The analysis in this environmental document assumes that, unless otherwise stated, the project will be designed, constructed, and operated following all applicable laws, regulations, ordinances, and formally adopted city standards (for example, *Los Angeles Municipal Code* and Bureau of Engineering *Standard Plans*) or Caltrans standards, as applicable. Also, this analysis assumes that construction will follow the uniform practices established by the Southern California Chapter of the American Public Works Association (for example, *Standard Specifications for Public Works Construction* and the *Work Area Traffic Control Handbook*) as specifically adapted by the City of Los Angeles (for example, City of Los Angeles Department of Public Works *Additions and Amendments to the Standard Specifications for Public Works Construction* [a/k/a “The Brown Book,” formerly Standard Plan S-610]), and applicable Caltrans construction requirements.

Human Environment

2.1 Land Use and Planning

This section addresses potential impacts to existing and planned land uses within the project area that could result from implementation of the proposed project alternatives.

2.1.1 Regulatory Setting

California state law (Government Code Section 65300) requires that each city prepare and adopt a comprehensive, long-term general plan for its development. It must contain seven elements: land use, circulation, housing, conservation, open space, noise, and safety.

The City's General Plan contains a Framework Element, which addresses each of the State-mandated requirements and establishes overall planning policies for a city. The General Plan also contains citywide elements for all of the required topics, except land use. Other optional citywide elements include such topics as Service Systems, Circulation, and Air Quality. The Land Use Element comprises 36 Community Plans, each of which contains the land use policies and standards for a geographically distinct area.

The Land Use Element has the broadest scope of the General Plan elements required by the State. Since it regulates how land is to be utilized, many of the issues and policies contained in other plan elements are affected and/or have an effect on this element. California law requires that the Transportation Element be correlated with the Land Use Element and zoning. A component of the City's Transportation Element, the 2010 Bicycle Plan, designates the City's bikeway system and introduces a comprehensive collection of programs and policies.

Government Code Section 65302(a) requires that land use elements designate the proposed general distribution and general location and extent of uses of the land for housing; business and industry; open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty; education; public buildings and grounds; solid and liquid waste disposal facilities; and other categories of public and private uses of land.

2.1.2 Affected Environment

2.1.2.1 Existing and Future Land Use

The immediate project area includes residential and commercial land uses in the vicinity of Hyperion Avenue, Glendale Boulevard, and Riverside Drive, as well as I-5 and the Los Angeles River. The southern portion of the project area includes the Silver Lake and Los Feliz communities, and the northern portion of the project area includes Atwater Village. The viaduct complex serves as a key connecting roadway between these communities and other outlying neighborhoods. Glendale Boulevard has historically served as the main thoroughfare between Los Angeles and Glendale. These areas are generally built out, but have opportunities for use intensification and revitalization. Communities along the Los Angeles River have been proposed for revitalization by providing open space, housing, retail spaces such as restaurants and cafes, educational facilities, and places for other public institutions.

Adjacent land use through the Hyperion Avenue segment of the project area is predominantly commercial interspersed with some residential uses; particularly along the southern portion of the viaduct complex. Residential land uses are present along Waverly Drive to the east and west of the viaduct complex, with some of the residences situated along the top of a bluff that

overlooks the viaduct complex. Residential uses are also present along the Hyperion Avenue frontage roads connecting Waverly Drive with Hyperion Avenue.

There are few land uses along Glendale Boulevard south of I-5 due to the unique configuration of the surrounding area and the confluence of the Los Angeles River, I-5, and the roadway system. The west side of Glendale Boulevard north of the Los Angeles River is predominantly lined with commercial uses, with residential uses (predominantly single family homes) behind the commercial uses. There are some single and multi-family residences located along the frontage road opposite the landscaped median separating northbound Glendale Boulevard traffic from two-directional traffic on the frontage road to the east side of the north end of the viaduct complex (between the Los Angeles River and Greenward Road).

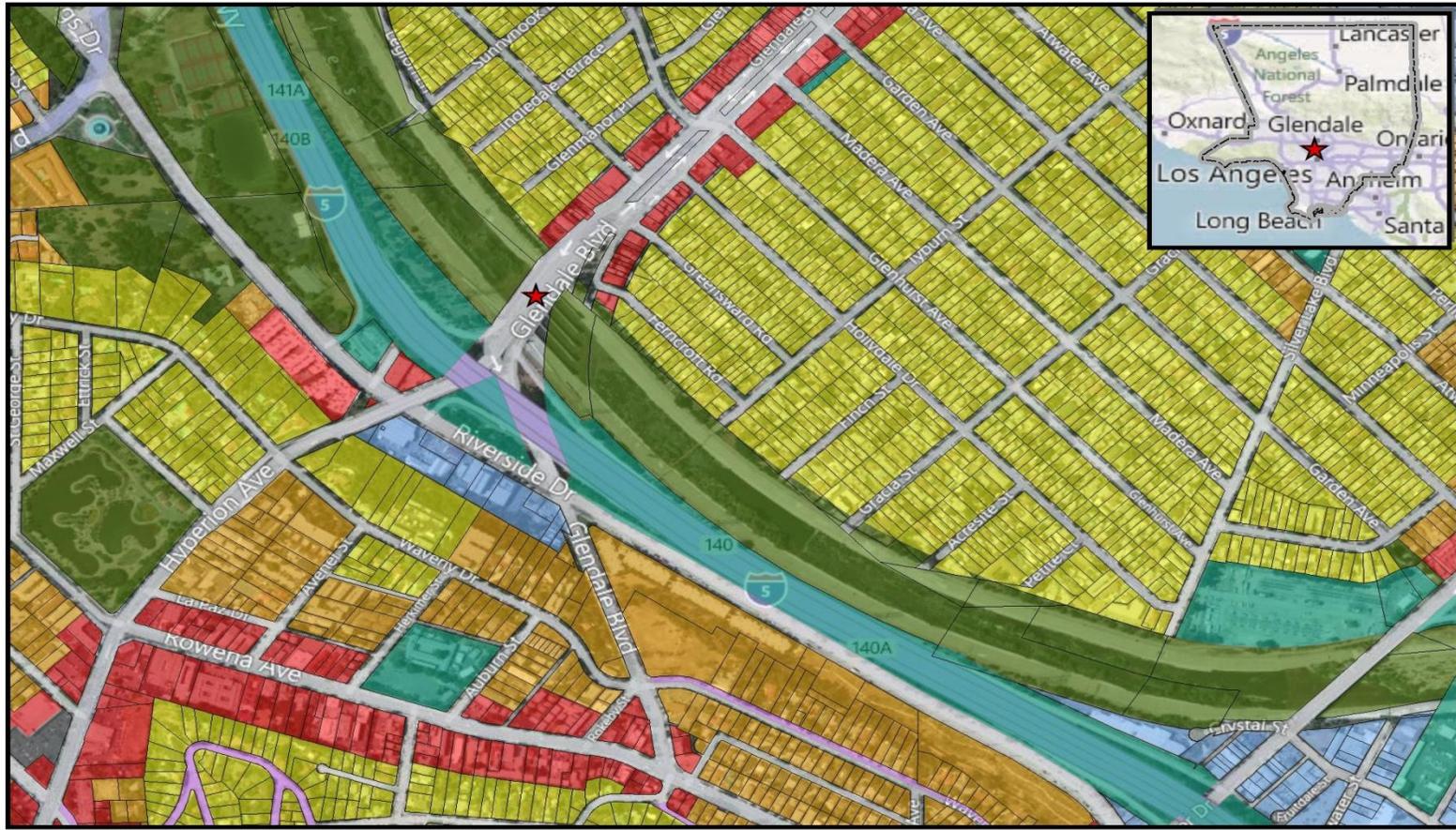
Riverside Drive crosses beneath the main viaduct complex (Hyperion Avenue) and is lined with commercial and industrial uses.

The bike path along the Los Angeles River forms an important commuter use in the project area. The bike path generally runs along the top of the river's southwest bank, but slants from the bank top, to go around an abutment, as it passes beneath the viaduct complex. This bike path is accessible via an access gate and ramp along southbound Glendale Boulevard near the northbound I-5 on-ramp.

The Northeast Los Angeles Community Plan identifies an equestrian trail along the east side of the Los Angeles River that extends from just north of Los Feliz Boulevard south to the confluence of the Arroyo Seco, where it extends north along the Arroyo Seco. In the project area, this designated equestrian trail has not yet been implemented, and the steep left bank of the river at the viaduct complex effectively prevents the use of the left bank of the Los Angeles River as an equestrian trail.

There are also several concurrent planning and development projects within the vicinity of the project area. These projects include the Los Angeles River Revitalization Master Plan, Silver Lake Reservoir Complex Storage Replacement Project, and Sunnynook River Park. Detailed discussion of these concurrent projects can be found in Table 1-4 Related Projects of Chapter 1. Other planned development projects would occur on private parcels and would not physically affect the street system of the project vicinity.

See Figure 2-1 for the existing zoning in the project area, and Figure 2-2 for a land use map.



Source: UltraSystems Environmental, Inc., 2011; Bing Maps, 2011; City of Los Angeles, 2011.

December 5, 2011

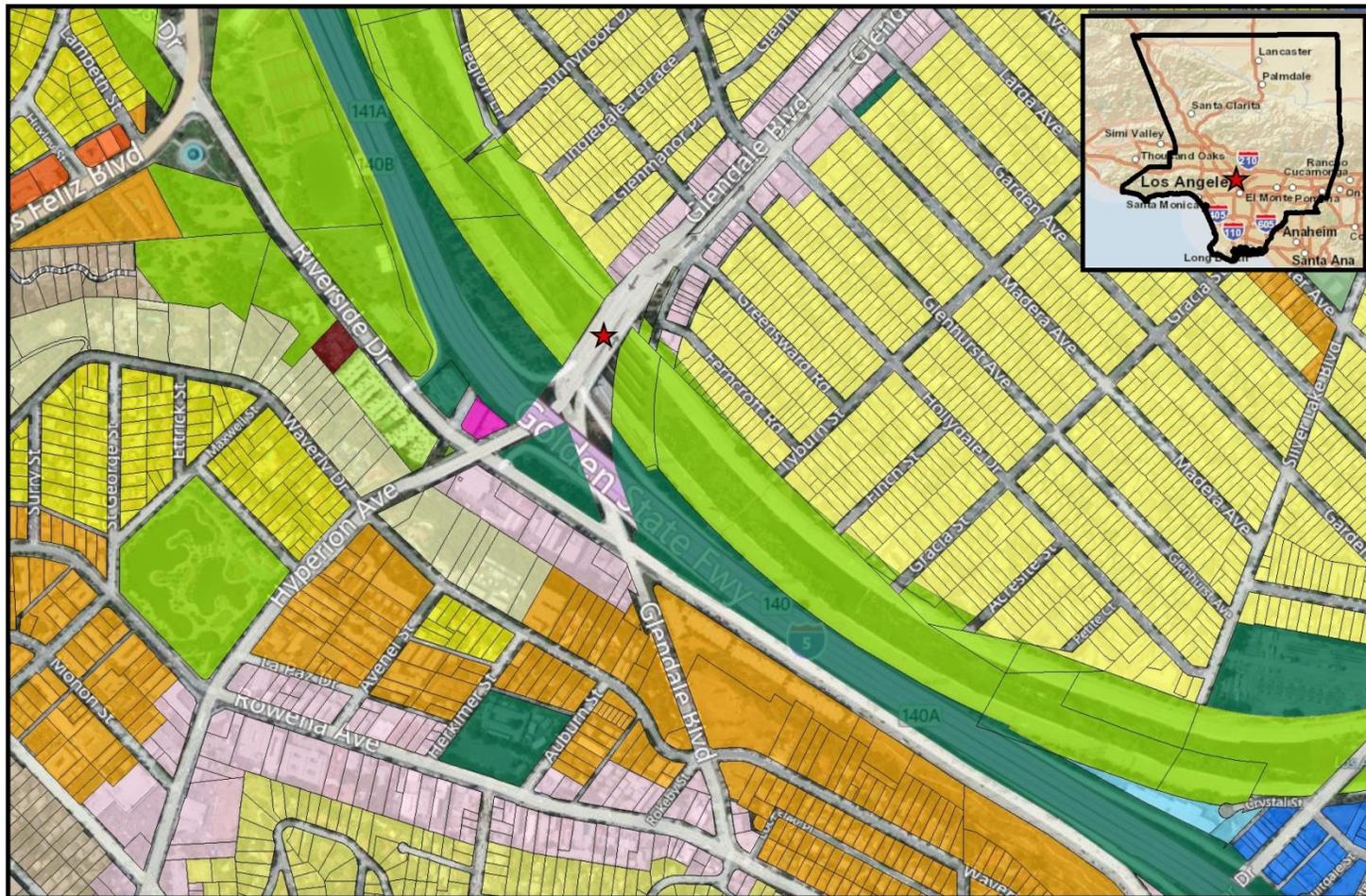
Scale: 1:7,200 or 1 inch = 600 feet
 0 300 600 Feet
 0 100 200 Meters

Legend					
	Project Location		CR, C1, C1.5, C2, C4, C5, CW, ADP, LASED, WC		PF
	Land Parcels		HILLSIDE		R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5
	CM, MR, CCS, M1, M2, LAX, M3, SL		RE, RS, R1, RU, RZ, RW1		P, PB
	CM, MR, CCS, M1, M2, LAX, M3, SL				Los Angeles County Boundary

Glendale-Hyperion Viaduct Complex
Local Zoning Map
 Map Depicting City of LA Zoning in the Project Vicinity

Figure 2-1: Zoning Designation of the Project Area

Source: ZIMAS, 2011



Source: UltraSystems Environmental, Inc., 2012; Bing Maps, 2011; City of Los Angeles, 2011.

March 5, 2012

Scale: 1:7,200 or 1 inch = 600 feet



Glendale-Hyperion Viaduct Complex
Local Land Use Map
 Map Depicting City of LA Land Uses in the Project Vicinity

Figure 2-2: Land Use Map

2.1.2.2 Consistency with State, Regional Local Plans and Programs

Transportation Element of the City of Los Angeles General Plan

Under the City's General Plan, Hyperion Avenue is designated as a secondary highway, and Glendale Boulevard as a Class II highway. The Element also designates Glendale Boulevard from the Los Angeles River north to the City of Glendale as a Scenic Highway. The proposed project will not affect these designations and is consistent with the Transportation Element.

Silver Lake-Echo Park-Elysian Valley Community Plan

The project site is located within the Silver Lake subarea of this community plan. The plan calls for improvement to pedestrian-oriented areas, which include the Los Angeles River channel, and enhance gateways to the community. The proposed project will not conflict with land use designations specified in the community plan. It will bring sidewalk improvements and pedestrian facility improvements as well as new balustrades that replicate the original balustrades to beautify the streetscape.

Hollywood Community Plan

The project is located in the southern part of the Hollywood Community Plan, which is currently in the process of being updated by the City of Los Angeles. The proposed project will improve traffic circulation and provide seismic upgrade, which is consistent with the Hollywood Community Plan.

Northeast Los Angeles Community Plan

The northern portion of the viaduct complex is located in the Northeast Los Angeles Community Plan area. The proposed project is consistent with this plan, which aims to coordinate development among various areas with compatible infrastructure and service levels. It encourages streetscape improvements and emphasizes that "bridges should be surveyed to determine where sidewalks are deficient to provide needed access and public safety."

Los Angeles River Revitalization Master Plan (LARRMP)

This plan (see Section 2.5.1.3 for more details) is a conceptual framework to guide the revival of the Los Angeles River corridor. The plan area spans all 32 miles of the Los Angeles River and stretches one-mile-wide to include the project site. The proposed project will complement this plan and improve connection between walkways and increase accessibility in the area. The Los Angeles River Revitalization Master Plan was adopted by the Los Angeles City Council in 2007.

2010 City of Los Angeles Bicycle Plan

The 2010 City of Los Angeles Bicycle Plan is a long-range planning tool to guide future development of bicycle facilities in the City to the year 2045. The plan envisions programming future facilities in five-year increments for environmental evaluation and funding. There are no existing bicycle facilities on Glendale Boulevard and Hyperion Avenue. According to the plan, as a transportation element, Hyperion Avenue is listed as a future bicycle lane (dedicated bicycle-only lane), and Glendale Boulevard is listed as a future bicycle route (in-road bicycle and vehicle shared roadway).

Adhering to the 2010 City of Los Angeles Bicycle Plan, the new shoulder on Glendale Boulevard could facilitate future development of a bicycle route. Though the proposed project

will not include a bicycle lane on Hyperion Avenue, the project is consistent with the plan because cyclists can use the shoulder.

Regional Transportation Plan (RTP)

The RTP, which is prepared by the Southern California Association of Governments (SCAG), is a long-range plan that identifies multi-modal regional transportation needs and investments over the next 25 years. It provides a vision for transportation investments throughout the region. Since the proposed project does not increase traffic capacity, and because it would be classified as an intersection signalization project, it is exempt from regional air emissions analysis. No additional travel lanes, or total vehicle miles traveled (VMT) would occur as a result of this project. More details about project conformity are discussed in Section 2.10.3.1.

2.1.3 Environmental Consequences

2.1.3.1 Temporary Impacts

Construction of the proposed project would occur within the existing right-of-way of the viaduct complex and Glendale Boulevard to the immediate northeast, including a narrow sliver of the landscaped median, which would be utilized to transition the widened bridge to the existing roadway. However, the majority of the landscaped median would remain unaffected during construction. Much of the seismic strengthening work would occur beneath the bridge and could be accomplished in phases. Some construction work would be staged to maintain the flow of vehicular, bicycle, and pedestrian traffic. Roadway construction along Riverside Drive, Glendale Boulevard, and Hyperion Avenue would require the temporary closure of one or more travel lanes; however, at least one lane in each direction would always be maintained, as would access to adjacent properties and land uses along Glendale Boulevard and Riverside Drive. Pedestrian access across the Glendale Boulevard Bridges over the Los Angeles River during construction would be prohibited, but access to nearby structures would not be prohibited. Because access to local streets would be maintained during construction, residential and commercial land uses would not be adversely affected.

The seismic upgrades to the viaduct complex would require work on Abutment No.1 and Abutment No. 2. Abutment No. 1 is located approximately 150 feet southwest of Riverside Drive, and Abutment No. 2 is located adjacent to the northeast side of Riverside Drive. The area beneath the viaduct complex next to Abutment No. 1 is owned by City, but is currently being used as automobile storage by Classic Collision Center, which is located at 3020 Riverside Drive. This area is being used under the terms of a revocable permit issued by the City of Los Angeles to the business. Similarly, the area under the viaduct complex adjacent to Abutment No. 2 is being used by L & R Construction (3061 Riverside Drive) under the terms of a revocable permit. The purpose of the revocable permit (“R” Permit) under LAMC 62.118.2 is to grant conditional encroachment of the public right-of-way by private parties normally not authorized to occupy it.

During the seismic upgrades, the abutment work would occur from the area beneath the viaduct complex, which would require the temporary suspension of the revocable permit to these two businesses. The revocable permits may be revoked by the City with advance notice for any reason. The revocable permit is not a lease and would be terminated 30 days from date of notice to vacate. The City would have full control of both areas prior to construction. The permittees will be compensated with the relocation assistance if allowed by the Uniform Relocation Act.

2.1.3.2 Permanent Impacts

Land use impacts are effects that would conflict with General Plan (Community Plan) land use designations or zoning, conflict with environmental plans and policies, or physically divide a community or neighborhood.

The proposed project includes seismic and other improvements to the existing viaduct complex, including widening both the northbound and southbound Glendale Boulevard bridges (over the Los Angeles River) by approximately eight feet. The improvements along the Hyperion Avenue portion of the viaduct complex include seismic upgrades, new balustrades that replicate the original balustrades, sidewalk improvements, and pedestrian facility improvements. These improvements would not conflict with existing land use designations or the zoning designations of parcels in the project area. The widening of the Glendale Boulevard bridges over the Los Angeles River would occur within the public right-of-way and would not affect the land use designations for the surrounding area.

The realigned off-ramp from northbound I-5 to Glendale Boulevard would use existing public right-of-way and would not affect zoning or designated land uses. As part of this ramp reconfiguration, a small open-space area would be created adjacent to the new access ramp to the Los Angeles River bike path from northbound Glendale Boulevard (see Figure 1-3B). This open space area would be landscaped as part of the proposed project and could be used for other beneficial uses in the future.

The proposed project would not affect the Community Plan designation of the east bank of the Los Angeles River as a future equestrian trail because it would not change or block access along the top of the bank.

Because the proposed project would occur within existing right-of-way, it would not result in changes to adjacent land uses. The proposed project represents improvements to the existing viaduct complex and would not physically divide an established community or conflict with any land use plan, redevelopment plan, policy, or regulation. Because the proposed project would not provide additional capacity, it would not generate increases in traffic or promote more intensive uses of land in the project area.

2.1.3.3 Cumulative Impacts

The proposed project does not require significant additional right-of-way or change in existing adjacent land use. Therefore, the proposed project is not anticipated to result in adverse impacts to existing land uses, land use patterns, from land use plan conflicts in the project vicinity. As such, the proposed project is not expected to contribute to cumulative impacts to land use.

2.1.3.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance or mitigation measures are required or proposed.

2.1.4 No Build Alternative Impacts

The No Build Alternative would not result in improvements to the viaduct complex, and therefore would not result in impacts to land use.

2.1.5 Parks and Recreational Facilities

2.1.5.1 Affected Environment

Griffith Park

Griffith Park is the only official park and recreational facility located within 0.5 mile of the project site. It encompasses 4,210 acres, and is situated just west of the Golden State Freeway (I-5), roughly between Los Feliz Boulevard on the south and the Ventura Freeway (SR 134) on the north. Griffith Park provides recreational opportunities and activities throughout the park. Griffith Park is a Section 4(f) resource not affected by the project, and is discussed in Appendix B2: Resources Evaluated Relative to the Requirements of Section 4(f).

Red Car River Park

Immediately north of the Glendale Boulevard northbound bridge is a triangular-shaped, landscaped median separating the northbound lanes from the two-directional frontage road within the Glendale Boulevard right-of-way. A community group, the “Friends of Atwater Village,” has unofficially designated this median “Red Car River Park.” It is not an actual park, and is maintained, as are all other landscaped medians in street rights-of-way, by the City’s Bureau of Street Services. Since this area is within the Glendale Boulevard right-of-way, Section 4(f) does not apply. The area is discussed in Appendix B2: Resources Evaluated Relative to the Requirements of Section 4(f).

Sunnynook River Park

An undeveloped Caltrans parcel, located west of the viaduct complex and east of I-5, is the site of the proposed “Sunnynook River Park.” Under Section 104.15 of the Streets and Highways Code, Caltrans is authorized to lease land to local agencies for park purposes. Pursuant to the lease agreement, the City of Los Angeles and Caltrans entered into 30-year agreement to maintain the land with certain conditions in place. One of these conditions stipulates that if Caltrans should need to acquire the land back for highway purposes the lease would terminate upon a three-month notice.

Los Angeles River Bike Path

The bike path along the Los Angeles River forms an important recreational and commuter use in the project area. The bike path generally runs along the top of the river’s southwest bank, but slants from the bank top, to go around an abutment, as it passes beneath the viaduct complex. This bike path is accessible via an access gate and ramp along southbound Glendale Boulevard near the northbound I-5 on-ramp.

The Los Angeles River Revitalization Master Plan area comprises the 32 miles of the River within the City of Los Angeles that extends from Owensmouth Avenue, in the upper reaches of the northwest San Fernando Valley, to the border of the City of Vernon, at the southern end of downtown Los Angeles. The Plan proposes to consider a range of activities to restore riparian and aquatic habitat, and related habitat functions, in and adjacent to the Los Angeles River. Compatible activities to conserve cultural resources, and to provide recreational, open space, and interpretive amenities, will also be considered. In addition, redevelopment would be encouraged to bring economic and residential vitality along the river banks and utilization of the river as a natural scenic feature. Recreational features such as additional green space and a continuous trail along the river are features of the project. In 2007 The LA City Council adopted the Los

Angeles River Revitalization Master Plan. In 2012 the U.S. Department of the Interior prioritized the Los Angeles River Trail System in the President's America's Great Outdoors Initiative.

Equestrian Trail

The equestrian trail, located within the City of Los Angeles right-of-way, is located along the top of the left (north) bank of the Los Angeles River, and ends at the Glendale Boulevard Bridges. It is identified in the Citywide Major Equestrian and Hiking Trails Plan. The segment of the equestrian trail within the project area is undeveloped and not implemented. As specified in the Northeast Los Angeles Community Plan, the equestrian trail is proposed for future completion and connection to trails to serve recreational needs and improve accessibility to other open space resources.

2.1.5.2 Environmental Consequences

The project would not change or alter the use of, and does not have the potential to affect Griffith Park. Additionally, since Sunnynook Park is within Caltrans right-of-way, it does not qualify as a 4(f) resource, as discussed in Appendix B2: Resources Evaluated Relative to the Requirements of Section 4(f).

The proposed project would result in a temporary occupancy of the bike path, and would not alter the alignment or impair the continuity or use of the bike path. The bike path would temporarily be rerouted, utilizing existing roadways, for a short duration during construction. The bike path would be restored to its original condition following construction.

As described in Appendix B2, the equestrian trail is a Section 4(f) resource, but the project would not result in a use of the resource. The project would not alter the alignment of the equestrian trail, and would not interfere with the City's plan to develop the equestrian trail in the future.

Therefore, there would be no impacts to parks and recreational facilities with implementation of the proposed project, or the no-build alternative.

2.1.5.3 Avoidance, Minimization, and/or Mitigation Measures

Because impacts are not anticipated, avoidance or mitigation measures are neither required nor proposed.

2.2 Community Impacts and Environmental Justice

This section discusses community cohesion, relocations, and environmental justice impacts that could result from the proposed project or alternatives.

2.2.1 Community Character and Cohesion

2.2.1.1 Regulatory Setting

The National Environmental Policy Act of 1969, as amended (NEPA), established that the Federal Government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)]. The Federal Highway Administration in its implementation of NEPA [23 U.S.C. 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion and the availability of public facilities and services.

Under the California Environmental Quality Act (CEQA), an economic or social change is not to be considered a *significant* effect on the environment. However, if a social or economic change is caused by a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

2.2.1.2 Affected Environment

The proposed project would include modifications to an existing structure along its existing alignment and would not involve acquisition of new right-of-way. The northern portion of the viaduct complex is in the Northeast Los Angeles Community Plan area while the southern portion is in the Hollywood Community Plan area. The project area and its vicinity are developed with a mix of residential, commercial, and industrial uses. The two primary neighborhoods are Silver Lake and Atwater Village. The Silver Lake neighborhood south of the project site is located at higher elevations than the Atwater Village neighborhood, which is north of the existing viaduct complex. Interstate-5 and the Los Angeles River, which act as physical barriers, divide the adjacent two neighborhoods. However, the viaduct complex serves to tie the two neighborhoods together and allow vehicular and pedestrian travel between them. Section 2.1.2 above describes the land use setting of the proposed project area, including general development within the project vicinity, the City's land use planning framework, and important community infrastructure in the project area.

Although pedestrians use the viaduct complex to travel between the two neighborhoods, the pedestrian facilities along Hyperion Avenue on the Complex present issues. Section 2.4.1 below provides more details about key transportation infrastructure present in the project area.

The proposed project would extend along roadways (Glendale Boulevard and Hyperion Avenue), which are designated by the City's classification system as Class II Major Highways. Commercial uses are generally located along the major highways in the project area, with residential uses in surrounding areas. One church, the Silver Lake Presbyterian Church, is located along Hyperion Avenue just south of the project limits. Aside from this facility, there are no community or public service facilities in the immediate project vicinity.

2.2.1.3 Environmental Consequences

The proposed project would make permanent changes to the viaduct complex, consisting primarily of seismic strengthening, replacement railings, widened Glendale Boulevard bridges over the Los Angeles River, sidewalk consolidation and improvements along Hyperion Avenue. In addition, the proposed project includes the reconfiguration of the existing northbound I-5 off ramp to Glendale Boulevard, and a new bicycle access path to the existing Los Angeles River Bike Path.

2.2.1.3.1 Temporary Impacts

Construction of the proposed project would occur in three primary phases: in Phase I, the reconfiguration of the northbound I-5 off-ramp would be constructed (the latter dependent on available funding); in Phase II, Hyperion Avenue along the viaduct complex would be improved; and in Phase III, the Glendale Boulevard bridges would be constructed. There could be construction overlap of the phases.

Traffic

As discussed in detail in Section 2.4 (Traffic), construction of the proposed improvements would require temporary lane closures; however, a minimum of one lane of traffic would be maintained along all thoroughfares. The temporary lane closures are not expected to substantially affect community character or cohesion because land uses and land use patterns would not be affected.

Pedestrian Access

During construction, the Glendale Boulevard bridges over the Los Angeles River would be closed off to pedestrians due to space limitations. Pedestrians wishing to cross the river on Glendale Boulevard would be able to access the existing Hyperion Avenue sidewalk by traversing Glendale Boulevard southbound travel lanes on a temporary crosswalk at the north end of the viaduct or by using the staircase that connects Glendale Boulevard and Hyperion Avenue just south of the I-5 northbound on-ramp. This detour route requires pedestrians to use the staircase to the Hyperion Avenue bridges to travel between Silver Lake and Atwater Village neighborhoods. Some people, such as those in wheelchairs or pushing strollers, would not be able to use the pedestrian detour route because of the staircase to the Hyperion Avenue bridges. Consequently, construction activities for the widening of the Glendale Boulevard bridges could temporarily eliminate a major pedestrian route in the project area, thereby creating a *de facto* barrier between the two neighborhoods, which is considered an adverse effect. See Section 2.4 for more details on pedestrian flow and pedestrian travel routes.

This elimination of the pedestrian route on northbound Glendale Boulevard and the unfriendly pedestrian detour on southbound Glendale Boulevard eliminates a smooth, continuous pedestrian path connecting the Atwater Village and Silver Lake neighborhoods. The lack of adequate pedestrian facilities during construction not only disrupts existing pedestrian travel behavior but discourages residents from walking between the two neighborhoods via the viaduct complex. It presents a physical barrier for pedestrians and ground-level interaction between the two neighborhoods.

Bicycle

Construction of the proposed project would maintain bicycle access to the Los Angeles River bike path from southbound Glendale Boulevard. Construction of the proposed project would require the temporary rerouting of the Los Angeles River bike path, which would occur prior to construction so that bike path use can be maintained. Because of this, construction of the proposed project would not disrupt bike path access or use, and would therefore not substantially affect community cohesion or character related to the Los Angeles River bike path.

Schools

Construction activities would occur along Hyperion Avenue, Glendale Boulevard and Riverside Drive along or close to the viaduct complex. Access to local streets would be maintained. The following public schools are located in the project vicinity (see Inset 2-1 below for school locations):

- John Marshall High School (approximately 0.25 mile southwest of the project site),
- Ivanhoe Elementary School (approximately 0.25 mile southeast of the project site),
and

- Glenfeliz Elementary School (approximately 0.5 mile northwest of the project site).

Construction of the proposed project is not expected to substantially affect access to these schools, as they are located outside of the anticipated construction work area. Even though the temporary lane closure may increase travel time for students and school staff who commute by car, a minimum of one lane of traffic would be maintained along all thoroughfares. Students and school staff who travel between Atwater Village and Silver Lake neighborhood by foot may experience greater impacts than those who travel by car. Potential impacts to student pedestrians are discussed above under Pedestrian Access and in the Traffic and Transportation section below.



Inset 2-1: Schools in Vicinity

Source: UltraSystems Environmental, Inc. 2012

2.2.1.3.2 *Permanent Impacts*

The proposed project would be considered to have an adverse community impact if it would result in the destruction or disruption of human-made resources, or substantially affect community cohesion and/or the availability of public facilities and services.

The proposed project would seismically strengthen and improve the viaduct complex. The proposed project would have no effect on population growth in the project area because it would

neither increase the capacity of the viaduct complex structure nor remove constrictions from the associated roadway. The proposed project would neither result in the need to relocate any existing housing or businesses nor substantially change or restrict access to adjacent and surrounding land uses.

Traffic and Pedestrian

The proposed project would implement seismic strengthening improvements along the viaduct complex to improve its ability to withstand a maximum credible earthquake. Over the long term, the seismic improvements would result in the continued cohesion of the Silver Lake and Atwater Village neighborhoods through the maintenance of vehicular and pedestrian access between the two neighborhoods, which is a long-term benefit.

The proposed project would reconfigure the existing off-ramp from northbound I-5, which would allow motorists exiting this off-ramp the option of turning left on Glendale Boulevard (southbound) rather than having to travel north, weave to the far left turn lane, and make a U-turn at (Glenfeliz Boulevard) to then travel south on Glendale Boulevard. The elimination of this latter traffic movement would be an improvement over the current situation that would slightly reduce total vehicle miles traveled and reduce weaving from merging northbound traffic from Hyperion Avenue and Glendale Boulevard.

The proposed project would consolidate the sidewalks along Hyperion Avenue (on the viaduct complex) to a new wider sidewalk along the west side of Hyperion Avenue and would provide other pedestrian-friendly features, such as a designated crosswalk at the north end of the viaduct complex from the wider sidewalk along the west side of Hyperion Avenue to the sidewalk along the west side of Glendale Boulevard. The sidewalk improvements beneath the Waverly Drive Bridge represent a substantial safety improvement over current conditions, in which pedestrians often walk along a 2-foot-wide curb adjacent to traffic.

The construction of a pedestrian overcrossing over the Los Angeles River (across Red Car piers), which has been previously requested by the local community councils, would further strengthen this connectivity and yield positive community effects. Construction of the pedestrian overcrossing over the Los Angeles River utilizing the existing Red Car piers would require that the piers be cut down to approximately the elevation of the River banks. This would directly affect the "Revisit the Red Car" Mural, located on a wall surface on one of existing Red Car piers. Permitted by the Flood Control District and painted in 2005, the "Revisit the Red Car" Mural serves two purposes for the community. It aims to educate future generations about the transportation history of Los Angeles, and to visually mark where the Red Cars once crossed over the Los Angeles River in Atwater Village. The bottom of the mural also provides a pictorial of the different bird species that live or migrate through the Los Angeles River. The mural would be replaced at a nearby location upon consultation with community members, and would continue to serve its purpose to educate the community within the vicinity of the bridge.

Bicycle

The proposed project would increase access to the Los Angeles River bike path through the provision of a new access path from northbound Glendale Boulevard, which would improve community cohesion or character through increased community access to commuter resources.

Visual and Aesthetics

The proposed project would provide replacement railings along the viaduct complex based on the original balustrade design, which would improve community character through the provision of more ornate and detailed historic bridge.

2.2.1.3.3 Cumulative Impacts

There are no overlapping construction projects that would occur during the construction of the proposed project. The proposed project would not result in physical changes in development or development patterns in the project area. Therefore, substantial cumulative impacts to community cohesion and character would not occur.

The proposed project, in conjunction with the Los Angeles River Revitalization Master Plan, would result in improvements in community character and cohesion through improvements in community access to the Los Angeles River.

2.2.1.3.4 Avoidance, Minimization, and/or Mitigation Measures

To mitigate for the temporary removal of pedestrian access on Glendale Boulevard Bridges over the Los Angeles River, and to ensure proper pedestrian detours while the Glendale Boulevard Bridges are closed to pedestrians during construction, mitigation measure **T-2** described below in **Section 2.4**, Traffic and Transportation, would be implemented.

Furthermore, City staff should take the initiative to notify schools, local communities, and other public institutions about temporary lane closures, elimination of the pedestrian route over the Glendale Boulevard Bridges, and viable detour routes. Proper notification to schools and local communities about the construction can reduce unnecessary confusion and avoid travel frustration.

2.2.1.4 No Build Alternative Impacts

The No Build Alternative would not change or improve the existing viaduct complex.

2.2.1.4.1 Temporary Impacts

Because no changes to the viaduct complex would occur under the No Build Alternative, no temporary effects to community character or cohesion would occur.

2.2.1.4.2 Permanent Impacts

The No Build Alternative would not result in long-term benefit to community cohesion and character, as described below.

Traffic and Pedestrian

Under the No Build Alternative, the existing seismic deficiencies of the viaduct complex would remain and the viaduct complex would remain susceptible to future earthquakes, which could affect future vehicular and/or pedestrian use of the viaduct complex.

Bicycle

The No Build Alternative would not affect access to the Los Angeles River bike path and would therefore not affect community cohesion or character related to the Los Angeles River bike path. However, the complex would remain susceptible to earthquakes, in the event of which the viaduct could suffer damage necessitating closure of the bike path.

Schools

The No Build Alternative would not require construction and would therefore not affect access to schools. However, the complex would remain susceptible to earthquakes, which could affect future vehicular and/or pedestrian use of the complex and thereby indirectly affect access to schools.

Relocations

Neither the proposed project, nor the No Build Alternative, would result in any relocation.

2.2.2 Environmental Justice

2.2.2.1 Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse human health or environmental effects of federal projects and programs on minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined according to the Department of Health and Human Services poverty guidelines. For 2010, this level was \$22,050 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

The term "minority" includes persons who identify themselves as Black/African American, Asian/Pacific Islander, Native American, or of Hispanic/Latino origin. The term "low income" includes persons whose household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines. A different threshold (e.g. U.S. Census Bureau poverty threshold) may be utilized as long as it is not selectively implemented and is inclusive of all persons at or below the HHS poverty guidelines. For purposes of this environmental document, a minority population is defined as a population or group residing in a geographical area where more than 50% of the individuals are minority, and a low-income population is

defined as a population group residing in a geographically affected area where the percentage of individuals at or below the poverty line exceeds that of the City of Los Angeles, as a whole.

In support of EO 12898, the United States Department of Transportation (DOT) issued an Order on Environmental Justice (DOT Order 5610.2) in 1997. This was followed by an FHWA Order on Environmental Justice (FHWA Order 6640.23), which was issued in 1998. The DOT Order declares the Agency's policy to promote the principles of environmental justice through the incorporation of those principles (as embodied in the EO) in all DOT programs, policies, and activities. The Order further states that this policy shall be realized by fully considering environmental justice principles throughout the planning and decision-making process using principles of *NEPA*, *Title VI of the Civil Rights Act of 1964*, the *Uniform Relocation Assistance Act and Real Property Acquisition Policies Act of 1970 as amended*, the *Intermodal Surface Transportation Efficiency Act of 1991*, and other DOT statutes, regulations, and guidance that addresses infrastructure planning and decisions-making (CEQ, 1997).

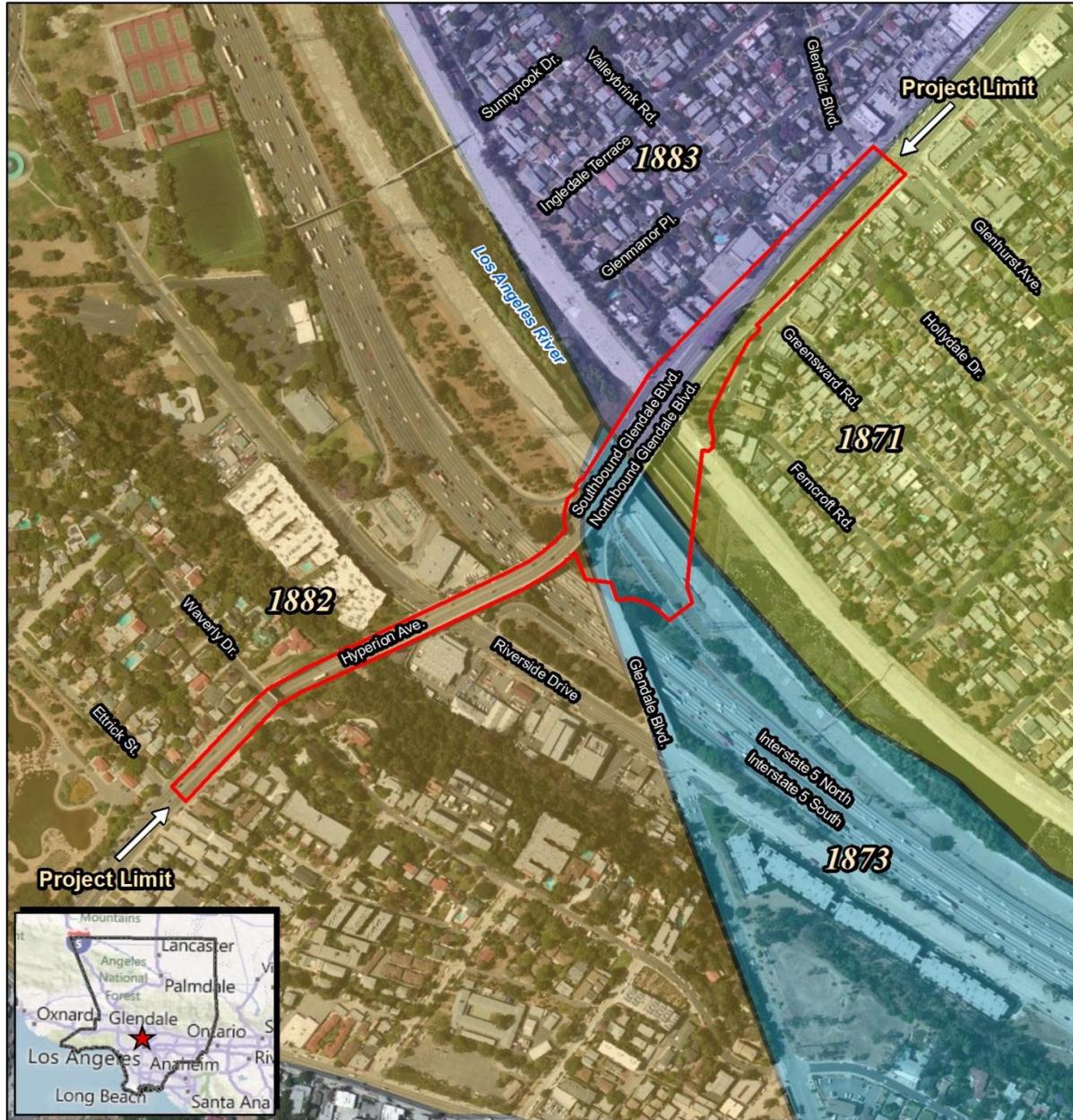
2.2.2.2 Affected Environment

The proposed project is located entirely within four census tracts, 1871, 1873, 1882, and 1883 (CLA, 2007e), which are shown in Figure 2-3. According to 2010 U.S. Census data, the minority population of the City of Los Angeles was approximately 70.3% of the City's total population, and the low income population was approximately 19.1% of the City's population (see Table 2.2-1). Table 2.2-1 compares the distribution of the population by race/ethnicity and poverty level for the four census tracts against the same distribution for the City as a whole between the 2000 and 2010 census data.

The four census tracts extend considerable distances beyond the project site. In addition, the portion of Census Tract 1873 adjacent to the project site does not contain land uses that could be occupied by residents or employees. Therefore, census tract block groups adjacent to the project site were identified and represent a more localized composition of the population likely to be affected by the construction of the proposed project. These block groups include:

- 1871, Block Group 1
- 1882, Block Group 1
- 1882, Block Group 2
- 1883, Block Group 3

Minority population in the four block groups adjacent to the project site comprise approximately 52.6% of the total population, and 2.8% of families are below poverty level. The affected population is not considered a low-income population for Environmental Justice evaluation purposes because current poverty levels in the four block groups are low. The minority population percentage of Census Tract 1871 Block Group 1 and Census Tract 1883 Block Group 3 are approximately 71.1% and 53.6% respectively, and are considered minority populations for Environmental Justice evaluation purposes.



Source: Bing Maps, 2010; Ultrasystems Environmental, Inc, 2011; U.S. Census, 2000

December 5, 2011

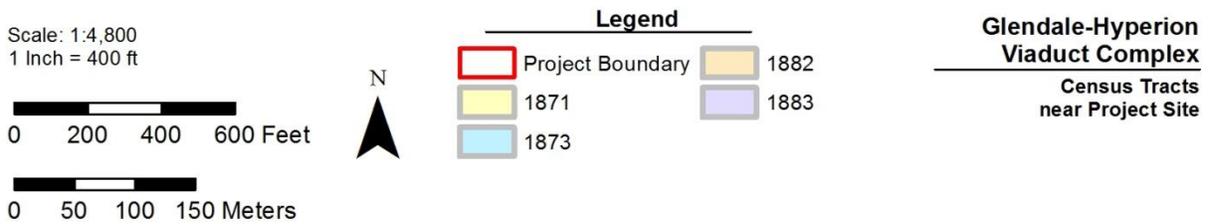


Figure 2-3: Census Tracts within Project Area

Table 2.2-1: 2000 and 2010 Population, Ethnicity, and Income Characteristics for Census Tracts

	Total Population	Total Minority Population	Total Individuals Below the Poverty Level**	Total Population	Total Minority Population	Total Individuals Below the Poverty Level**
	2000			2010*		
Los Angeles City	3,694,820	1,803,462	--	3,792,621	2,664,491	--
	--	48.8%	22.1	--	70.3%	19.1%
Census Tract 1871	6,849	3,871	897 (6,815)	6,849	5,068	482 (6,038)
	--	56.5%	13.2%	--	74.0%	8.0%
Census Tract 1873	3,390	1,511	452 (3,386)	3,216	1,032	327 (3,536)
	--	44.6%	13.3%	--	32.1	9.2%
Census Tract 1882	5,767	1,659	654 (5,761)	5,617	1,934	351 (5,856)
	--	28.8%	11.4%	--	34.4%	6.0%
Census Tract 1883	3,694	1,755	216 (3,676)	3,536	1,544	176 (3,398)
	--	47.5%	5.9%	--	43.7%	5.2%

Source: U.S. Census Bureau, 2000 and 2010, City of Los Angeles, 2005.

* Some census tracts may have grown enough in population size to qualify as more than one census tract. As a result, the 2000 Census Tract 1871 is split into Census Tracts 1871.01 and 1871.02 and Census Tract 1882 is split into 1882.01 and 1882.02 in the 2010 census data. For the purpose of consistency, the data of the split tracts are aggregated in this table.

** The total population by census tract for race/ethnicity data differs slightly from that of the poverty data due to estimation differences. The number before the parenthesis () is the total population in the census tract for the race/ethnicity data, and the number inside () is the total population in the Census Tract for the poverty data. The respective total population is used to calculate the percent of the minority and low-income populations (defined as at or below the poverty level).

Table 2.2-2: Population, Ethnicity, and Income Characteristics for Block Groups

Year 2000 Estimates			
Block Group	Population	Minority Population	% of Families below Poverty Level
1871, Block Group 1	1,869	1,013 (54.2%)	8.2%
1882, Block Group 1	911	297 (32.6%)	17.2%
1882, Block Group 2	1,550	562 (36.3%)	7.4%
1883, Block Group 3	1,000	439 (43.9%)	5.8%
	Number	Percentage	
Aggregate Block Group Population	5,330	--	
Total Minority Population in Block Groups	2,501	43.4%	
Total Families Below the Poverty Level in Block Groups	95	8.4%	
Year 2012 Estimates			
Block Group	Population	Minority Population	% of Families below Poverty Level
1871, Block Group 1	1,740	1,238 (71.1%)	2.1 %
1882, Block Group 1	849	300 (35.3 %)	4.4 %

1882, Block Group 2	1499	602 (40.2 %)	4.1 %
1883, Block Group 3	963	516 (53.6%)	1.7 %
	Number	Percentage	
Aggregate Block Group Population	5,051	--	
Total Minority Population in Block Groups	2,656	52.6%	
Total Families Below the Poverty Level in Block Groups	30	2.8 %	

Source: 2000 Estimates collected from U.S. Census Bureau, www.census.gov and 2012 Estimates collected from Nielsen SiteReports

Table 2.2-2 shows the race/ethnicity and income characteristics of the population comprising these block groups. The minority and low income compositions of the census tract block groups that encompass the project site can differ substantially from the compositions of the overall census tract areas. The poverty levels of the block groups are generally lower than those for the overall census tract areas.

2.2.2.3 Environmental Consequences

Aside from the widening of the Glendale Boulevard bridges over the Los Angeles River, minor improvements to the viaduct complex, and reconfiguration of the freeway on and off-ramps, there would be no permanent physical changes.

Project construction would result in temporary physical changes to the environment, primarily increased noise levels, traffic lane reductions, and the emission of air pollutants during construction.

2.2.2.3.1 Temporary Impacts

Construction of the proposed project would not result in adverse air, traffic or noise impacts, as discussed in Sections 2.4, 2.10, and 2.11. Construction along northbound and southbound Glendale Boulevard Bridges over the Los Angeles River would prohibit access across the bridges. As a mitigation measure for this impact, an alternate pedestrian crossing would be constructed over the Los Angeles River across the existing Red Car piers (downstream of the viaduct complex). The pedestrian crossing would provide a detour route around the Glendale Boulevard Bridges during construction. With implementation of this mitigation measure, the impact is not considered adverse. Since construction of the proposed project would not result in adverse impacts there would be no significant adverse impacts to disproportionately affect minority populations.

2.2.2.3.2 Permanent Impacts

The proposed project would result in an environmental justice impact if permanent high and adverse impacts from the proposed project would disproportionately affect a minority or low income population.

Visual resources in the project area include the existing viaduct complex, which is eligible for listing in the National Register of Historic Places (NRHP). The visual changes to the viaduct complex resulting from the proposed project are expected to improve the memorability of views of the viaduct complex. Consequently, the proposed project would not result in adverse aesthetic

impacts from changes to the overall visual character and quality of a landscape. The proposed project would result in moderate losses of historic fabric from both Glendale Boulevard bridges over the Los Angeles River. The impacts to these resources relate to the structures' eligibility for listing in the NHRP and do not result in direct impacts to humans. Although the loss of historic fabric from the Glendale Boulevard bridges are not likely to affect the structure's continued eligibility for listing by the NRHP, the loss of historic fabric itself is considered to be a permanent adverse impact. However, because the adverse impact is related to the loss of historic fabric and no adverse aesthetic impacts were identified, the adverse impact does not have the capacity to disproportionately and adversely affect either minority or low income populations.

As discussed above, an environmental justice impact would occur only if high and adverse impacts would disproportionately affect a minority and/or low income population. High and adverse impacts, in the context of an environmental justice evaluation, are generally defined as significant unavoidable adverse impacts to humans after mitigation. As the analysis in this report demonstrates, the proposed project would not have any significant effects that cannot be mitigated below the level of significance. Therefore, the proposed project would not result in adverse impacts that permanently and disproportionately affect either minority or low-income populations per EO 12898 regarding environmental justice.

2.2.2.3.3 Cumulative Construction Impacts

The construction of the proposed project would result in construction-related effects (primarily increased traffic congestion, noise, and construction emissions). The construction effects would be experienced by adjacent residents, commercial building occupants, and motorists who travel through the project area. The affected populations do not constitute a minority or low income population, and no disproportionately high and adverse impacts would occur to a minority or low income population.

The exposure of motorists to construction effects would be temporary. Traffic congestion from project construction along Glendale Boulevard and Hyperion Avenue, while being inconvenient to motorists, is not considered to be a high and adverse impact. In addition, motorists have the ability to utilize alternative routes to reach their destinations, and there are no indications that the motorists who would travel through the project area would be predominantly minority or low income.

As a consequence, no high and adverse cumulative impacts to environmental justice populations would occur.

2.2.2.3.4 Avoidance, Minimization, and/or Mitigation Measures

Based on the above discussion and analysis, the proposed action would not cause disproportionately high and adverse effects on any minority or low-income populations per EO 12898 regarding environmental justice.

2.2.2.4 No Build Alternative Impacts

The No Build Alternative would not result in new or additional impacts to the community (social, economic) or environmental justice issues relative to existing conditions.

2.3 Utilities/Emergency Services

2.3.1 Regulatory Setting

The City of Los Angeles is an incorporated municipality that maintains all powers possible for a charter city to have under the constitution and laws of the State of California. The provision of services by the City of Los Angeles originates from the charter or code.

Regarding the provision of services, the Charter specifically states that

“... every City office and department, and every City official and employee, is expected to perform their functions with diligence and dedication on behalf of the people of the City of Los Angeles. In the delivery of City services and in the performance of its tasks, the government shall endeavor to perform at the highest levels of achievement, including efficiency, accessibility, accountability, quality, use of technologically advanced methods, and responsiveness to public concerns within budgetary limitations.”

Article 5 of the Charter creates various city departments, including the Fire and Police Departments, establishes a Board of Commissioners over each department so-created, and specifies the powers of the boards and heads of each city department.

Under its authority, the City issues permits to utility companies and other organizations that allow them to place electrical lines, telephone lines, cables, fiber optic lines, pipelines, and other utilities in the public right-of-way within its jurisdiction.

2.3.2 Affected Environment

The project site is located within the service area of Fire Station 56, which is located on Rowena Avenue near Glendale Boulevard. Fire Station 50, located along Fletcher Drive just east of San Fernando Road, provides fire protection services to the project vicinity north of Larga Avenue. Fire Station 56 is located approximately 0.5 mile southeast of the project site and Fire Station 50 is located about 1.5 miles to the east. The nearest police station to the project is the Northeast Division Police Station, located about one mile to the northeast of the project site (CLA, 2007e).

In addition, various sewer lines, storm drain pipelines and structures, water lines, electrical lines, natural gas lines, telephone lines, street lights, and fire hydrants and other utility lines are located in or along Glendale Boulevard, Riverside Drive, Waverly Drive, and Hyperion Avenue.

2.3.3 Environmental Consequences

2.3.3.1 Temporary Impacts

Underground Utilities

Construction of the proposed project would not result in substantial disruptions in utility services because underground utilities are identified and planned for during the project design process. During the design process, utilities that could conflict with project elements or that could be affected during construction are identified as a standard practice, and the utilities would be required to be relocated by the utility company before Project construction begins.

In addition, construction of the proposed project would follow the underground service alert (DigAlert) program, as required by standard contract specifications, for construction activities. This program requires the contractor to coordinate with DigAlert before construction. All utility companies, including those responsible for natural gas, water, wastewater, electrical, telephone,

or cable television lines would be contacted by DigAlert to identify and mark utility line locations in the field prior to construction, as a precaution.

In the event of an accidental utility disruption during construction, repairs would be made immediately to ensure that the utility service interruption is minimized. No other temporary impacts to utilities are expected. Because of established utility management procedures during both the design and construction phases, the proposed project is not expected to adversely affect underground utilities.

Aboveground Utilities

Various aboveground electrical lines are located along portions of Hyperion Avenue, Riverside Drive, and Glendale Boulevard. In addition, high powered electrical lines that extend along the Los Angeles River cross the viaduct complex. As part of the standard construction specifications, the contractor would be required to avoid disruptions to overhead utilities and employ proper safety practices. Because of this, no impacts related to overhead utilities would occur.

Fire and Police Protection

During construction, traffic flow on Hyperion Avenue, Glendale Boulevard, and Riverside Drive in the project area could be restricted or reduced to one lane in each direction. However, construction is not expected to substantially affect the accessibility or response time of fire protection or police protection response units as an existing network of local streets provide alternative routes. In addition, fire stations are located on either side of the viaduct complex. As a standard practice, the Contractor would be required to prepare a Work Area Traffic Control Plan based on the construction phasing plans that would be provided by the City. The final plan would be subject to review and approval of the Los Angeles Department of Transportation (LADOT). The approved Plan would include protocols for informing emergency response providers of construction schedules and identification of alternative routes through and around the active construction zone.

Solid Waste

Construction of the proposed project would result in generation of some demolition debris and construction debris, consisting primarily of concrete, steel, and timber. Some of this material is appropriate for landfill disposal; however, a high fraction of construction debris is typically recycled or reused because of its economic advantage over new materials. The fraction of debris deemed not suitable for recycling or reuse and chiefly consisting of inert materials could be disposed of in an inert landfill, thereby saving valuable sanitary landfill capacity in municipal landfills. Once construction is complete, the proposed project would not generate solid waste. The disposal of all solid waste material generated by the proposed project would comply with all federal, state, and local statutes and regulations.

2.3.3.2 Permanent Impacts

A project would be considered to have an adverse impact on utilities if it would result in substantial demand for utilities, such that new supplies or management capacity would be required, or if the project would result in growth not accounted for in service provider adopted plans. A project would be considered to have an adverse impact on public services such as fire, or police, if it would result in demand for such services that exceed existing or planned capacities, or require the construction of new or additional facilities.

The proposed project would not result in additional demands for utilities or public services, or substantially affect the availability of or access to public facilities and services because it is a

bridge improvement project that would not increase the demand for new water or wastewater conveyance or treatment facilities, new electricity or gas supplies or infrastructure.

Fire Protection – The proposed project site would not increase the demand for fire protection services because it is an infrastructure improvement project that would not result in increased housing or commercial/industrial development. Because of this, the need to add additional or new fire-fighting facilities would not occur as a result of the proposed project.

Police Protection – The proposed project site would not increase the demand for police protection services because it is an infrastructure improvement project that would not result in increased housing or commercial/industrial development. As a consequence, the need to add additional or new police protection facilities would not occur as a result of the proposed project.

2.3.3.3 Cumulative Impacts

Construction of the proposed project would not generate a substantial amount of construction debris given that a large fraction of the anticipated debris would be recyclable, reusable, or suitable for disposal in inert landfills. As a consequence, construction waste would not make a cumulatively considerable contribution to a cumulatively significant impact to landfill capacity.

The proposed project would not result in permanent adverse impacts to the utilities or emergency services providers. As a consequence, no cumulative impacts to utilities are anticipated.

Operation of the proposed project would improve the ability of the viaduct complex to withstand an earthquake and remain operational following such an event. None of the other related projects would result in operational impacts on the provision of emergency services, and as such, the proposed project would not make a cumulatively considerable contribution to a cumulatively significant impact to emergency services.

2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Because impacts are not anticipated, avoidance or mitigation measures are neither required nor proposed.

2.3.4 No Build Alternative Impacts

The No Build Alternative would not result in new or additional impacts to utilities or emergency service providers relative to existing conditions because no construction would occur. However, the No Build Alternative would not provide needed seismic improvements to the viaduct complex. Under the No Build Alternative, the risk that the viaduct complex could become damaged or unusable as a result of a major earthquake would remain. Earthquake related damage could adversely affect the response of emergency services providers until repairs to the structure were accomplished.

2.4 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.4.1 Regulatory Setting

Caltrans, as assigned by FHWA, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway uses that share the facility (Caltrans, 2011).

Caltrans and FHWA are committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public would be provided to persons with disabilities.

The City of Los Angeles' Department of Transportation (LADOT) is responsible for traffic management, including pedestrian and bicycle facilities, in the City. For street improvement projects, and other projects that require construction in the public right-of-way, LADOT provides review, oversight, and approval of work area traffic control plans and detour plans; and establishes traffic lane and parking requirements and restrictions. The Mayor of the City of Los Angeles issued Executive Directive No. 2 (October 20, 2005), which formalizes a general prohibition of rush hour construction by City Departments and agencies. Rush hour work is defined as actual construction, including equipment and material staging, on major roads from 6:00 a.m. to 9:00 a.m., and 3:30 p.m. to 7:00 p.m. This generally implies that all normally available traffic lanes would be available during rush hours. The Executive Directive also contains exemptions to the rush hour prohibition for emergency work, and for major public works projects with traffic mitigation plans. Major public works projects are improvements to public infrastructure in the public right-of-way initiated as either a capital project by the City or as allowed under the permitting jurisdiction of City's Bureau of Engineering. The Bureau of Engineering has issued Special Order No. 001-0406, which governs the process of complying with Executive Directive No. 2 (BOE, 2006).

2.4.2 Affected Environment

The viaduct complex is comprised of six separate bridges. Hyperion Avenue extends along three of the Complex's bridges (over Riverside Drive, I-5, and the Los Angeles River). The remaining three bridges are the northbound and southbound Glendale Boulevard bridges (both over the Los Angeles River) and the Waverly Drive Bridge over Hyperion Avenue. The viaduct complex serves as a key connecting roadway between nearby communities and other outlying neighborhoods, especially the Silver Lake and Atwater Village communities.

The Major Highway – Class II classification standard includes 104 feet of right of way, 12 foot sidewalk/parkway, 13-foot curb lane, four full-time through lanes, two part-time parking lanes, and one median/left-turn lane.¹ The viaduct complex does not meet the City's current design standard for a major highway – Class II facility because of its width constraints, which do not

¹ City of Los Angeles General Plan, Chapter VI-Street Designations and Standards

provide adequate facilities for motorist, bicyclist and pedestrians. The viaduct complex was constructed between 1927 and 1929. The I-5 freeway was completed in 1956.

The viaduct complex spans approximately 1,190 feet over the Los Angeles River, Interstate 5 (I-5), and Riverside Drive. The complex is generally aligned along a southwest-northeast axis and is bounded by Ettrick Street on the southwest and Glenfeliz Boulevard on the northeast, respectively.

Descriptions of the Viaduct Complex's six structures and their Bridge Identification Numbers are included below.

Waverly Drive Bridge (Bridge Number 53C1179) – Spans over Hyperion Boulevard in an east-west direction. It has a two-lane roadway and has no sidewalks through the neighborhood of Silverlake. The 65-foot-long earth-filled reinforced concrete arch structure is two lanes wide, with a flush roadway and pedestrian walkways on both sides of the bridge. Enclosing the bridge are railings which have solid concrete finish with inset panels that covered the original balusters. Cast bronze lanterns with glass globes are set at each corner of the bridge.

Hyperion Avenue Viaduct over Riverside Drive (Bridge Number 53C1882) – This portion of the Glendale-Hyperion Viaduct Complex spans Hyperion Avenue over Riverside Drive in a north-south direction through the communities of Silverlake and Atwater Village. It includes three arch spans with a total length of 429 feet as a reinforced concrete arch bridge. The Hyperion Avenue structure accommodates four traffic lanes (two lanes in each direction) and is 63 feet wide. This portion is a secondary highway. The width of the existing roadway on Hyperion Avenue is 56 feet in both directions combined. It has two 12-foot lanes in each direction with an 8-foot double striped median.

Currently 5-foot-wide sidewalks are along both the east and west sides of the complex's Hyperion Avenue roadway from the retaining wall near Waverly Drive northward to Hyperion Avenue's merger with north- and southbound Glendale Boulevard. On the east side of Hyperion Avenue (southern end), the sidewalk terminates at the retaining wall, which supports the Waverly Drive Bridge (over Hyperion Avenue). However, a 2-foot-wide curb extends along the abutment/retaining wall adjacent to the northbound traffic. Pedestrians using the east sidewalk must walk along this narrow curb after the sidewalk ends. On the west side of the complex's Hyperion Avenue roadway, the sidewalk also terminates at a 2-foot-wide curb that extends along the retaining wall base. An ascending walkway aligned along the top of the west retaining wall provides an alternative for pedestrian use.

Hyperion Avenue Viaduct over I-5 (Bridge Number 531069) – The segment of the viaduct complex that carries Hyperion Avenue over I-5 (Golden State Freeway) is a single span, reinforced concrete, open spandrel arch that is 135 feet long. It carries four lanes of traffic (two lanes in each direction) and is 71 feet wide with cantilevered 5-foot walkways flanking the roadway.

Hyperion Avenue Viaduct over the Los Angeles River (Bridge Number 53C1881) – Comprising nine spans with a total length of 518 feet, the Hyperion Avenue Bridge over the Los Angeles River is composed of reinforced concrete filled spandrel arches. The bridge carries four lanes (two lanes in each direction) of traffic and is 68 feet wide. Five-foot cantilevered walkways flank the roadway. The Hyperion Avenue roadway merges with and transitions to Glendale Boulevard at the northern end of the viaduct complex. This bridge is flanked by the

structures that carry northbound and southbound Glendale Boulevard over the Los Angeles River and becomes a major highway.

The existing sidewalks on either side of Hyperion Avenue terminate at the merge point and force pedestrians to cross either northbound or southbound Glendale Boulevard. There are two staircases within the project area where pedestrians can access Hyperion Avenue and Glendale Boulevard. One, which connects Glendale Boulevard and Hyperion Avenue, is located on the west side of Hyperion Avenue. A second staircase provides pedestrian access between Riverside Drive and Hyperion Avenue, and is also on the west side Hyperion Avenue.

Southbound Glendale Boulevard Bridge over the Los Angeles River (Bridge Number 53C1883) – The southbound Glendale Boulevard Bridge over the Los Angeles River segment of the Glendale-Hyperion Viaduct Complex consists of six reinforced concrete arch spans with a total length of 316 feet. Each is a filled spandrel arch measuring 48 feet long. Reinforced concrete abutments and piers support the bridge. The bridge supports two 12-foot traffic lanes within a total width of 38 feet and is flanked by 4-ft walkways on one side that are situated next to solid reinforced concrete railings with inset panels and a smooth concrete finish. Glendale Boulevard south of the viaduct complex is designated as a secondary highway. Both Glendale northbound and southbound bridges over the Los Angeles River currently lack shoulders.

Northbound Glendale Boulevard Bridge over the Los Angeles River (Bridge Number 53C1884) – The northbound Glendale Boulevard Bridge over the Los Angeles River segment of the viaduct complex is identical to the southbound structure just discussed, except Glendale Boulevard between the Los Angeles River and the boundary with the City of Glendale is designated as a Scenic Highway (CLA, 1999), with the scenic resource being the wide landscaped median.²

The northbound I-5 off-ramp exit to Glendale Boulevard is controlled by a stop sign and only right turns onto northbound Glendale Boulevard are allowed at this approach. Motorists exiting this off-ramp who wish to travel on southbound Glendale Boulevard must travel an extra half mile by first traveling north on Glendale Boulevard to Glenfeliz Boulevard, where they make a U-turn and travel south on Glendale Boulevard. The signalized controlled intersection currently operates at a Level of Service (LOS) A in both the AM and PM Peak hours (MGE, 2012). Figure 2-4 shows the travel path (overlaid on an aerial photograph) that vehicles must travel to head south on Glendale Boulevard. As shown in Table 2.4-1, the stop-controlled intersection currently operates at a Level of Service (LOS) B and C in the AM and PM Peak hours.

² City of Los Angeles Transportation Element of the General Plan, Appendix E – Inventory of Designated Scenic Highways



Figure 2-4: Traffic Movement – Ramp to SB Glendale

Source: ACT, 2004

Current operating conditions of the I-5, the I-5 northbound off-ramp, Glendale Boulevard, and Hyperion Avenue, are shown in Table 2.4-1.

Table 2.4-1: Existing (2011) Levels of Service

Location	A.M. Peak Hour	P.M. Peak Hour
I-5 Mainline, NB	D	D
I-5 Mainline, SB	C	D
I-5 NB Off-Ramp/NB Glendale Blvd Intersection, Unsignalized	B	C
Glendale Boulevard, NB	A	A
Glendale Boulevard, SB	A	A
Hyperion Avenue, NB	A	B
Hyperion Avenue, SB	B	B

Source: MGE Engineering, Inc., January, 2012 (MGE, 2012).

2.4.2.1 Bikeways

The bike path along the Los Angeles River forms an important recreational and commuter use in the project area. The bike path generally runs along the top of the river's southwest bank, but slants from the bank top, to go around an abutment, as it passes beneath the viaduct complex. This bike path is accessible via an access gate and ramp along southbound Glendale Boulevard near the northbound I-5 on-ramp.

The 2010 City of Los Angeles Bicycle Plan is a long-range planning tool to guide future development of bicycle facilities in the City to the year 2045. According to the plan, as a transportation element, Hyperion Avenue is listed as a future bicycle lane (dedicated bicycle-only lane), and Glendale Boulevard is listed as a future bicycle route (in-road bicycle and vehicle shared roadway). Currently, Hyperion Avenue does not have a bicycle lane and Glendale Boulevard does not have a bicycle route. Bicycle use on the roadway is primarily used for transportation as a commuter route of the local transportation system.

Riverside Drive in the project area is listed as a bicycle route (CLA, 2011), which is a shared roadway that is identified as a bike route on signs. In addition, there is a bike path along the right bank of the Los Angeles River, which is currently only accessible from southbound Glendale Boulevard near the on-ramp to northbound I-5 in the project area. The viaduct complex traverses both the bike route along Riverside Drive and the bike path along the Los Angeles River.

2.4.2.2 Street Lights

Various street lights are located along the viaduct complex. These original street lights have bronze posts and original globes, and are situated on bases that are incorporated into the railing system. The lumen output of these street lights does not meet current City's standards for city streets.

2.4.2.3 Pedestrian Flow

The viaduct complex includes sidewalk and staircase pedestrian facilities; however, the configuration of the sidewalks is not standard. South of viaduct complex, Hyperion Avenue includes 5-foot sidewalks along both sides of the roadway. However, the sidewalks along Hyperion Avenue near the Waverly Drive overcrossing transition into 2-foot-wide curbs adjacent to the retaining walls and Waverly Drive Bridge abutments. There is an elevated pedestrian walkway that allows pedestrians using the west sidewalk to avoid having to walk along the 2-foot-wide curb beneath the Waverly Bridge, but no such pedestrian bypass exists along the east side of Hyperion Avenue. Pedestrians using the west sidewalk often bypass the safer (and steeper) walkway and instead walk along the narrow curb, exposing themselves to traffic hazards. Pedestrians using the east sidewalk have no option and must use the narrow curb along the retaining wall.

At the northern viaduct complex terminus, the sidewalks end where Hyperion Avenue merges with Glendale Boulevard (between the northbound and southbound Glendale Boulevard traffic lanes), and pedestrians using the Hyperion Avenue sidewalks must then cross traffic lanes to reach the sidewalks on Glendale Boulevard.

Pedestrians who live in or travel to and from North Atwater Village can access the existing Hyperion Avenue sidewalks at the north end of the viaduct complex by traversing Glendale Boulevard travel lanes or by using the staircase that connects Glendale Boulevard and Hyperion Avenue. A second staircase provides pedestrian access between Riverside Drive and Hyperion Avenue along the viaduct complex.

2.4.2.4 Transit and Parking

Three Los Angeles County Metropolitan Transportation Authority (Metro) bus lines operate in the immediate project area: Lines 92, 96, and 201 (CLA, 2007e). Line 92 and Line 201 both operate through the project area along Glendale Boulevard with the nearest bus stop to the viaduct complex located along Glendale Boulevard on the I-5 overcrossing. Line 96 operates in both directions through the project area along Riverside Drive, and the nearest stops to the viaduct complex are on Riverside Drive near Glendale Boulevard.

On-street parking is not allowed on the viaduct complex, but is allowed on Glendale Boulevard north of viaduct complex and south of the viaduct complex on Hyperion Avenue. On-street parking is also permitted on Riverside Drive.

2.4.3 Environmental Consequences

2.4.3.1 Temporary Impacts

Construction of the proposed project would be phased over 2.5 years, in order to keep the viaduct complex open to traffic while construction occurs. Occasional construction-related traffic effects are anticipated and are likely to include delays and extended travel times through active construction zones.

Voluntary Traffic Detours

Construction of the proposed project would not increase traffic, but would temporarily reduce the capacity of the affected streets because there would be some lane closures. During the construction of the Hyperion Avenue improvements, traffic flow would be limited to one lane in each direction for at least 11 months. The affected segment of Hyperion Avenue would be approximately 1,800 feet long. Table 2.4-2 shows the critical existing hourly volumes occurring

during the morning peak hour in the southbound direction (1,295 vehicles per hour) and evening peak hour in the northbound direction (1,325 vehicles per hour) (MGE, 2012). With these peak-hour traffic volumes and the standard traffic requirements, one lane in each direction would be able to adequately accommodate this traffic flow.

- There are no cross streets or driveways along the segment of Hyperion Avenue under construction, which means that interruption to through traffic would be minimal.
- Construction site traffic would be regulated at 25 miles per hour. At this speed, the capacity of one uninterrupted lane could be as high as 1,500 vehicles per hour with an average gap of 65 feet between vehicles. This would provide operating conditions of LOS D or better.
- Actively promoted Transportation Management Program elements would be able to reduce peak hour vehicular traffic by at least 5%; therefore reducing the demand to about 1,260 vehicles per hour in the peak direction.

A study of the existing roadway circulation pattern and traffic conditions near the project area concluded that voluntary diversion of Hyperion Avenue traffic to other routes during construction would not be substantial. There are two routes for potential voluntary diversions: 1) Fletcher Drive, located approximately 0.75 mile to the south; and 2) Los Feliz Boulevard, located approximately 0.6 mile to the northwest. Factors that would minimize voluntary diversion to these two parallel streets include:

- During the retrofit of the Hyperion Avenue structures when only one lane in each direction is provided, the peak hour operating condition could be maintained at LOS D or better.
- The proposed new alignment of the I-5 northbound off-ramp terminus at Glendale Boulevard would be constructed prior to retrofitting the Hyperion Avenue structures, which would improve traffic operations along portions of the Glendale Boulevard segment.
- The likelihood of voluntary diversion of I-5 northbound off ramp traffic to utilize the Los Feliz Boulevard off-ramp instead would be minimal or low because the intersections of Los Feliz Boulevard with I-5 ramps are already congested during peak hours, as is the intersection of Los Feliz Boulevard and Riverside Drive and Los Feliz Boulevard south of Riverside Drive.

The likelihood of voluntary diversion of Hyperion Avenue through traffic between San Fernando Road and Rowena Avenue utilizing Fletcher Drive would be minimal because the alternative route would involve approximately 1.5 miles of additional travel distance and four additional signalized intersections that are fairly congested during peak hours. Because of the factors discussed above, one lane in each direction would be able to adequately accommodate peak hour traffic flow. Therefore, there would be no impacts to local streets due to voluntary traffic detours. As a result, the impact of voluntary traffic detours is not adverse, and no planned vehicular detours are necessary.

Table 2.4-2: Existing (2011) Traffic Volumes

Location	A.M. Peak Hour	P.M. Peak Hour	ADT
I-5 Mainline (NB+SB)	14,060	15,060	240,740
I-5 NB Off-Ramp	535	730	7,390
I-5 NB On- Ramp	340	305	4,055
Glendale Boulevard, NB	295	485	5,890
Glendale Boulevard, SB	650	655	8,000
Hyperion Avenue, NB	805	1,325	14,130
Hyperion Avenue, SB	1,295	1,070	13,900

Source: MGE Engineering, Inc., January, 2012 (MGE, 2012)

Construction along Hyperion Avenue, northbound Glendale Boulevard, and southbound Glendale Boulevard would be staged to keep traffic flowing at all times. The reconfiguration of the northbound off-ramp from I-5 to Glendale Boulevard and construction of the new approach intersection is expected to occur in the first construction phase before other viaduct complex improvements are constructed. The reconfiguration of the off-ramp would reduce northbound traffic on Glendale Boulevard and U-turn traffic at Glendale Boulevard at Glenfeliz Boulevard because the reconfigured off-ramp would allow some motorists to make a left turn onto southbound Glendale Boulevard rather than making a right on Glendale Boulevard and a U-turn at Glenfeliz Boulevard, as currently occurs. Because the proposed off-ramp signalization and reconfiguration would reduce the amount of vehicles travelling northbound, no traffic impacts would occur at the Glendale Boulevard and Glenfeliz Boulevard intersection.

Following reconfiguration of the off-ramp, construction along Hyperion Avenue and Glendale Boulevard would commence. Construction of the proposed project would require temporary lane closures along Hyperion Avenue and Glendale Boulevard, which are considered major roads under Special Order 001-0406 (Guidelines regarding Executive Directive No. 2) (BOE, 2006). Construction of the proposed project would affect travel lanes during the rush hour and would require an exemption from the Directive. All public works projects that require construction in streets are required by standard specifications to obtain a work area traffic control plan, also known as a Traffic Management plan (TMP). Because of this, the project would meet the requirements for an exemption from the prohibition of construction during rush hours. The exemption to the Executive Directive would allow the temporary loss of travel lanes during peak hours (for the establishment of work zones to perform the improvements) and to allow construction during peak traffic hours within the established work zones. The exemption for the latter would allow longer daily construction hours, which would shorten the overall construction period. Construction activities would be confined to the established work zone, which would be separated from travel lanes with K-rails.

During construction, temporary on-street parking restrictions along southbound Glendale Boulevard between Valleybrink Road and the viaduct complex and along the frontage roads that connect Waverly Drive to Etrick Street are also required. While temporary losses in on-street

parking are inconvenient, adequate on-street parking is available in the project vicinity to offset the temporary localized loss of parking during construction.

Although the exact nature of the construction phasing cannot be determined at this time, the construction phases that are described below are considered to be a typical representation of actual construction phasing that could occur in order to maintain at least one travel lane in each direction (ACT, 2007b). Deviations from the phasing may occur related to the selected contractor's methods of construction, but the general requirement to maintain through lanes of traffic during construction would remain.

Hyperion Avenue

The primary seismic retrofits and other improvements such as railing replication, new sidewalk, and roadway banking to Hyperion Avenue along the viaduct complex that would affect traffic during construction are as follows:

A. Construct East Segment Improvements.

During this phase, construction of improvements along the east side of Hyperion Avenue from about Ettrick Avenue to the northern terminus of the viaduct complex (just north of the Los Angeles River) would occur. One 12-foot-wide travel lane, an 11-foot-wide travel lane, and a 4-foot shoulder would remain operational, as would one 12-foot-wide northbound lane with a 4-foot shoulder. The work zone would be about approximately 12 feet wide and separated from traffic with K-rails. This phase would take approximately five months to complete.

B. Construct Center Segment Improvements

Following completion of the improvements to the east side segment, improvements along the roadway center segment would be constructed. One southbound lane and one northbound lane (both approximately 12 feet wide with a 4-foot shoulder) would remain open for traffic. K-rails would separate the work area from the traffic lanes. This phase would take approximately two months to complete.

C. Construct West Segment Improvements

The third phase to be constructed along Hyperion Avenue would be the west segment improvements from Ettrick Avenue to the northern terminus of the viaduct complex. During this phase, one 12-foot-wide lane (with a 4-foot shoulder) in each direction would remain open to through traffic along the eastern half of the viaduct complex. A 5-foot-wide temporary pedestrian walkway would be placed adjacent to the traffic southbound traffic lane but would be separated by K-rails. The approximately 21-foot-wide work area would be located along the west side of the temporary walkway and separated with K-rails. Temporary pedestrian access ways would be established through the work zone to the pedestrian walkway at the Glendale Boulevard and Riverside Drive staircases. This phase would take approximately six months to complete.

Glendale Boulevard Bridge (southbound)

The southbound Glendale Boulevard Bridge over the Los Angeles River would be widened by approximately eight feet. During construction, one travel lane (about 12 feet wide with a 4-foot shoulder) would remain open. This phase would take approximately six months to complete.

During the construction, pedestrians will not be able to access the bridge due to space limitations associated with the contractor's work zones and the need to keep at least one travel lane open. Pedestrians could be detoured to the Hyperion Avenue sidewalk between the northern end of the viaduct complex and the staircase that connects Glendale Boulevard with Hyperion Avenue. However, this detour would not be readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs. The path of travel would not be continuous and unobstructed, and would not meet ADA standards. Inaccessibility to the Glendale Boulevard Bridge would eliminate a major pedestrian route that connects the Atwater Village and Silver Lake communities. Therefore, a temporary elimination of pedestrian access across the Southbound Glendale Boulevard Bridge during construction is considered an adverse effect.

Glendale Boulevard Bridge (northbound)

The northbound Glendale Boulevard Bridge over the Los Angeles River would be widened by approximately eight feet. During construction, one travel lane (about 12 feet wide with 4-foot shoulder) would remain open. This phase would take approximately six months to complete.

Due to the need to maintain one lane of through traffic and to provide the contractor with an adequate work zone, pedestrian access along the bridge would be prohibited during construction. Inaccessibility to the Glendale Boulevard Bridge would eliminate a major pedestrian route that connects the Atwater Village and Silver Lake communities. Because no viable detour routes to the northbound bridge exist, a temporary elimination of pedestrian access across the Northbound Glendale Boulevard Bridge during construction is considered an adverse effect.

Seismic Retrofit of Abutments and Piers

Seismic improvements to various viaduct complex abutments could affect traffic during construction. They are as follows:

A. Abutment Northeast Side of Riverside Drive

Construction of the seismic improvements to this abutment would be performed from the right-of-way beneath the viaduct complex. During construction of seismic improvements to the abutment along the northeast side of Riverside Drive, all travel lanes and sidewalks would remain open. However, localized on-street parking on the northeast side of Riverside Drive beneath the viaduct could be eliminated for short durations to facilitate access to the underside of the viaduct complex from where work would be performed. This phase would take approximately one month to complete.

B. Abutment Southwest Side of Riverside Drive

Construction of the seismic improvements to this abutment would be performed from the right-of-way beneath the viaduct. During construction of seismic improvements to the viaduct complex abutment along the west side of Riverside Drive, all travel lanes, including the left turn lane to northbound I-5, and sidewalks would remain open. However, localized on-street parking on the southwest side of Riverside Drive beneath the viaduct could be eliminated for short durations to facilitate access to the underside of the viaduct complex from where work would be performed. This phase would take approximately one month to complete.

C. Abutment West of Southbound Glendale Boulevard

During construction of seismic improvements to the viaduct complex abutment along the west side of southbound Glendale Boulevard (under Hyperion Avenue), one southbound lane would remain open. A temporary pedestrian walkway protected by K-rails would be established adjacent to the work area. The existing U-turn beneath the viaduct complex would be temporarily closed during construction. This phase would take approximately one month to complete.

D. Abutment East of Southbound Glendale Boulevard

During construction of seismic improvements to the viaduct complex abutment along the east side of southbound Glendale Boulevard (under Hyperion Avenue), one southbound lane would remain open, but the existing U-turn beneath the viaduct complex would be temporarily closed. This phase would take approximately one month to complete.

E. Abutment at Southbound to Northbound U-turn

During construction of seismic improvements to the viaduct complex abutments along both sides of the U-turn (connecting southbound to northbound Glendale Boulevard), the U-turn would be temporarily closed. This phase would take approximately one month to complete.

F. Abutment at Los Angeles River

During construction of seismic improvements to the viaduct complex abutment along the south side of the Los Angeles River, the bike path would be temporarily relocated (using temporary timber support structures) away from the abutment to the area next to the first support pier in the Los Angeles River channel. This phase would take approximately one to two months to complete.

G. Waverly Drive Bridge Rails

During construction of the replacement balustrades along the Waverly Bridge, one lane along Waverly Drive would remain open and would be controlled by flagmen. This phase would take approximately two months to complete.

Construction Phasing

The phases described above are distinct phases along a given viaduct structure or roadway that would occur at different times in the overall construction schedule to ensure that vehicular traffic and pedestrian access are maintained. Construction phasing is expected to take up to 2.5 years (30 months).

Construction of the proposed project and the phasing would be the subject of a traffic management plan (TMP). The TMP would provide details regarding lane configurations, work zones, phase durations, other phasing limits or requirements, and lane and turning requirements or restrictions, and could contain other requirements such as work hour limitations, and traffic control measures. Prior to construction, an approval from LADOT must be obtained in order to construct during rush hour, as described in Section 2.4.1 (Regulatory Setting) above. LADOT would review the TMP and must approve it prior to construction and issuance of the exemption to Executive Directive No. 2.

Staged construction in accordance with the approved TMP would be implemented with LADOT oversight and coordination. Vehicular traffic would remain open during the widening of the

Glendale Boulevard bridges over the Los Angeles River. The number of lanes along the viaduct complex could be reduced to two (one in each direction) during construction. Local access to adjacent neighborhoods and streets would be maintained, and the selected contractor would, as a standard practice, be required to notify and coordinate with emergency access providers to minimize impacts to the provision of emergency services. Contractors are required through standard contract provisions to coordinate with LADOT and prepare work area traffic control plans that meet LADOT requirements, including compliance with minimum traffic lane requirements, signage, striping, and other traffic control measures. Due to the complexity of the viaduct complex, a preliminary traffic-phasing plan has been prepared and reviewed by LADOT. This plan would be circulated with the bid documents and become part of the construction contract.

Some on-street parking along the frontage roads or main streets within the project work zone may be temporarily eliminated during construction, but on-street parking in the surrounding area would remain available. In particular, some on-street parking restrictions and access restrictions to through traffic may be required along the frontage roads (connecting Hyperion Avenue to Waverly Drive) during construction of the replica balustrades on the retaining walls.

The bus stops along Riverside Drive at Glendale Boulevard (Route 96) and along Glendale Boulevard along the I-5 overcrossing (Routes 92 and 201) would not require temporary relocation and would remain operational during construction.

Construction of Protective Barriers

As discussed in Chapter 1, prior to construction and demolition work along the Hyperion Avenue and Glendale Boulevard structures, protective barriers would be constructed along the exteriors of the structures to contain any debris, tools, or materials that could fall on sidewalks, roadways, property, or the Los Angeles River below. The placement of the protective barriers could require temporary detours or traffic lane restrictions during the evenings for one to two days at each location. The placement of the barriers during evening hours would minimize disruptions along key thoroughfares such as Riverside Drive and I-5. Any detours or traffic lane restrictions would require either LADOT or Caltrans approval and would be part of the TMP. Due to the short-term nature of related traffic restrictions, compliance with the TMP, compliance with Caltrans permits and the non-peak hour nature of the restrictions, construction of the protective barriers would not result in adverse impacts.

Due to their temporary nature, LADOT does not consider construction-related traffic impacts to be significant, as all work in streets requires LADOT approval and of necessity, would comply with traffic lane requirements, detour requirements, work area control plans, and other traffic requirements established by Caltrans.

2.4.3.2 Permanent Impacts

Traffic Congestion

The proposed project would have an adverse impact on traffic if it would result in substantial permanent reduction in the level of service of an intersection. For the purposes of this evaluation, LADOT's criteria (as applied to project operations) for acceptable reductions in operating conditions of intersections (increased congestion) within the City of Los Angeles are as follows:

- Volume/Capacity (V/C) ratio increase greater than or equal to 0.040 if final LOS is C,

- V/C ratio increase greater than or equal to 0.020 if final LOS is D,
- V/C ratio increase greater than or equal to 0.010 if final LOS is E or F.

The proposed project would involve seismic retrofitting and improvements of the viaduct complex. Although the proposed project would widen the Glendale Boulevard bridges (over the Los Angeles River) by approximately eight feet on each side, additional traffic lanes would not be added. The capacity of the existing roadway through the project area would not be changed and vehicle operations through nearby intersections would likewise not be affected. The proposed project would widen the existing Glendale Boulevard bridges to provide shoulders and slightly increased curb lane widths.

Project related activities involving the Hyperion Avenue portion of the viaduct complex would be limited to substructure seismic rehabilitation and the provision of replica balustrades, wider curb lanes, and median improvements, which would not result in increased capacity. The proposed project would install a K-rail type median along Hyperion Avenue on the viaduct complex to physically separate northbound and southbound traffic. This is a safety improvement that would prevent vehicles from crossing over into opposing traffic lanes.

In addition, the proposed project would reconfigure the northbound I-5 off-ramp to Glendale Boulevard and install a new signalized intersection at the terminus of the reconfigured off-ramp. This improvement would allow northbound I-5 motorists exiting at Glendale Boulevard to make left hand turns onto southbound Glendale Boulevard. This new turn movement would be an improvement over current conditions, which requires all exiting traffic to make a right turn onto northbound Glendale Boulevard. The reconfigured off-ramp is not expected to result in increased traffic on southbound Glendale Boulevard beyond what would normally occur because the off-ramp is not expected to result in increased off-ramp traffic. Table 2.4-3 shows the anticipated LOS at the reconfigured northbound I-5 off-ramp to Glendale Boulevard and nearby roadways that would occur by 2036. It should be noted that the proposed improvements to the viaduct complex and the I-5 ramps would not affect the amount of future traffic because the viaduct complex is not a traffic generator. (See Table 2.4-4, which shows future (2036) traffic volumes). Instead, the reconfigured off-ramp is expected to incrementally reduce traffic volumes on Glendale Boulevard due to the provision of a left turn signal at the intersection with Glendale Boulevard.

Table 2.4-3: Future (2036) Levels of Service

Location	A.M. Peak Hour	P.M. Peak Hour
I-5 Mainline, NB	F (3)	F (3)
I-5 Mainline, SB	F (3)	F (3)
I-5 NB Off-Ramp / Glendale Blvd Intersection		
No-Build, Unsignalized	B	D
W/ Project, Signalized (1 Left Turn + 1 Right Turn)	B	C
W/ Project, Signalized (1 Shared Left/Right + 1 Right Turn)	A	B
Glendale Boulevard, NB	A	A
Glendale Boulevard, SB	A	B
Hyperion Avenue, NB	B	C
Hyperion Avenue, SB	C	B

Source: MGE Engineering, Inc., January, 2012 (MGE, 2012)

Table 2.4-4: Future (2036) Traffic Volumes

Location	A.M. Peak Hour	P.M. Peak Hour	ADT
I-5 Mainline (NB+SB)	23,205	23,205	328,830
I-5 NB Off-Ramp	690	930	9,470
I-5 NB On- Ramp	430	395	5,205
Glendale Boulevard, NB	380	625	7,555
Glendale Boulevard, SB	970	995	10,260
Hyperion Avenue, NB	1,030	1,695	18,125
Hyperion Avenue, SB	1,660	1,375	17,825

Source: MGE Engineering, Inc., January, 2012 (MGE, 2012)

The forecasted future traffic in Table 2.4-4 includes a traffic growth rate of 1% per year, which is typical for traffic growth in a city and is acceptable to LADOT. As can be seen by looking at Tables 2.4-1 and 2.4-3, the reconfigured northbound I-5 off-ramp to Glendale Boulevard would operate at an improved level of service in the future. Both Glendale Boulevard and Hyperion Avenue would operate at a lower level of service (LOS B and C, respectively) than they currently operate at (both LOS B), but this is due to background traffic growth, not the proposed project. The proposed project would have the beneficial effect of reducing future traffic through this intersection by allowing direct left turns onto southbound Glendale Boulevard from the northbound I-5 off-ramp onto southbound Glendale Boulevard. Therefore, the impacts on traffic are not adverse.

Proposed I-5 Northbound Off-Ramp Realignment and Signalization

The proposed traffic signal for the I-5 northbound off-ramp terminus would be located approximately 160 feet south of the center of the Hyperion Bridge. This new intersection at the reconfigured off-ramp would also control southbound traffic on Glendale Boulevard. Existing sight distance on southbound Glendale Boulevard in the vicinity of the Hyperion Avenue overcrossing bridge is limited due to the presence of bridge abutments.

For southbound traffic on Glendale Boulevard approaching the new intersection at the reconfigured northbound I-5 off-ramp approach to Glendale Boulevard, the visual constraint of existing viaduct abutments adjacent to the left edge of southbound Glendale Boulevard would limit the sight distance to 230 feet (between the center of left lane and the right side signal pole). Based on the criterion of stopping sight distance, the resulting safe travel speed is 33 mph. This speed exceeds the safe speed (20 mph) recommended for the existing curve radius.

In addition to the potentially limited stopping distance for southbound traffic on Glendale Boulevard, motorists could have to come to a stop over a shorter distance after the blind left-turning curve beneath the Hyperion Avenue structure if there are traffic queues extending back from the intersection. These potential traffic hazards are considered adverse.

Because the proposed project would not permanently affect traffic volume/capacity relationships along the viaduct or surrounding area, would not increase operational congestion at intersections, would not be a traffic generator, and would not affect local or regional traffic service standards or congestion management requirements, impacts would be less than significant.

Bicycle Access

Adhering to the 2010 City of Los Angeles Bicycle Plan (refer to **Section 2.4.2.1**), the new shoulder on Glendale Boulevard can be used as a bicycle route. Though the proposed project will not include a bicycle lane on Hyperion Avenue, the project is consistent with the plan. Currently, Hyperion Avenue does not have a bicycle lane and Glendale Boulevard does not have a bicycle route. Bicycle use on the roadway is primarily used for transportation as a commuter route of the local transportation system.

The proposed project would also include a new bicycle access ramp from northbound Glendale Boulevard, just south of the bridge, to the bike path along the Los Angeles River. Currently, bicyclists south of the viaduct complex who wish to access the bike path must travel north on Hyperion Avenue or Glendale Boulevard, make a U-turn at Glenfeliz Boulevard, then head south on Glendale Boulevard to the bike path entrance just north of the I-5 on-ramp. With the new bicycle access ramp, bicyclists on northbound Glendale Boulevard would be able to access the bike path from northbound Glendale Boulevard. Additionally, bicyclists can access the bike path from southbound Glendale Boulevard using the existing bike ramp. Overall, the new bike path access from northbound Glendale Boulevard would allow bicyclists in the surrounding area an optional way to access the bike path. Therefore adverse impacts to bicycle access would not occur.

Pedestrians

Improvements to the viaduct complex would be in compliance with ADA requirements. The proposed project would consolidate the sidewalks along both sides of the Hyperion Avenue roadway on the viaduct complex into a single, wider sidewalk along the northwest side of Hyperion Avenue. The new sidewalk would be approximately one foot above the roadway as it extends along the retaining wall beneath the Waverly Drive Bridge. Hyperion Avenue is curved at this location, and the roadway would be banked to improve vehicle turning and to minimize drifting through the turn.

The existing staircases from Glendale Boulevard and Riverside Drive to Hyperion Avenue would remain operational and would continue to provide access to the new sidewalk from those streets. North of the point where the Riverside Drive staircase connects with Hyperion Avenue, the new sidewalk would be separated from southbound Hyperion Avenue traffic by a protective crash

barrier to minimize safety hazards to pedestrians and I-5 below (see the cross section in Figure 1-4 in Chapter 1).

At the north end of the consolidated sidewalk along the west side of Hyperion Avenue, a new pedestrian crosswalk would be added across southbound Glendale Boulevard. This crosswalk could be synchronized with the signal at Glenfeliz Boulevard to allow pedestrians to cross when traffic on Glendale Boulevard is minimized.

A weekday pedestrian count was conducted at the Hyperion Bridge in the vicinity of the Los Angeles River in May 2007 between 6:30 AM and 4:00 PM (ACT, 2007a). The purpose of the count was to determine the amount of pedestrian traffic along Hyperion Avenue. The count was performed at the westerly sidewalk in the vicinity of its end point where Hyperion Avenue southbound lanes split into the Glendale southbound viaduct and the Hyperion Avenue bridge crossing over the I-5 Freeway. Table 2.4-5 provides a summary of pedestrian activity on Hyperion Avenue. Pedestrian flow was concentrated in the afternoon, with 73% of the pedestrian traffic occurring between 2:30 PM and 4:00 PM. One possible explanation for the higher northbound pedestrian flow in the afternoon is that students who live in the Atwater Village area and attend Marshall High School are dropped off in the morning but must walk home in the afternoon. The proposed project would replace the existing 2-foot curbs along the retaining wall beneath the Waverly Drive Bridge with a wider consolidated sidewalk (on the west side), provide roadway banking along Hyperion Avenue beneath Waverly Drive (thereby decreasing the potential for vehicular drifting), and provide designated pedestrian crossings along Glendale Boulevard.

Table 2.4-5: Pedestrian Activity on Hyperion Avenue

		Direction	
		Northbound	Southbound
6:30AM - 4:00 PM	Total Count:	42	18
	Maximum Hourly Volume Both Directions (2:45 PM – 3:45 PM):	36	

The proposed project would provide replica railings along the staircase that extends from Hyperion Avenue to Glendale Boulevard. The open balustrade design would visually open the staircase from Glendale Boulevard and Hyperion Avenue. In addition, new lighting would be added to the vicinity of the staircase to increase pedestrian safety.

The proposed project's sidewalk consolidation and new pedestrian crosswalk would eliminate the need for pedestrians to jaywalk across Glendale Boulevard to and from Hyperion Avenue (at the north end of the viaduct), and would provide a protective barrier between pedestrians along Hyperion Avenue and adjacent traffic.

The Project would improve roadway banking beneath the Waverly Drive Bridge, which would lessen the potential for vehicular drifting as the Hyperion Avenue curves (beneath the Waverly Bridge). The railing restoration portion of the project (balustrade replication) would improve visual lines of sight to and from the staircase between Hyperion Avenue and Glendale Boulevard (the existing solid railing limits visual access to the staircase). The proposed project would represent an improvement in overall pedestrian safety over existing conditions. In addition, the

walkway along the LA River bank beneath the viaduct complex would provide additional pedestrian access, which is considered an improvement to the current pedestrian conditions.

The improvements, as described above, would be beneficial to pedestrians, and no adverse impacts to pedestrian traffic would occur.

Transit and Parking

The proposed project would not result in permanent elimination or relocation of bus stops, including the stops for Lines 92 and 201 along Glendale Boulevard at the I-5 overcrossing.

In addition, the proposed project would not require or result in the permanent elimination of on-street parking along Riverside Drive, Glendale Boulevard, or Hyperion Avenue.

2.4.3.3 Cumulative Impacts

Construction of the proposed project is would begin in summer 2014 and extend for up to 2.5 years (30 months) through the end of 2016. Potential development projects in the periphery would be constructed on private off-street parcels and would therefore not directly or physically affect the street systems in the project vicinity.

2.4.3.4 Avoidance, Minimization, and/or Mitigation Measures

The City's standard practices and contract specifications require the preparation of work area traffic control plans subject to approval by LADOT for in-street construction. This standard practice would also ensure pedestrian safety during construction.

The proposed project would result in adverse traffic impacts related to the limited sight and stopping distance along southbound Glendale Boulevard and the stop-controlled intersection at the reconfigured northbound I-5 off-ramp to Glendale Boulevard. Avoidance Measure **T-1** will avoid this impact.

- T-1:** The signalization for the realigned offramp intersection will include traffic control for southbound Glendale Boulevard traffic, north of the Hyperion Bridge overcrossing. Traffic control will include, but not limited to, signalization to allow traffic to stop north of Hyperion Bridge overcrossing rather than at the new realigned off-ramp intersection. The design, placement, and operation of the device would meet LADOT and Caltrans requirements.

Additionally, the proposed project would result in adverse pedestrian impacts during the concurrent construction of the southbound and northbound Glendale Boulevard bridges. Pedestrians would be prohibited access to the Glendale Boulevard bridges during construction. Pedestrians travelling along southbound Glendale Boulevard must take a detour that requires climbing a staircase connecting Glendale Boulevard with Hyperion Avenue, while pedestrians travelling along northbound Glendale Boulevard have no viable detour routes. The detour on southbound Glendale Boulevard would not be readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs. The path of travel would not be continuous and unobstructed, and does not meet ADA standards. Inaccessibility to the Glendale Boulevard bridges would eliminate a major pedestrian route that connects the Atwater Village and Silver Lake communities. However, Mitigation Measure **T-2** would mitigate this impact to pedestrian access:

- T-2:** Construct an alternate pedestrian crossing over the Los Angeles River across the existing Red Car piers (downstream of the viaduct complex) to connect the bike

path along the southwest side of the Los Angeles River with Glendale Boulevard on the northeast side of the river. The pedestrian crossing, in conjunction with the new access to the LA River bikeway from northbound Glendale Boulevard, would provide a detour route around the Glendale Boulevard bridges during construction. In order for this measure to serve as an effective detour for pedestrians, the pedestrian crossing and the new access to the bike path would have to be fully constructed and operational before commencing the widening of Glendale Boulevard Bridges.

2.4.4 No Build Alternative Impacts

Under the No Build Alternative, neither changes to the viaduct complex, nor other improvement such as the reconfiguration of the I-5 off-ramp to Glendale Boulevard would occur. As the No Build Alternative will not increase the traffic capacity, current and predicted LOS and volumes will be unaffected. Additionally, the No Build Alternative would not result in permanent impacts to traffic transportation/pedestrian and bicycle facilities; however, the No Build Alternative would not minimize the potential for damage to the viaduct complex from seismic events, and its indirect impacts to transportation through the closure of the viaduct complex.

2.5 Visual/Aesthetics

This section evaluates potential effects of the proposed project on the visual and aesthetic characteristics of visual resources in the project vicinity. The analysis is consistent with FHWA's *Guidance on Visual Impact Assessment for Highway Projects* (FHWA, 1981). Under these guidelines, the existing visual setting is characterized using the criteria of physical, historical, and cultural contexts, community attitudes, and perceptions of viewers and then analyzed for potential changes attributable to the proposed project. The characterization and analysis is accomplished using key viewpoints both from and encompassing the proposed project immediate impact zone.

2.5.1 Regulatory Setting

Applicable policies that provide aesthetic guidelines within the project area are described herein.

2.5.1.1 Federal

National Environmental Policy Act (NEPA)

NEPA as amended establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* [emphasis added] and culturally pleasing surroundings (42 U.S.C. 4331[b][2]). To further emphasize this point, the Federal Highway administration in its implementation of NEPA (23 U.S.C. 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Other Federal Regulations

Other federal regulations that could apply to the proposed project include:

- Title 23 U.S.C. Section 109 requires that possible adverse economic, social, and environmental effects relating to any proposed project in any federal-aid system be fully considered. Included among the factors to be considered are destruction or disruption of man-made and natural resources, aesthetic value, community cohesion, and the availability of public facilities and services.

The applicable federal and state statutes governing public artwork include:

- California Art Preservation Act (Civil Code Sections 987 *et. seq.*)
- Federal Visual Artists Rights Act (17 U.S.C. Section 101 *et. seq.*)

These laws require that an artist be given a 90-day written notice prior to the alteration, destruction, or removal of this artwork.

2.5.1.2 State

California Environmental Quality Act (CEQA)

CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state "with...enjoyment of aesthetic, natural, scenic and historic environmental qualities." (CA Public Resources Code Section 21001[b]) CEQA includes requirements for the consideration of project impacts to scenic resources, and requires that appropriate mitigation measures be included in a project with potential to adversely affect scenic resources, including within a scenic highway.

2.5.1.3 Local

City of Los Angeles General Plan Framework

The General Plan Framework is a comprehensive, long-range document containing purposes, policies, and programs for the development of Los Angeles. The plan is a strategy for long-term growth that sets a citywide context to guide the subsequent amendments of the City of Los Angeles' (City) community plans, zoning ordinances, and other pertinent programs. It responds to state and federal mandates to plan for the City's future. The Framework Element supersedes the citywide elements of the City's General Plan. The document contains seven mandated elements and several optional elements, including air quality, conservation, cultural resources, housing, infrastructure, noise, open space, public facilities and services, safety, and transportation. The framework also includes a land use element or plan for each of the 35 community plan areas within the City.

City of Los Angeles Community Plans

Community plans have been adopted as the City's Land Use Element to guide growth and development in each of its 35 community planning areas. The project area is located within the Northeast Los Angeles, Silver Lake-Echo Park-Elysian Valley, and Hollywood Community Plan areas. These Community Plans are intended to guide land use, circulation, and services within their respective communities. The community plans include recommendations for circulation, recreational/open space, and other public facility improvements to meet City policies and community goals.

Los Angeles River Revitalization Master Plan

Devastating floods during the first part of the 20th century prompted the U.S. Army Corps of Engineers and the Los Angeles County Flood Control District to construct the concrete-lined channel that now conveys the Los Angeles River for 47.9 miles of its 51-mile length. Over recent years, the City has coordinated with a number of agencies and interest groups in efforts to revitalize the river and its watershed.

In 2007, the City adopted the Los Angeles River Revitalization Master Plan (LARRMP), which provides a framework for restoring the river's ecological function and for transforming it into an amenity for residents and visitors. The LARRMP includes recommendations for improvements to the river corridor, recommendations at a policy level for managing public access and ensuring public health and safety, recommendations for a river governance and management structure, and recommendations for a short- and long-term priority projects and potential funding strategies.

City of Los Angeles Street Lighting Policy, Specifications, and Procedures

The City's Bureau of Street Lighting has developed policy, specifications, and procedures for installation and maintenance of street lighting in Los Angeles. The Bureau's standards are based on those of the Illuminating Engineering Society of North America RP-8-00. For historic bridges, the Bureau recognizes the importance of maintaining their historic character, including the light poles, bases and luminaires. Because of this, the Bureau reviews project plans to maximize compliance with roadway lighting standards, explore equipment options for meeting lighting requirements, and explore options for adding poles and luminaires where feasible (D. Nguyen, personal communication, October 5, 2007). These policies include aesthetic requirements for color, spacing, and installation of communications equipment on lighting poles.

2.5.2 Affected Environment

The project area is generally urban residential in character with commercial uses scattered along the primary streets. The project site is located within the Los Angeles Narrows, which is a steep sided valley that connects the San Fernando Valley with the Los Angeles Basin. The viaduct complex spans a portion of this valley, which includes the Los Angeles River, I-5, and Riverside Drive. The viaduct complex is an important feature within the visual viewshed of the project area, and can be observed from the residences along the bluff to the east and west of the Complex, by motorists traveling along Riverside Drive, I-5, and Glendale Boulevard, and from numerous vantage points along the Los Angeles River.

At the north end of the viaduct complex, the landscaped median provides access to the left bank of the Complex and is a transitory open space providing access to the left bank of the Los Angeles River. As indicated on the Transportation Element of the City of Los Angeles General Plan, Glendale Boulevard from the Los Angeles River north to the City of Glendale is designated as a Scenic Highway. Riverside Drive is also designated as a scenic highway from Los Feliz Drive south to Stadium Way.

In addition to the visual experience of the viaduct complex itself, the structure also provides a corridor to view the visual features of the surrounding geography. As an example, motorists and pedestrians traveling north near the south end of the Complex can view the San Gabriel Mountains in the background, Forest Lawn (Glendale) and Atwater Village in the middle ground, rows of the abutment Pylons along Hyperion Avenue in the foreground.

2.5.2.1 Viewshed and Viewer Sensitivity

The viewshed includes all areas where physical changes associated with the proposed project can be seen from a sensitive viewpoint, or where other sensitive views could be affected. For purposes of this visual analysis, the viaduct complex can be viewed from points along the Los Angeles River (east and west of the structure) and from locations along the bluff near the south end of the Complex. In addition, portions of the viaduct complex can be viewed by both pedestrians and motorists on Hyperion Avenue and both northbound and southbound Glendale Boulevard.

The sensitivities of different types of viewers vary depending upon their activity, duration of viewing opportunity, and their awareness of and familiarity with the surrounding environment. The following describes the comparative sensitivity of various types of viewers in decreasing order of sensitivity.

Residents

Residents, particular those with views of the viaduct complex from their homes, would be most sensitive to changes due to the relative permanency of their viewing experience and their prolonged duration of viewing opportunity.

Workers

Employees in the project area would be considered sensitive viewers because they may have frequent opportunities to experience views of the viaduct complex from their workplaces, and may routinely enjoy the view corridors in the project area.

Pedestrians

Pedestrians would be considered sensitive viewers, as they would be directly within the viewshed and would have lengthy exposure to views.

Bicyclists

Bicyclists may be those who either live in the project vicinity or recreate or commute through the view corridors in the project area on a regular basis. The sensitivities of bicyclists to views would be less than those of pedestrians because passage through the project area would be quicker and the attention of bicyclists would be primarily focused on road conditions, especially while on the viaduct complex.

Regular Motorists

Regular motorists may be those who either live in the project vicinity or commute through the view corridors in the project area on a regular basis. The sensitivities of regular motorists to views would be less than those of pedestrians because passage through the project area would be quicker and the attention of motorists would be primarily focused on road conditions.

Occasional Motorists

Occasional motorists are typically non-local or non-commuter tourists or visitors, and are considered less sensitive than regular motorists due to the infrequent nature of their visits.

2.5.2.2 Visual Resources and Quality at Key Viewpoints

The viewshed is comprised of visual resources upon which the visual experience is based. For purposes of this study, visual resources were identified based on visual prominence within the viewshed, and upon whether they could affect or be affected by the proposed project.

Visual resources in the project area include the existing viaduct complex, which is eligible for listing in the National Register of Historic Places, and is a City Cultural Monument.

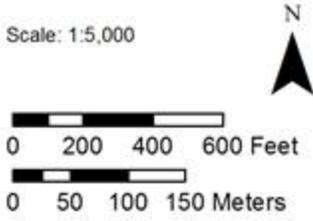
As mentioned earlier, the existing viaduct complex is visible from various points in the viewshed, including the residences along the bluff on either side of the south end of the viaduct complex, from the Los Angeles River, and from various streets in the project area. Viewpoints of the identified visual resources were established within the viewshed and were selected to be representative of the visual resources likely to be viewed by the viewer types described above. To best assess the change in visual quality of the identified visual resources, the existing visual quality of the viewpoints was rated using a scale (low, low to moderate, moderate, moderate to high, and high) to assess three criteria: *vividness*, *intactness*, and *unity* (FHWA, 1981). These criteria are described below.

- **Vividness** is the visual power or memorability of landscape components as they combine in striking or distinctive patterns. For example, the landscape as it appears to contrast with the surrounding development can contribute to the vividness of the view. However, vividness also depends on whether either element can be considered striking or distinctive.
- **Intactness** is the integrity of the visual environment and its freedom from encroaching elements. It is measured by the concentration of development within an area. For example, scattered development marked by parcels of vacant unmaintained land would have a low intactness rating and compromise visual integrity.
- **Unity** is visual coherence and compositional harmony of the landscape when considered as a whole. The mixture of natural elements and human-made alterations is considered together in assessing unity.



Source: Bing Maps, 2009; Ultrasystems Environmental, Inc, 2011

November 7, 2011



Glendale-Hyperion Viaduct Complex

Figure 2-5: Key View Map

Viewpoint 1

The same rating scale and criteria are used to assess potential changes to views or resources resulting from the proposed project. Changes are assessed in terms of the sensitivity of the viewer groups. Figure 2-5 shows the locations and directions of the key viewpoints analyzed.

Viewpoint 1 is a view looking north at the existing viaduct complex from a bluff to the southeast of the viaduct complex. This view, shown in Figure 2-6, is typical of what is afforded from residences situated along the bluff in this area. However, this viewpoint also represents a view accessible by all viewer groups. This view is composed of residential backdrop elements, with the viaduct complex extending from the foreground and merging with the background. Other foreground elements include vegetation. The Los Angeles River is also a prominent element of this view. The vividness of this view is considered high, as the viaduct complex's architectural features such as the abutment pylons and curvature stand out visually as the Complex spans I-5 and the Los Angeles River. The intactness of this view is considered high, as it is comprised of distinct visual elements (residences, the Los Angeles River, I-5, and the viaduct complex itself) that are relatively free of encroaching features.

Lastly, the unity of this view is considered high as the viaduct complex ties the linear elements (Los Angeles River and I-5) together into a single coherent composition that balances urban structures and natural features such as vegetation.

Viewpoint 2

Viewpoint 2 is a northeastern view of the viaduct complex from the bluff just west of the Complex. This view, shown in Figure 2-7, is representative of views available from the back of residences along the bluff west of the Complex. The primary visual elements in this view are a short section of the viaduct, several abutment pylons, and portions of the Los Angeles River. The vividness of this view is considered moderate to high, because although the view of the viaduct complex is rather limited, the abutment pylons are striking. The intactness of this view is considered moderate rather than high due to the presence of standard and high voltage power lines that encroach into the views of the viaduct. Lastly, the unity of this view is considered low to moderate because it lacks harmonious compositional unity.

Viewpoint 3

Viewpoint 3, depicted in the top photograph in Figure 2-8, is along a corridor looking northwest toward the existing viaduct complex from the west bank of the Los Angeles River (east of Glendale Boulevard). This view is typical of what is afforded by pedestrians and bicyclists travelling on either banks of the Los Angeles River. In addition, this view also represents the view that motorists see when travelling on the northbound I-5 off-ramp. The dominating element in this view is the northbound Glendale Boulevard portion of the viaduct complex and the hydraulic structures that channel the high water flows in the Los Angeles River. The vividness of this view is considered high, as the design features of the viaduct are distinct and memorable, with minimal distracting elements. The intactness of this view is considered high because the view of the viaduct is free of encroaching elements. Lastly, the unity of this view is considered high, as the design elements of the viaduct (arches and piers, abutments, and lampposts) are visually coherent and compositionally harmonious.

Viewpoint 4

Viewpoint 4, shown in the top photograph in Figure 2-9, looks south along the Hyperion Avenue roadway existing viaduct complex towards the Waverly Drive Bridge from approximately the

Riverside Drive overcrossing. The primary elements in this view are the hillsides that taper down to the Waverly Bridge, the abutment pylons, and the lampposts. The vividness of this view is considered moderate, because although the hillside and viaduct complex features are pleasant, they are not striking or overly memorable. The intactness of this view is considered moderate because the view of the viaduct complex as it approaches the low point in the hillside is slightly disrupted by the encroaching elements of overhead power lines and power poles to the right of the viaduct. The unity of this view is considered moderate, as these encroaching elements break up the compositional harmony of the viaduct complex – hillside relationship.

Viewpoint 5

Viewpoint 5, shown in Figure 2-10, is a view looking north at the southeast corner of the existing viaduct complex. This view is typical of what is afforded from residences situated along the bluff in this area. This view is composed of residential backdrop elements, with the viaduct complex extending from the foreground and merging with the background. Other foreground elements include vegetation. The Los Angeles River is also a prominent element of this view. The vividness of this view is considered high, as the viaduct complex’s architectural features such as the abutment pylons and curvature stand out visually as the complex spans I-5 and the Los Angeles River. The intactness of this view is considered low-to-moderate, as it is comprised of distinct visual elements (residences, the Los Angeles River, I-5, and the viaduct complex itself), but the power lines encroach onto the otherwise scenic area. Lastly, the unity of this view is considered moderate as the viaduct complex ties the linear elements (Los Angeles River and I-5) together into a single coherent composition that balances urban structures and natural features such as vegetation.

Viewpoint 6

Viewpoint 6, as shown in Figure 2-11, is a view looking west at the southeast corner of the viaduct complex from the Los Angeles River Greenway Trail. This view is typical of what is afforded by pedestrians, bicyclists and other users of either bank of the Los Angeles River. In addition, some residences located east of Hyperion Avenue and north of the Los Angeles River may also have some views of this prospect. The viaduct complex and Los Angeles River, including the bike path and trail along the banks of the river, as well as the various plants and piers, are the dominant components, and make up the foreground and extends to the middle ground of this view. The sporadic residences nested into the hills of Griffith Park frames the backdrop of this view. The vividness of this view is considered high, as the viaduct complex’s architectural features such as the abutment pylons and curvature stand out visually as the complex spans the Los Angeles River. The intactness of this view is considered low-to-moderate, as it is comprised of distinct visual elements (residences, Griffith Park, the Los Angeles River, and the viaduct complex itself), but the power lines encroach onto the otherwise scenic area. Lastly, the unity of this view is considered moderate as the viaduct complex ties the river and hillside together harmoniously.

2.5.3 Environmental Consequences

2.5.3.1 Temporary Impacts

Temporary minor degradation of viaduct complex views would accompany project construction resulting from the presence of construction equipment within the work zones. These effects

would vary in intensity throughout the construction duration (up to 2.5 years). These effects would be temporary in nature as the construction would occur in a staged manner. Since construction in urbanized areas is a common and necessary occurrence, these effects are not considered significant.

In addition, although construction would occur along the viaduct complex along Glendale Boulevard and at the abutments adjacent to Riverside Drive, construction would not affect the resources that form the basis for their designation as scenic highways. No other temporary visual impacts other than those associated with construction are anticipated.

2.5.3.2 Permanent Impacts

In evaluating the existing aesthetic conditions in each of the areas from which views of the proposed project might be important, the evaluative framework developed by the Federal Highway Administration and published as *Guidelines on Visual Impact Assessment for Highway Projects (VIA)* (FHWA, 1988) was used. Under these guidelines, aspects of the visual experience of proposed physical changes to the environment are considered. Such aspects include physical, historic, and cultural contexts; attitudes and perceptions of viewers; and key points of view where visual impacts are most applicable.

As described above, some of the specialized terms that the VIA approach uses to characterize existing visual conditions include vividness, intactness, and unity. For the purposes of this analysis, aesthetic impacts are evaluated based on changes to the overall visual character and quality of a landscape and the likely effect of the project on viewer response. Considerations include impact to views, shade and shadow effects, and nighttime illumination.

The proposed project would provide or modify the following visual elements of the viaduct complex and its surroundings:

- Consolidate the sidewalks along both sides of the Hyperion Avenue roadway into a single, wider sidewalk on the west side of Hyperion Avenue,
- Add a dividing barrier along the roadway center between opposing traffic on Hyperion Avenue,
- Provide crash barriers along the east and west sides of Hyperion Avenue,
- Replace the existing covered rails along Hyperion Avenue with new rails that replicate the original balustrade design
- Widen the Glendale Boulevard bridges over the Los Angeles River (including new replica balustrades),
- Replace the existing railing system along the Waverly Drive Bridge with new balustrades that replicate the original balustrades, and
- Reconfigure the northbound I-5 off-ramp to Glendale Boulevard and add a new signalized intersection.
- As a mitigation measure, construct an alternate pedestrian crossing over the Los Angeles River across the existing Red Car piers to connect the bike path along the southwest side of the Los Angeles River with Glendale Boulevard on the northeast side of the River.

Views

The proposed project would provide new rails that replicate the original balustrade design. This is seen as an improvement over the existing covered railing system. The existing covered rails are damaged and in a state of disrepair. Although the proposed project would also include crash-resistant protective barriers between the travel lanes and restored balustrades along Hyperion Avenue, as well as a center divider which would partially conceal the restored railing system, the overall effect would be an improvement in the overall visual character of the viaduct complex because portions of the new balustrades would be visible from Hyperion Avenue, and fully visible from external viewpoints. Figures 2-6 through 2-9 show the existing viaduct complex from six different viewpoints and photo simulations of the same views following implementation of the proposed project. As can be seen in Figures 2-6 and 2-7, which represent views of the viaduct complex from residences overlooking the complex, the new balustrades restore an historic detail that adds vividness and complexity to the current view characteristics of the viaduct complex. Figure 2-8 shows a view of the exterior of the northbound Glendale Boulevard Bridge (over the Los Angeles River) from the bike path along the west bank of the river. Again, the new replica balustrades clearly provide an improvement to this view of the bridge. In addition, although the abutment pylons have been relocated approximately eight feet to the east, that relocation does not appreciably alter the view of bridge or the view composition.

Figure 2-9 illustrates a future view of a pedestrian walking south on Hyperion Avenue. A median barrier will be constructed along Hyperion Avenue to facilitate the safety improvements associated with modification to the roadway superelevation. The barrier design will utilize a standard barrier such as type 60S or Type 60SC. A Type 60S is approximately 24 inches at the base, and 32 inches high, and a Type 60SC barrier varies in size. A Type 732 concrete barrier, with a modified tubular hand railing mounted to the top would be constructed between the widened sidewalk and the southbound traffic lanes on Hyperion Avenue. The barrier will be 2 feet-8 inches (32 inches) above the pavement edge of traffic, and the tubular hand railing will be 42 inches above the sidewalk. Although the crash barrier would extend along the east side of Hyperion Avenue and would partially block observation of the new replica balustrades when viewed from Hyperion Avenue, portions of the balustrades would still be visible. In addition, the new balustrades would improve the views experienced by pedestrians walking along Hyperion Avenue by adding historic detail where none currently exists (the existing rails are covered). One of the key aesthetic benefits of the new replica balustrades would be that the open spaces between the balustrades makes the railing less suitable as a canvas for graffiti, and the patchwork of painted-over graffiti on the existing rails would likely be reduced by the proposed project.

Figures 2-10 and 2-11 illustrates pedestrian crossing that would connect from the existing bike path along the right bank of the Los Angeles River, cross the river utilizing the existing Red Car piers, and connect to northbound Glendale Boulevard. This pedestrian crossing is desired by the community, and acts as a mitigation measure to maintain pedestrian access across either bank of the Los Angeles River during construction. The crossing will be constructed of high-strength galvanized steel. Steel checker plate deck can be paved with asphalt or covered with an anti-skid surface. The visual appearance of the steel pedestrian bridge does not demonstrate optimal compatibility with the concrete viaduct complex, and slightly lessens the compositional harmony between the landscape elements. However, non-reflective neutral colors of paint will be used on the crossing to blend with its setting. The pedestrian crossing is functionally consistent with the

landscape unit, and does not intrude onto the aesthetic features of the viaduct complex. The architectural elements of the pedestrian crossing blend harmoniously with the viaduct complex. Likewise, the intactness of the landscape unit is unaffected by the pedestrian crossing. Therefore, the pedestrian crossing would not result in significant visual impacts of the project area. Construction of the pedestrian overcrossing over the Los Angeles River utilizing the existing Red Car piers would require that the piers to cut down to approximately the elevation of the River banks. Permitted by the Flood Control District and painted in 2005, the "Revisit the Red Car" Mural is currently situated on the wall surface of a pier on the left bank of the LA River. It would be removed to accommodate the pedestrian overcrossing and replaced in a nearby location, as approved by the community. Therefore, the community would still have visual access to this mural and the purpose of the mural could still be maintained.

The proposed project would strengthen the spandrel columns by reinforcing them with fiber wrap and covering them with shotcrete. These improvements would add approximately four inches of thickness to the spandrel columns (between 11-19 percent thicker) but are not expected to appreciably change the appearance of the columns or side views of the complex's arch support structures because all spandrel columns would be reinforced and because the general form and appearance would not be altered. Although the Secretary of the Interior Standards for the Treatment of Historic Properties require that the added material be distinguished from the original fabric to facilitate identification of new material, the color of the reinforcing wrapping would be matched to the existing concrete to maintain the original appearance, and another non-visible marking would be utilized to identify the new material.

The visual changes to the viaduct complex resulting from the proposed project are expected to improve the memorability of views of the viaduct complex (restoration of the original balustrade railing characteristics). As a mitigation measure to accommodate the community's desire to maintain pedestrian access across the Los Angeles River during construction, the proposed project would install a steel-construction pedestrian bridge. The pedestrian bridge would not significantly impact the integrity of the visual environment, and would not significantly disrupt the visual coherence of the landscapes. Consequently, the proposed project would not result in adverse aesthetic impacts from changes to the overall visual character and quality of a landscape.

Existing View – Hyperion Viaduct looking north



Proposed View



Figure 2-6: Viewpoint 1

Source: CH2M Hill, 2006

Existing View – Hyperion Viaduct over Riverside Drive



Proposed View



Figure 2-7: Viewpoint 2

Source: CH2M Hill, 2006

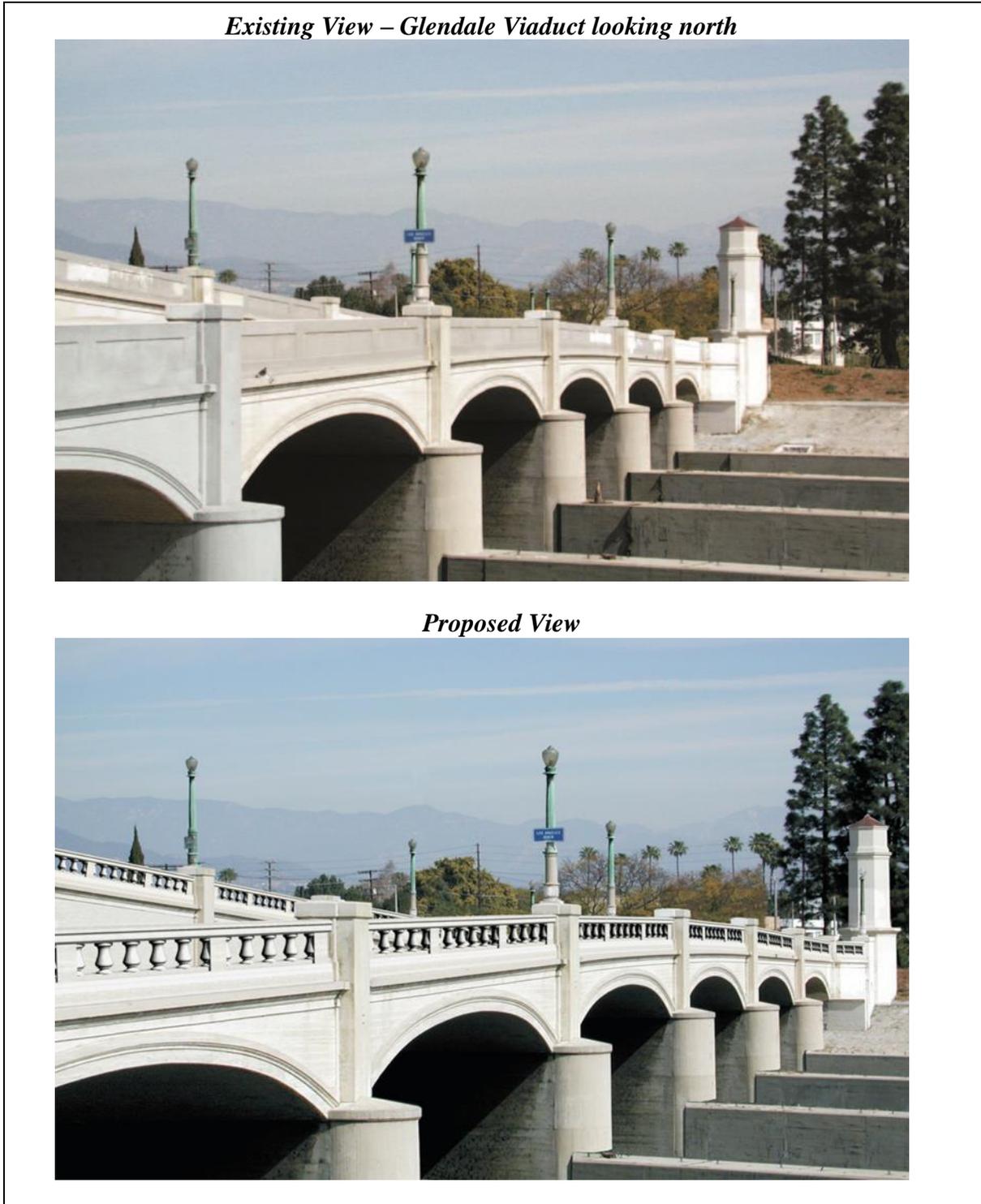


Figure 2-8: Viewpoint 3

Source: CH2M Hill, 2006

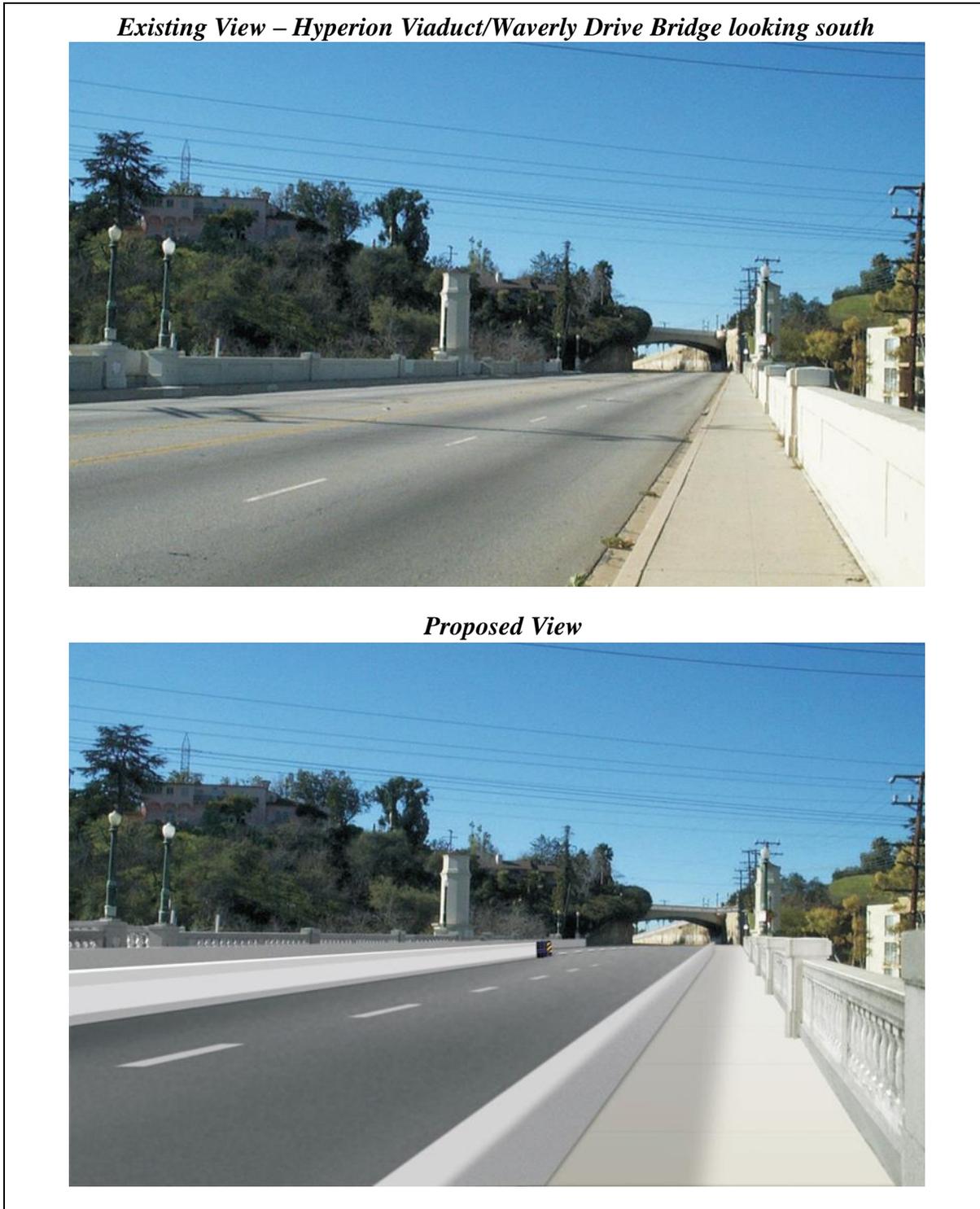


Figure 2-9: Viewpoint 4

Source: CH2M Hill, 2006

Existing View – Glendale Viaduct looking north



Proposed View (Pedestrian Crossing Only)



Figure 2-10: Viewpoint 5

Source: UltraSystems Environmental, 2011

Existing View – Glendale Viaduct looking south



Proposed View (Pedestrian Crossing Only)



Figure 2-11: Viewpoint 6

Source: UltraSystems Environmental, 2011

Shade and Shadows

The proposed project would not change existing shade or shadow characteristics of the viaduct complex, as the size and scale of the complex's structural elements and architectural features would not be substantially changed.

Lighting

The proposed project would refurbish and reuse the light poles currently present on the viaduct complex. Additional electroliers (light poles) may be added to meet the City's currently adopted lighting standards at the roadway, as required by the City's Bureau of Street Lighting. In addition, existing high pressure sodium fixtures shall be upgraded to LED fixtures to reduce energy usage and carbon emissions. Existing high voltage series circuits shall be converted to low voltage multiple circuits. New conduits and wires shall also be installed.

Scenic Highways

The proposed improvements to the viaduct complex would not affect the landscaped median along Glendale Boulevard and would therefore not affect its scenic highway status. Similarly, the proposed improvements would not affect Riverside Drive or its scenic highway designation, as no physical changes to Riverside Drive would occur and Riverside Drive would continue to serve as a linkage between Griffith Park and Elysian Park.

2.5.3.3 Cumulative Impacts

There are no related projects that could result in significant cumulative impacts in the project area, and therefore, no cumulative impacts related to visual aesthetics are anticipated to occur as a result of the proposed project.

2.5.3.4 Avoidance, Minimization, and/or Mitigation Measures

Neither avoidance nor mitigation measures are required or proposed.

2.5.4 No Build Alternative Impacts

The No Build Alternative would result in no new or additional impacts to visual/aesthetic quality relative to existing conditions.

2.6 Cultural Resources

This section evaluates potential effects of the proposed project on cultural resources.

2.6.1 Regulatory Setting

“Cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, the Federal Highway Administration (FHWA), State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the Advisory Council’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 CFR 327) (July 1, 2007).

The Archaeological Resources Protection Act (ARPA) applies when a project may involve archaeological resources located on federal or tribal land. ARPA requires that a permit be obtained before excavation of an archaeological resource on such land can take place.

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the “use” of land from historic properties. See Appendices B1 and B2 for specific information regarding Section 4(f).

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources (CRHR). PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places (NRHP) listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

2.6.2 Affected Environment

The viaduct complex, comprised of six structures, was designed and constructed by the City of Los Angeles under the direction of bridge engineer Merrill Butler and bridge designer A.L. Enger. The complex was preceded by a single Glendale Boulevard bridge, which was the main access across the Los Angeles River until, by 1924, its limitations created a bottleneck of traffic. To fix this problem, the designers created a three part viaduct that carried traffic of both

Glendale Boulevard and Hyperion Avenue over the river, provided a junction of the two streets to minimize cross traffic, and eliminated the street railway crossing. All this was accomplished with a structure that is notable for its restrained use of neo-classical forms. The multi-structure complex consists of:

1. Waverly Drive Bridge (Bridge Number 53C-1179)
2. Hyperion Avenue Bridge over Riverside Drive (53C-1882)
3. Hyperion Avenue Bridge over I-5 (53-1069)
4. Hyperion Avenue viaduct over the Los Angeles River (53C-1881)
5. Southbound Glendale Boulevard Bridge over the Los Angeles River (53C-1883)
6. Northbound Glendale Boulevard Bridge over the Los Angeles River (53C-1884)

The viaduct complex was determined eligible for listing by the NRHP as part of the Caltrans Historic Bridge Inventory of 1986,³ which was confirmed in the Caltrans Historic Bridge Inventory Update in 2002-2004. The viaduct complex is noted for its innovative design techniques and as a bold engineering achievement. It is also noteworthy for its aesthetic quality and use of neo-classical forms. The structure's formal determination of NRHP eligibility makes it automatically listed in the CRHR. Based on its eligibility of the NRHP, the viaduct complex is also a historic site protected under Section 4(f) of the Department of Transportation Act of 1966.

All of the bridges were originally constructed between 1927 and 1929 utilizing a decorative railing system that included balustrades. However, the balustrades developed significant cracking and concrete spall and, as part of a railing repair project in 1962, significant segments of the balustrade railing were covered with gypsum board and gunite reinforced with wire mesh. As part of the repair process, the sides of the top rails were chipped or broken, where the covering activity was accomplished, to improve adhesion of the gunite material (see Section 1.3.1.1.1 for further details).

2.6.2.1 Waverly Drive Bridge

The bridge carrying Waverly Drive over Hyperion Avenue is an earth-filled reinforced concrete structure that is 65 feet long. It is two lanes wide, with a roadway and sidewalks on both sides of the bridge. Enclosing the bridge are two concrete-covered railings which repaired the original baluster railing. Cast bronze lanterns with glass globes are set at each corner of the bridge.

2.6.2.2 Hyperion Avenue Bridge over Riverside Drive

The Hyperion Avenue viaduct over Riverside Drive is a reinforced concrete arch bridge that includes three arch spans with a total length of 429 feet. This viaduct accommodates four traffic lanes and is 63 feet wide. Support for the structure is provided by two reinforced concrete abutments and two reinforced concrete piers. The main span is an open spandrel arch measuring 135 feet. Two additional filled spandrel arches, each measuring 118 feet, make up the length of the bridge. The structure has concrete-covered railings with decorative inset panels and a smooth concrete finish, and this covering was performed to repair the original baluster railing system. Two reinforced concrete octagonal-shaped pylons, capped with tile copings, are located at the east end of the main span.

³ Since updated and available online at <http://www.dot.ca.gov/hq/structur/strmaint/historic.htm>; Portia Lee, *Historic American Engineering Record, Glendale-Hyperion Viaduct, HAER No. CA-272*

2.6.2.3 Hyperion Avenue Bridge over I-5

The Hyperion Avenue viaduct over I-5 is a single span, reinforced concrete, open spandrel arch that is 135 feet long. It carries four lanes of traffic and is 71 feet wide with cantilevered walkways flanking the roadway. As with the Waverly Drive Bridge and Hyperion Avenue Bridge over Riverside Drive, the original baluster railings have been covered with concrete. The current railings have inset panels and a smooth concrete finish. Octagonal shaped pylons with tile copings along the tops are located at each end of the span. Decorative bronze-cast lanterns and glass globes, similar to those on the other spans, are set on the railings.

2.6.2.4 Hyperion Avenue Viaduct over the Los Angeles River

Composed of nine spans with a total length of 518 feet, the Hyperion Avenue viaduct over Los Angeles River Bridge segment of the bridge complex is composed of reinforced concrete spandrel arches. The bridge carries four lanes of traffic and is 68 feet wide. It is supported by three reinforced concrete abutments, each crowned with octagonal pylons, and seven reinforced concrete piers. The main span of the bridge is 68 feet wide and each of the eight additional arch spans is 48 feet wide. Cantilevered walkways flank the roadway. Solid reinforced concrete railings having decorative inset panels and a smooth concrete finish are present. These railings are identical to those found on both Waverly Drive and other portions of the viaduct complex along Hyperion Avenue.

2.6.2.5 Southbound Glendale Boulevard Bridge over the Los Angeles River

The southbound Glendale Boulevard Bridge over the Los Angeles River supports two traffic lanes, and consists of six reinforced concrete arch spans with a total length of 316 feet. Each is a filled spandrel arch 48 feet long. Reinforced concrete abutments and piers support the bridge. The railings are concrete-covered with inset panels and a smooth concrete finish (similar to all components of the complex). A concrete pylon is located at each terminus of the bridge. The pylons are hexagonal in shape, each topped with tile coping. Decorative lanterns with glass globes are set on the railings.

2.6.2.6 Northbound Glendale Boulevard Bridge over the Los Angeles River

The northbound Glendale Boulevard Bridge over the Los Angeles River segment of the bridge complex is identical to the southbound structure just discussed.

2.6.2.7 National Register Eligibility

As a group, the six viaduct structures that make up the viaduct complex are eligible for listing in the NRHP under Criteria A and C, and it retains sufficient historic integrity to convey its significance. The viaduct complex is an important element in the development of transportation systems in Los Angeles during the early twentieth century, especially those that cross the Los Angeles River (JRP, 2008). The viaduct complex was one of a group of bridges designed not only to increase vehicular traffic capacity across the river, but also to allow residents to travel between Los Angeles and surrounding cities. The Glendale-Hyperion viaduct is also a significant example of a Neo-classical designed structure, and as a significant work of the Los Angeles Bureau of Engineering (LABOE) (JRP, 2008). The bridges that comprise the viaduct integrate many elements of a classically influenced design, including its proportions and its restrained architectural treatment with use of arches, towers, original baluster railing, and light standards. Figure 2-12 shows historic photographs of the viaduct complex. The boundary of the historic property is the six structures that comprise the Glendale-Hyperion viaduct complex.

The viaduct complex's character-defining features include its careful choice and placement of concrete arch forms; simple, elegant architectural treatment; and overall reliance on harmonious proportions. Within the overall design of the bridge, the use of both open spandrel and filled spandrel concrete arches is character defining, as it represents the careful attention LABOE staff placed on designing an aesthetically appealing structure, in addition to providing a careful engineering solution. LABOE paid close attention to the overall balance and weight of the composition, striving to create harmonious proportions, by a combination of the arch types and abutment placement.

Complementing the concrete arches are decorative features such as the walkways, belvederes, lanterns and globes, pylons, and the bridges' classical decorative features such as molding, brackets, and inset molded panels. Pylons/towers were also chosen as an architectural design element to unite the bridge's curves, ancillary roadways, river, and highway crossings into one composition.

In combination with a simple, open baluster railing, the sparse architectural details led to a cohesive design for the structure. As noted, the railing was later enclosed in concrete along the bridge and thus the original balustrade design detail was lost.

In addition to the structure's NRHP-eligibility, the Glendale-Hyperion Viaduct is City of Los Angeles Historic Cultural Monument #164, designated in 1976. The viaduct complex was also included in a Caltrans study of Los Angeles Monumental Bridges prepared in 2004. Of the 45 bridges evaluated as part of this study, 29 – including the Glendale-Hyperion Viaduct – appeared to be significant as City of Los Angeles monumental bridges. The study concluded that these bridges are significant for their association with the LABOE's bridge program in the early to mid-twentieth century, but that they do not constitute a historic district, as defined by National Park Service guidelines for applying the NRHP criteria which define a historic district as having a physical concentration of buildings, structures, objects, or sites with importance derived, in part, from that concentration of resources as a unified entity. The study concluded that bridges are dispersed throughout the city and thus cannot be categorized as a historic district. Caltrans submitted this study to SHPO and received concurrence on its findings in 2005.⁴

⁴ JRP Historic Consulting for Caltrans, City of Los Angeles Monumental Bridges, 1900-1950, May 2004.

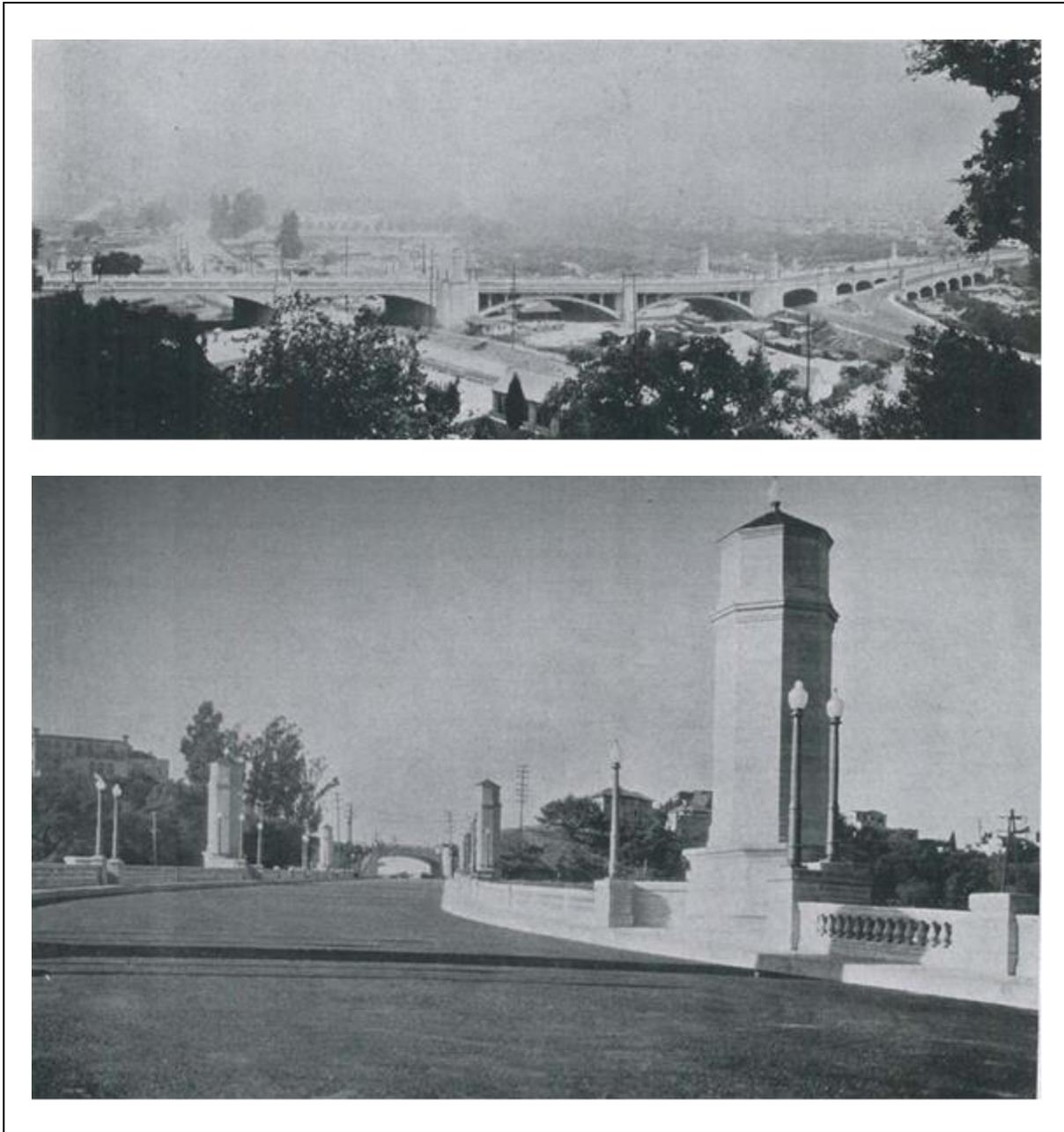


Figure 2-12: Historic Viaduct Photographs

Top Photo: General View of Glendale-Hyperion, looking north.

Bottom Photo: Ddeck view, looking southwest.

Both images are taken from Municipal Arts Commission, Los Angeles, Annual Reports, 1921-1929, 60-61.

2.6.3 Environmental Consequences

Criteria of Adverse Effect

The definition of effect is contained within 36 CFR Part 800: “*Effect* means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register.” An adverse effect occurs “when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association...Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.”⁵

Examples of adverse effects may include, but are not limited to, the following:

- i. Physical destruction of or damage to all or part of the property;
- ii. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary’s Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- iii. Removal of property from its historic location;
- iv. Change of the character of the property’s use or of physical features within the property’s setting that contribute to its historic significance;
- v. Introduction of visual, atmospheric or audible elements that diminish the integrity of the property’s significant historic features;
- vi. Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- vii. Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property’s historic significance.⁶

Of the seven effects listed above, under 36 CFR 800.5(a)(2), effects (iii), (vi), and (vii) are not applicable to this project. Under 36 CFR 800.5(a)(2)(iii), proposed work would not result in this property being removed from its historic location. Also under 36 CFR 800.5(a)(2)(vi), this property does not suffer from neglect and as a result this effect is not applicable. Finally, under criterion (viii), the viaduct complex is not federally owned nor would it change ownership as a result of this project.

As contained in Section 15064.5 of the CEQA guidelines, substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired.

⁵ 36 CFR 800.5(a)(1).

⁶ 36 CFR 800.5(a)(2)(i through vii).

2.6.3.1 Temporary Impacts

Construction activities associated with implementing seismic reinforcement and other bridge improvements would result in construction noise, dust, and traffic lane restrictions, but such effects would not diminish the historic integrity of the viaduct complex. No other temporary impacts to historic properties/historical resources, including the bridge structures, are anticipated from the proposed project.

2.6.3.2 Permanent Impacts

The NHPA Section 106 regulations, in 36 CFR 800.4(d)(2), state that if there are historic properties within the Area of Potential Effect (APE) of a federal undertaking, the agency official shall assess adverse effects, if any, in accordance with the Criteria of Adverse Effect defined in 36 CFR 800.5. The viaduct complex is a protected resource under Section 4(f) of the Department of Transportation Act, and is analyzed in Appendix B1 of this IS/EA.

As discussed below, the City's proposed project would be designed to avoid and minimize adverse effects to the bridge, a historic property, but several crucial elements of the project would result in an adverse effect.

The architectural APE for the proposed project includes the public right-of-way that encompasses the boundaries of the viaduct complex with the widened Glendale Boulevard bridges over the Los Angeles River and the piers for the former Red Car line. Within the APE, the viaduct complex is the only historic property under Section 106 and historical resource for the purposes of CEQA compliance.

The viaduct complex is a protected resource under Section 4(f) of the Department of Transportation Act. The Section 4(f) Programmatic Evaluation of the viaduct complex is included as Appendix B1 of this IS/EA. The pedestrian crossing that would be constructed as a mitigation measure would not utilize the viaduct complex. Moreover, the construction of the pedestrian crossing over the Red Car piers would not result in any impact to the historical significance of the viaduct complex because the piers are remnants of a separately constructed and demolished Red Car Line bridge and exempt from Section 106 evaluation.

Analysis of Adverse Effects

Project elements that affect all or portions of the viaduct complex or are going to be carried throughout the structure are discussed below. The following subsections address potential effects to each bridge that comprises the historic property. Because the work proposed is similar along several portions of each bridge, the bridges are grouped by street, so that all three viaducts along Hyperion Avenue are treated in one section and the two Glendale Boulevard bridges are dealt with in a single section.

Of the work proposed, restriping the roadway is planned to occur across all portions of the bridge. The roadway would provide one 12-foot-wide inside lane and one 14-foot-wide outside lane for both northbound and southbound Hyperion Avenue and two 12-foot-wide lanes for northbound and southbound Glendale Boulevard with new shoulders and widened sidewalks. This action would not adversely affect any portion of the viaduct complex.

As noted, a part of the proposed undertaking includes replication of the original baluster railing along all portions of the bridge. Enclosed in the 1960s, which damaged the top rails, the basic form of the original railing (built in 1929) is a significant character-defining feature of the bridge

that contributed to the neo-classical design of viaduct complex (the rail covering is not considered a character-defining element). It was one of several architectural elements that unified the three-part Hyperion Avenue viaduct. As a treatment, replicating the original railing meets the *Secretary of the Interior Standards for the Treatment of Historic Properties*, and has been encouraged as an appropriate treatment for this historic property. The replication of the railings is considered to be among the efforts to minimize and mitigate the project's adverse effect. The motorist on the bridge deck or passing under the bridge on I-5 would again be given a sense of the original historic appearance of the bridge, and the monumental nature of the bridge captured with the rehabilitation of this original design detail.

Table 2.6-1, below, provides a summary of the analysis of effects for each historic property within the APE for this project (JRP, 2008). It is concluded that the project would have an adverse effect on two of the six bridges that comprise the viaduct complex. Caltrans submitted the FOE for this project to SHPO, who concurred with the finding of adverse effect for this undertaking in May 2009.⁷

Waverly Drive (53C1179)

The existing covered railing along Waverly Drive (over Hyperion Avenue) would be replicated consistent with the Secretary of Interior's Standards for Rehabilitation, which would return the original balustrades design to the structure. No other work would be performed on the bridge and thus it would not be adversely affected by the project.

Hyperion Avenue over Riverside Drive (53C1882), Hyperion Avenue over I-5 (531069), and Hyperion Avenue over the Los Angeles River (53C1881)

None of the modifications planned for the Hyperion Avenue viaducts would have an adverse effect on these structures. Work includes eliminating the existing 2-foot curb along the east side of Hyperion Avenue (along the retaining wall beneath the Waverly Drive Bridge) and the 4-foot curb on the east side of the Hyperion Avenue (north of Waverly Bridge) and adding a concrete barrier to protect the new replica rails that would be installed. Additional improvements include increasing the width of the sidewalk on southbound Hyperion Avenue from five feet to eight feet, tapering back to four feet along the retaining wall near Waverly Drive, and installing a concrete barrier between the widened sidewalk and traffic. In addition to the rehabilitation and reuse of the existing lighting, the project also includes the addition of replica street lights (if necessary), and, as noted above, replica replacement of the original bridge railings (balustrades), which were altered in the 1960s. The repair, rehabilitation, and reuse, as well as possible replication of the light standards, would further contribute to preserving and retaining the historic character of the Hyperion Avenue bridges and the viaduct complex as a whole. A pedestrian crosswalk (across southbound Glendale Boulevard) is also planned at the northern end of the viaduct complex. This crosswalk would likely have signage or blinking signals, similar to other signage and blinking signals commonly used throughout a city.

The traffic safety measures, including the installation of the center median barrier and concrete railing barriers, do not require any physical demolition of historic fabric, and would not have an adverse effect under 36 CFR Part 800.5(a)(i) or (ii); nor would they have an adverse effect under 36 CFR Part 800 (iii) because previous modern improvements to the bridge deck, and

⁷ Milford Wayne Donaldson, SHPO, letter to Gregory King, Caltrans Cultural and Community Studies Office, May 5, 2009.

construction of I-5, in the immediate vicinity of the bridge, have already impacted, to a substantial degree, the original setting and feeling of the bridge. When the current setting of the bridge is compared to the original setting as shown in Figure 2-12, the viewer can see the loss of characteristics that contributed the setting and the negligible impact the installation of the concrete barrier and median would have on this feature.

Under 36 CFR Part 800.5(a)(v), the installation of the barrier and median do not introduce “visual elements that diminish the integrity of the property’s historic significance features.” Placement of the concrete barrier between the pedestrian walk along southbound Hyperion Avenue and the roadway is far enough from the railing that it does not impair the view of the bridge from southbound I-5. Furthermore, the barrier would be a reversible treatment and thus meets the *Secretary of Interior Standards* for this reason. Finally, the road has been resurfaced and repaved numerous times in its 75-year history and the median barrier or repaving would not alter the historic features of the deck.

Although portions of the improvements to the pedestrian amenities would remove the sidewalks, and as a result some original fabric, the work would not have an adverse effect on the structure. Defining elements (pylons, belvederes, etc.) of the complex would not be affected by the proposed work, and the overall intent of the design, allowing pedestrian access across the viaduct complex, would be maintained with the widened sidewalk on the southbound side of Hyperion Avenue. Again under the *Secretary of Interior Standards for Rehabilitation* guidelines, alterations are permitted when necessary to protect public safety and access issues as in this case. Therefore, this action does not constitute an adverse effect. These elements of the project would not have an adverse effect along any portions of the bridge along Hyperion Avenue.

Table 2.6-1: Potential Effects of the Glendale-Hyperion Project on Historic Properties Within the Project's APE⁸

Bridge #	Feature Intersection	Physical destruction of or damage to all or part of the property	Alteration that is not consistent with Secretary of the Interior's standards for the treatment of historic properties	Removal of the property from its historic location	Change in character of property's use or physical features within the property's setting that contribute to its historic significance	Introduction of visual, atmospheric, or audible elements that diminish the integrity of property's significant historic features	Neglect of a property which causes its deterioration	Transfer, lease, or sale of property out of Federal ownership or control
53C1179	Waverly Dr. over Hyperion Ave.	No adverse effect	No adverse effect	N/A	No adverse effect	No adverse effect	N/A	N/A
53C1882	Hyperion Ave. over Riverside Dr.	No adverse effect	No adverse effect	N/A	No adverse effect	No adverse effect	N/A	N/A
53 1069	Hyperion Ave. over I-5	No adverse effect	No adverse effect	N/A	No adverse effect	No adverse effect	N/A	N/A
53C1881	Hyperion Ave. over southbound Glendale Blvd and the Los Angeles River	No adverse effect	No adverse effect	N/A	No adverse effect	No adverse effect	N/A	N/A
53C1883	Southbound Glendale Blvd. over the Los Angeles River	Adverse effect	No adverse effect	N/A	No adverse Effect	No adverse effect	N/A	N/A
53C1884	Northbound Glendale Blvd. over the Los Angeles River	Adverse effect	No adverse effect	N/A	No adverse effect	No adverse effect	N/A	N/A

Source: JRP Historical Consulting, LLC Finding of Effect for Glendale-Hyperion Bridge Complex Improvement Project, October 2008.

⁸ The categories of effects listed in the table above were generated from the examples of adverse effects listed in 36 CFR 800.5(a)(2). No other types of effects to historic properties were identified or are anticipated.

Southbound Glendale over Los Angeles River (53C1883) and Northbound Glendale over the Los Angeles River (53C1884)

The project would have an adverse effect on the viaduct complex by adversely affecting two of the six structures. Both the Southbound Glendale Boulevard Bridge over the Los Angeles River (53C1883) and the Northbound Glendale Boulevard Bridge over the Los Angeles River (53C1884) would be widened as part of this project. These two structures are contributing components of the viaduct complex, albeit secondary structures within the overall property. The project would alter portions of these structures that are character-defining features of the viaduct complex. The wider replacement structure would replicate the arches of the original structure, along with the railings as discussed above, and the original pylons would be retained, rehabilitated, and placed back at their appropriate locations at the end of the railings of the Southbound Glendale Boulevard Bridge over the Los Angeles River (53C1883) and the Northbound Glendale Boulevard Bridge over the Los Angeles River (53C1884).

Work planned for both the southbound and northbound Glendale Boulevard bridges over the Los Angeles River includes widening both bridges by eight feet and modifying the I-5 on-ramp to join the widened sections of Glendale Boulevard. To accomplish this, both edges of the bridge would be reconstructed eight feet wider. The new construction would include replicating much of the original design features. All of the architectural details, including concrete arches, railings, and light standards, would be rebuilt using original plans. The original pylons would be carefully removed and repositioned on the bridges in the equivalent position to those they held originally. The flow control walls in the river that once connected this structure to the piers of a now-demolished railroad bridge (for the former Red Car line) to the south would have to be altered to accommodate the shift of the ramp to the east. Although the southbound Glendale Boulevard Bridge over the Los Angeles River (53C1883) and the northbound Glendale Boulevard Bridge over the Los Angeles River (53C1884) would be rehabilitated following, in part, the original design with some original features preserved and relocated, the proposed work would adversely affect the bridge under 36 CFR 800.5(a),(2)(i) because of the physical alteration of a portion of the historic property.

Under 36 CFR 800.5(a)(2)(i), an adverse effect is defined as “physical destruction of or damage to all or part of the property,” which under this alternative is partial demolition. The elements of the bridge complex that would be altered include many of the character-defining features essential to conveying the bridges’ neo-classical design, which are essential to the complex’s eligibility for listing in the NRHP. By removing these original components, the proposed project would diminish the bridge’s historic integrity.

For the portions of the project that would affect the complex’s historic character-defining features, the City is designing the project to follow the Secretary of Interior Standards for Rehabilitation. The City is retaining and maintaining the viaduct complex’s original use, preserving its historic character and distinctive features, and replacing deteriorated historic features to match the old features in design, color, texture, and its visual qualities. These include the modified railings on most of the structures that comprise the viaduct complex and replicating original light standards. The new features would also not create a false sense of history that would result if the project were adding features based on conjecture. Rather, the project would be partially accomplished by basing the design of the new structure on the documentary and physical evidence of the original design and by the new materials used that can be distinguished from the historic materials. Other than the specific features that are required for the widening of

the Glendale Boulevard bridges, the new additions to the viaduct complex would not destroy historic materials or features of the complex, and if the improvements made to the viaduct complex were to be removed in the future, the essential form and historic integrity of the historic property would remain.

Further project elements related to improving the Glendale Boulevard bridges include modifying the I-5 on-ramps to join the widened sections of northbound and southbound Glendale Boulevard. These two ramps are not part of the historic viaduct complex.

Several pedestrian enhancements are planned for the vicinity of both Glendale Boulevard bridges. These enhancements would not have an adverse effect on either of the bridges. Improvements in this category would consist of a pedestrian walkway beneath the viaduct complex along the Los Angeles River and the addition of a new pedestrian/bicycle ramp near the east side of the northbound bridge to provide access to the existing Los Angeles River bike path. A second pedestrian crossing would be added at southbound Glendale Boulevard at the northern end of the viaduct complex.

Because these activities do not entail removing, changing or altering any historic features or fabric of these bridges they would not have an adverse effect on either bridge or the viaduct complex as a whole.

Seismic Improvements

As explained in the project description, seismic retrofitting is planned for portions of the bridge so that the entire viaduct complex would meet current seismic performance standards. The retrofit action consists of four elements, including abutment transverse wall shear friction retrofit, spandrel column ductility retrofit, interior spandrel wall strengthening, and pier wall channel lining retrofit. All four of these elements would be undertaken along Hyperion Avenue. The abutment transverse wall shear friction retrofit and pier wall channel lining retrofit would be located on the lower portions of the bridge and would include limited physical impact to the bridge, whereas the spandrel column ductility retrofit and interior spandrel wall strengthening would consist of work to the open spandrel areas of the bridge and include construction of additional elements to the bridge. Each of the construction activities associated with the seismic retrofit and their effects is discussed below.

Abutments/Pier Seismic Improvements

Under the applicable sections of 36 CFR 800.5(a)(2), this work would not have an adverse effect. The construction work proposed would not under Section (i) cause physical damage to the property except in a localized portion of the abutment and piers. Under 36 CFR 800.5(a)(2)(ii), seismic work would consist of repair and maintenance activities that are consistent with the Secretary's guidelines because the work proposed does not threaten to diminish the historic appearance of the historic property. For the same reasons, this work would not cause an adverse effect by introducing visual elements that diminish the integrity of the viaduct complex. As stated in the standards, "if a building needs to be seismically upgraded, modifications to the historic appearance should be minimal." Although specifically referring to a building, this statement is applicable to a bridge as well. Work proposed to seismically improve the abutments would be consistent with this statement, would be minimal, and would not affect the historic appearance of the abutments or piers.

Spandrel Column Ductility Retrofits and interior Spandrel Wall Strengthening

Under the applicable sections of 36 CFR 800.5(a)(2), the spandrel column ductility retrofit and interior spandrel wall strengthening would not have an adverse effect. The construction activities for this work do not call for demolition (localized or otherwise); thus, the effects from these actions would not cause physical damage to all or any part of the resource. Therefore, it would not be an adverse effect under Criterion (i). Under section (ii) of the criteria, the activities for this project fall within the category of rehabilitation and are subject to the standards for this treatment. Within this treatment, the Secretary of Interior Standards for Rehabilitation allow for some alterations to a resource to ensure its continued use, provided that the alterations do not radically change, obscure, or destroy character-defining features. Adding fiber wrapping and concrete bolsters to the spandrel columns would not necessitate the removal of distinctive material along the spandrel arch, nor would it radically change or destroy character-defining features of the open spandrel portion of the bridge. Fiber wrapping the columns would obscure the original fabric along the column; however, cladding the column with an exact match of the exterior appearance original column would constitute an “in kind” treatment. Also, the original column would be retained beneath the work, preserving the original fabric, should the work be removed in the future. Moreover, the proposed “in kind” treatment would not alter the spatial relationship of the column to the arch. Considering the size and scale of the changes, the seismic retrofit impacts to the appearance of the column would be negligible.

Additionally, these actions would not alter the character of the complex’s use or alter physical features within the complex’s setting that contribute the historic significance under Criterion (iv). The open spandrel arches are one of the most prominent character-defining features of the bridge and sensitive treatment is necessary to retain a high threshold of integrity. For the same reasons as described above, the arch retrofits would not adversely impact the integrity of the arches. These actions would minimally alter the physical characteristics of these arches and are designed so that the size and scale of the new features do not adversely impact the original features. These changes would not introduce visual elements that diminish the integrity of the bridge. Overall, the viaduct complex displays a high degree of integrity, and the proposed actions would not alter that status in any significant level. In plan elevation, the overall appearance of the bridge would not appear to be altered by this work.

2.6.3.3 Cumulative Impacts

The original balustrades along the viaduct complex were repaired in 1962 by covering them with gypsum and reinforced gunite. As part of the railing covering project, the sides of the top rails were broken, presumably to provide a base for adhesion of the gunite. The past repair job has damaged original historic fabric.

The proposed project would replace the existing covered railings with new balustrades based on the original balustrade design, which would restore the viaduct complex to its original appearance.

Although the proposed project would result in an adverse effect to the southbound and northbound Glendale Boulevard bridges over the Los Angeles River related to the removal of some original historic fabric from the widening, the City is designing the project to follow the Secretary of Interior Standards for Rehabilitation, including retaining and maintaining the viaduct complex’s original use, preserving its historic character and distinctive features, and replacing deteriorated historic features to match the original features in design, color, texture, and its visual qualities. These include replica balustrades on most of the structures that comprise

the viaduct complex and replicating original light standards. At a project level, the new additions to the viaduct complex would not destroy features of the bridge complex, other than the specific features that are required for the widening of the two Glendale Boulevard bridge structures, and if the new improvements made to the bridge complex were to be removed in the future, the essential form and historic integrity of the historical resource would remain. There are also no known projects in the foreseeable future that might adversely affect the historic property. Furthermore, project-level mitigation would be implemented, as described in Section 2.6.3.4 below. Because of this, the proposed project would not make a cumulatively considerable contribution to a cumulatively significant impact to this historic property.

As noted, the Glendale-Hyperion Viaduct is City of Los Angeles Historic Cultural Monument #164 and it was included in the Caltrans Los Angeles Monumental Bridges study. The study concluded that the monumental bridges are significant for their association with LABOE's bridge program in the early to mid-twentieth century, but that they do not constitute a historic district.⁹ There are projects that have and are currently affecting other Los Angeles monumental bridges, including 1st Street Viaduct (HCM#909), Main Street Bridge (HCM#901), Riverside Bridge at Figueroa Street (HCM#908), North Spring Street (HCM#900), Riverside-Zoo Drive Bridge (HCM#910), and 6th Street Viaduct (HCM#905). There is no historic district to which these bridges contribute and thus the adverse effect on the Glendale-Hyperion Viaduct does not constitute a cumulative effect under Section 106 for impacts to the Los Angeles monumental bridges. Under CEQA, the Los Angeles monumental bridges are thematically linked and impacts on one bridge could potentially have a cumulative impact on this group. The project on the Glendale-Hyperion Viaduct will not demolish the structure and it will remain listed as a HCM. Efforts to minimize and mitigate the effects to the Glendale-Hyperion Viaduct lessen the impacts to this historical resource such that do not create a cumulative impact to the group because the bridge's character-defining features will remain and mitigation includes replicating the historic railings through the viaduct complex enhancing the historic structure's original design character.

There are no other key related projects which in conjunction with the proposed project, could result in cumulative impacts to the viaduct complex.

2.6.3.4 Avoidance, Minimization, and/or Mitigation Measures

The project has been designed to incorporate features to minimize adverse effects to the viaduct complex, while meeting the project's engineering requirements. Features include replication of the original balustrades that are character defining.

The proposed project would result in adverse effects to the Glendale Boulevard bridges over the Los Angeles River, which would be minimized by implementation of the following mitigation measures:

- H-1:** Recordation to Historic American Engineering Record (HAER) Specifications: Prior to the start of any work that could adversely affect characteristics that qualify the Glendale-Hyperion Viaduct Complex as a historic property, contact the National Park Service Pacific West Region Office (NPS), to determine if additional recordation is required for the historic property beyond that provided in

⁹ JRP Historic Consulting for Caltrans, City of Los Angeles Monumental Bridges, 1900-1950, May 2004.

“Historic American Engineering Record, Glendale-Hyperion Viaduct, HAER No. CA-272,” 2000-2001. NPS should respond to the additional recordation request within 30 days. If additional documentation is required, it should be completed and accepted by the NPS before the viaduct is altered. Prepare draft and final reports.

- H-2:** Historic American Buildings Survey (HABS)/HAER Dissemination: Upon completion of the documentation prescribed in Mitigation Measure **H-1**, documentation meeting current archival quality standards established by the NPS’ Heritage Documentation Program to District 7 and the Caltrans Transportation History Library in Sacramento shall be provided. Archive quality documentation shall also be provided to NPS, if NPS requests it. Copies of the documentation shall be offered to, at a minimum, the Los Angeles Public Library, Los Angeles Conservancy, Los Angeles City Historical Society, Historical Society of Southern California, and the California Office of Historic Preservation.
- H-3:** Online Publication: Work with the Los Angeles Public Library to place the historical information from the HAER report, prescribed in Mitigation Measure **H-1**, on a City website with a link to a public library website, such as the Los Angeles Public Library website, available to the public for a minimum period of three years. The information link shall also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on their website.
- H-4:** Video Documentary: Produce a documentary (motion picture or video) that addresses the history of the Los Angeles River monument bridges, and their importance and use within the broader contextual history of the City of Los Angeles. The motion picture or video shall be of broadcast quality, between 30- and 90-minute duration, and shall be made available to local broadcast stations, public access channels in the local cable systems, and requesting schools/libraries; one copy shall be submitted to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento.
- H-5:** Informational Booklet: Produce and publish a booklet on the Historic Los Angeles River Bridges that addresses the history of the monumental concrete bridges of Los Angeles and this bridge’s place in that history. The booklet shall be similar in general format to the “Historic Highway Bridges of California” published by the California Department of Transportation (1991) and shall include high-quality, black and white images of the Los Angeles River Bridges, historic photographs or drawings, as appropriate, and text describing each of the bridges’ location, year built, builder, bridge type, significant character-defining features and its historic significance. Ensure that an electronic version of the booklet is posted on a City website and produce paper copies for distribution to local libraries, institutions and historical societies. One copy shall be submitted to the Caltrans Transportation Library and History Center in Sacramento. Ensure that the camera-ready master booklet is maintained and produce additional copies if there is demand.

- H-6:** Design Plan and Specifications Review: Ensure that a Caltrans Professionally Qualified Staff Principal Architectural Historian reviews the 65% and 95% design plans and specifications for the Glendale-Hyperion Viaduct Complex are in conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (SOI Standards), and that SHPO is afforded the opportunity to review the same design plans and specifications. Failure of the SHPO to respond within thirty (30) calendar days after receipt of the plans shall not preclude Caltrans from proceeding with the undertaking. Should the SHPO or the Council object within thirty (30) calendar days to any plans and specifications submitted for review, then Caltrans shall consult with the objecting party, for a period not to exceed ten (10) calendar days, to resolve the objection. If the objection cannot be resolved within this time period, the FHWA shall request the Council review the Finding in accordance with 36 CFR 800.5(c)(3).
- H-7:** Construction Monitoring Plan: Prepare construction monitoring plan and conduct periodic monitoring of construction activities to ensure the project is conducted in a manner that meets the SOI Standards. Provide Caltrans a draft construction monitoring plan, in which Caltrans shall have thirty (30) calendar days after receipt of the document to review and comment, and prepare a final construction monitoring plan. The plan shall include description of the project, description of the historic property's character-defining features, discussion of the monitoring's purpose, and construction activities to be monitored, as well as methods, schedule, and procedures for monitoring and reporting. Caltrans shall ensure that the construction monitoring plan is implemented. Monitoring reports shall include photographs indicating that the activities are in compliance with the SOI Standards. The monitor shall meet the Secretary of the Interior's Professional Qualifications Standards for Architectural Historian or Historic Architect pursuant to CFR 36 CFR Part 61, Appendix A (PQS Standards).

2.6.4 No Build Alternative Impacts

The No Build Alternative would result in no new or additional impacts to historic resources relative to existing conditions.

2.7 Archaeological Resources

This section evaluates potential effects of the proposed project on archaeological resources.

2.7.1 Regulatory Setting

The same regulatory framework that applies to historic properties also applies to archaeological resources.

In addition, the LABOE has issued a Special Order (No. S002-0590) for the protection of archaeological resources. This special order requires an archaeological monitor for construction in archaeologically sensitive areas. If archaeological resources are encountered, the construction inspector will halt work while the archaeologist evaluated the significance of the artifacts. Any culturally significant materials field notes, reports, and photographs are to be placed with an appropriate archaeological repository or appropriate Native American tribe.

2.7.2 Affected Environment

An Archaeological Survey Report (ASR) was prepared in February 2008 (AEW, 2008) to identify potential archaeological sites in the architectural area of potential effects (APE) as part of the HPSR (see Section 2.6).

The archeological APE consists of areas where excavation would occur during construction, including footings and frontage road widening.

The project area is located along the Los Angeles River floodplain in northeast Los Angeles. Elevation of the project area is approximately 400 feet above mean sea level. Vegetation in the area was formerly dominated by species characteristic of riparian and chamise-chapparral communities (Muntz, 1974). Currently, the project area is urbanized with a built environmental setting. Most of the project area consists of existing freeway, highway, ramps, viaducts/bridge over-crossings, and other related transportation improvements. I-5 and the Los Angeles River are prominent elements of the existing environment, while modern buildings and landscaping characterize much of the remaining project area. Griffith Park is located northwest of the project area and contains remnants areas of native vegetation. Past construction of these transportation-related features has resulted in grading and disturbances to all natural areas in the APE.

2.7.3 Environmental Consequences

2.7.3.1 Temporary Impacts

Based on the database research and field investigation, no temporary impacts to archaeological resources are anticipated from the proposed project due to the lack of such resources within the project APE and the disturbed nature of the project area. No further cultural resource work is recommended.

Although no archaeological resources are expected to be encountered during construction, a professional archaeologist would monitor all ground disturbing activities as requested by the Chairman of the Gabrielino/Tongva Tribal Council. (See A-1 in section 2.7.3.4.)

If human remains are encountered during construction, standard policy of the City of Los Angeles and Caltrans would be followed. This includes notifying the County Coroner. In such an event, construction would be halted. If the remains are Native American, the Coroner is responsible for contacting the NAHC within 24 hours. The Commission, pursuant to Section 5097.98 of the PRC, shall immediately notify those persons it believes to be the most likely

descendants of the deceased Native Americans. Treatment of the remains would be dependent on the views of the most likely descendent.

2.7.3.2 Permanent Impacts

The ASR was completed for the proposed project and is provided as part of the HPSR (JRP, 2008). The ASR consisted of:

- A records search for archaeological resources, encompassing the following sources:
 - South Central Coastal Information Center at California State University, Fullerton
 - Office of Historic Preservation Database of Determinations of Eligibility
 - Department of Parks and Recreation California Points of Historical Interest
 - California Historic Landmarks
 - California Inventory of Historic Resources
 - National Register of Historic Places
 - City of Los Angeles Cultural Monuments List
- A pedestrian surface reconnaissance survey of the entire APE.

Neither the records search nor the field survey revealed evidence of prehistoric or historic archaeological resources within the APE.

In accordance with Section 106 of the National Historic Preservation Act, a request was made to the Native American Heritage Commission (NAHC) for a review of the *Sacred Lands Files* in May 2004 to determine if any known cultural properties are present within or adjacent to the project APE. The NAHC responded, stating that no Native American Cultural resources are known to exist within or adjacent to the project APE. However, the NAHC requested that 11 Native American individuals and organizations be contacted to solicit any information regarding cultural resources issues related to the project. These individuals and organizations were contacted, and the Chairman of the Gabrielino/Tongva Tribal Council contacted the archaeologist, stating that he had concerns regarding the project due to its proximity to the Los Angeles River where Native peoples often located their villages and cemeteries. The chairman requested that a professional archaeologist be present during ground-disturbing activities. No other comments have been received from the Native American individuals or organizations contacts.

Based on the database research and field investigation, no permanent impacts to archaeological resources are anticipated from the proposed project due to the very disturbed nature of the APE and the lack of such resources within or near the project APE. No further cultural resource work is recommended unless the project expands beyond the current APE.

2.7.3.3 Cumulative Impacts

On the basis of records research and field investigation, no cumulative impacts to archaeological resources are anticipated from the proposed project in conjunction with other projects because no related projects would affect the APE, due to the lack of such resources within the project APE, and because of the disturbed nature of the project area. No further cultural resource work is recommended unless the project expands beyond the current APE.

2.7.3.4 Avoidance, Minimization, and/or Mitigation Measures

Although the proposed project is not expected to affect archaeological resources, as requested by the Chairman of the Gabrielino/Tongva Tribal Council, the following measure would be implemented:

- A-1:** A professional archaeologist would monitor all ground disturbing activities during construction and would act according to the Special Order and Caltrans policies if archaeological resources are discovered.

In addition, if buried cultural materials are encountered during construction, work in the area of the resource would be halted and applicable actions under City of Los Angeles and Caltrans policy would be implemented.

2.7.4 No Build Alternative Impacts

The No Build Alternative would result in no new or additional impacts to archeological resources relative to existing conditions.

Physical Environment

2.8 Hydrology, Water Quality, Stormwater Runoff

This section evaluates potential effects of the proposed project on hydrology, water quality, and urban runoff.

2.8.1 Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 CFR 650 Subpart A.

In order to comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project.

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

Federal Requirements: Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below.)
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section

402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

USACE issues two types of 404 permits: Standard and General permits. There are two types of General permits, Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE’s Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA’s Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the U.S. In addition every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California’s Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a “Report of Waste Discharge” for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just Waters of the U.S., such as groundwater and surface waters not considered Waters of the U.S. Additionally, it prohibits discharges of “waste” as defined; the definition of waste is broader than the CWA definition of “pollutant.” Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollution Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water dischargers, including Municipal Separate Storm Sewer Systems (MS4s). The U.S. EPA defines an MS4 as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. The SWRCB has identified Caltrans as an owner/operator of an MS4 by the SWRCB. This permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit, under revision at the time of this writing, contains three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);
2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs) and other measures.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices (BMPs). The proposed Project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Part of and appended to the SWMP is the Storm Water Data Report (SWDR) and its associated checklists. The SWDR documents the relevant storm water design decisions made regarding project compliance with the MS4 NPDES permit. The preliminary information in the SWDR prepared during the Project Initiation Document (PID) phase will be reviewed, updated, confirmed, and if required, revised in the SWDR prepared for the later phases of the project. The information contained in the SWDR may be used to make more informed decisions regarding the selection of BMPs and/or recommended avoidance, minimization, or mitigation measures to address water quality impacts.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with Caltrans's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

The Los Angeles Regional Water Quality Control Board is required by federal law to issue permits to municipalities so that, over time, the source of pollution is reduced to the maximum extent practicable. The Los Angeles County Storm Water Permit requires that city departments coordinate and implement best management practice in several program areas including

- Public Outreach and Education
- Planning and Construction
- Public Agency Activities
- Business Inspections, and
- Illicit Connection and Illicit Flows Detection and Elimination

The purpose of these programs is to implement pollution prevention programs that will, to the maximum extent practicable, reduce the discharge of pollutants from the storm drain system to protect receiving waters and their beneficial uses. The City of Los Angeles falls is a permittee that is subject to this permit, and has Standard Urban Stormwater Mitigation Plan. Project applicants are required to prepare and implement a Standard Urban Stormwater Mitigation Plan when their projects fall into any of these categories:

- Single-family hillside residential developments
- Housing developments of 10 or more dwelling units (including single family tract developments)
- Industrial /Commercial developments with one acre or more of impervious surface area
- Automotive service facilities
- Retail gasoline outlets
- Restaurants
- Parking lots of 5,000 square feet or more of surface area or with 25 or more parking spaces

- Projects with 2,500 square feet or more of impervious area that are located in, adjacent to, or draining directly to designated Environmentally Sensitive Areas (ESA).¹⁰

2.8.2 Affected Environment

The project site is located along an urbanized roadway about five miles north of the Los Angeles civic center. The existing viaduct complex traverses the Los Angeles River, and runoff from the project area is conveyed to the Los Angeles River through the storm drain system.

A Location Hydraulic Study was performed in 2004 by CH2M HILL. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels 06037C1610F and 06037C1626F (Figures 2-13 and 2-14), effective date September 26, 2008, the Los Angeles River is within a FEMA Zone A floodplain. FEMA defines a Zone A as an “area of 100 year flood base flood; base flood elevations and flood hazard factors not determined. These maps also show that the remainder of the project area is within Zone X, which is defined by FEMA as “areas determined to be outside of the 0.2% annual chance floodplain.” Water Resources Control Board and the LARWQCB have jurisdiction over water quality at the project site. The *Water Quality Control Plan: Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (LARWQCB, 1995), is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan (1) designates beneficial uses for surface and groundwater, (2) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy, and (3) describes implementation programs to protect all waters in the region.

Under the Basin Plan, the Los Angeles River has the following existing beneficial uses: agricultural supply (AGR), water contact recreation (REC 1), non-contact water recreation (REC 2), warm freshwater habitat (WARM), wildlife habitat (WILD), and wetland habitat (WET); and the following potential beneficial uses: municipal and domestic supply (MUN) and industrial service supply (IND).

The Los Angeles River upstream and downstream of the viaduct complex is open-bottomed and lined with cobbles. The banks are concrete-covered riprap. A concrete pad forms the bottom of the Los Angeles River at the viaduct complex crossing. The concrete pad along the river bottom extends between 60 to 130 feet upstream of the viaduct piers and downstream from 250 to 360 feet from the viaduct support piers.

The existing storm drain system conveys precipitation and other runoff from the project site and vicinity to the Los Angeles River, which subsequently empties into the Pacific Ocean.

The project site is on the border of the San Fernando Valley and San Gabriel Valley Groundwater Basins. The San Fernando Basin is a significant source of drinking water, with an estimated total volume of three million acre-feet of groundwater stored in aquifers within the alluvial fill of the basin. The groundwater of the San Fernando Basin has been used as a source of drinking water for more than 800,000 residents within the cities of Los Angeles, Burbank, Glendale, and San Fernando (CH2M HILL, 2002).

¹⁰ Los Angeles Stormwater. <http://www.lastormwater.org/green-la/standard-urban-stormwater-mitigation-plan/>. Accessed June 22, 2012.

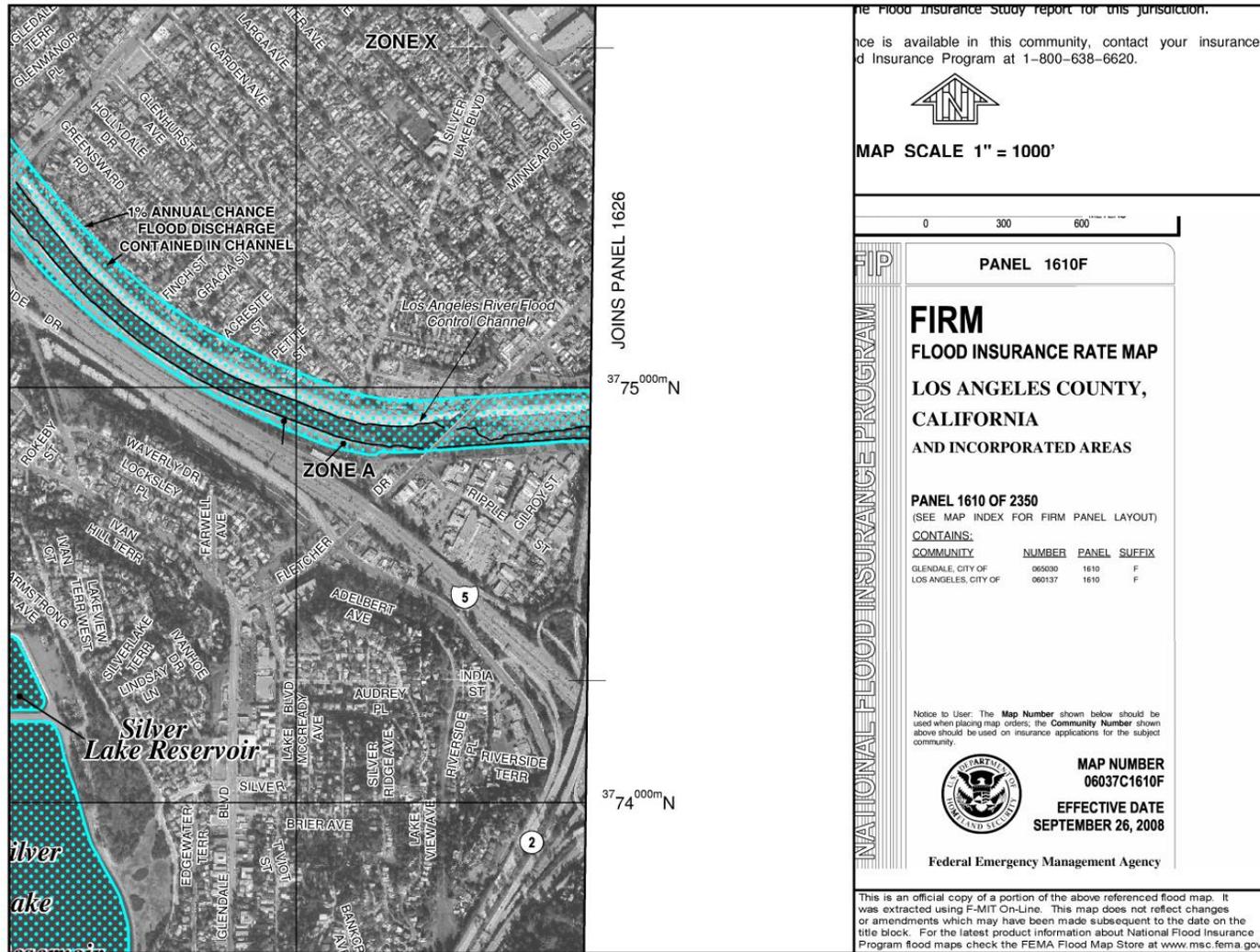


Figure 2-13: FEMA Map

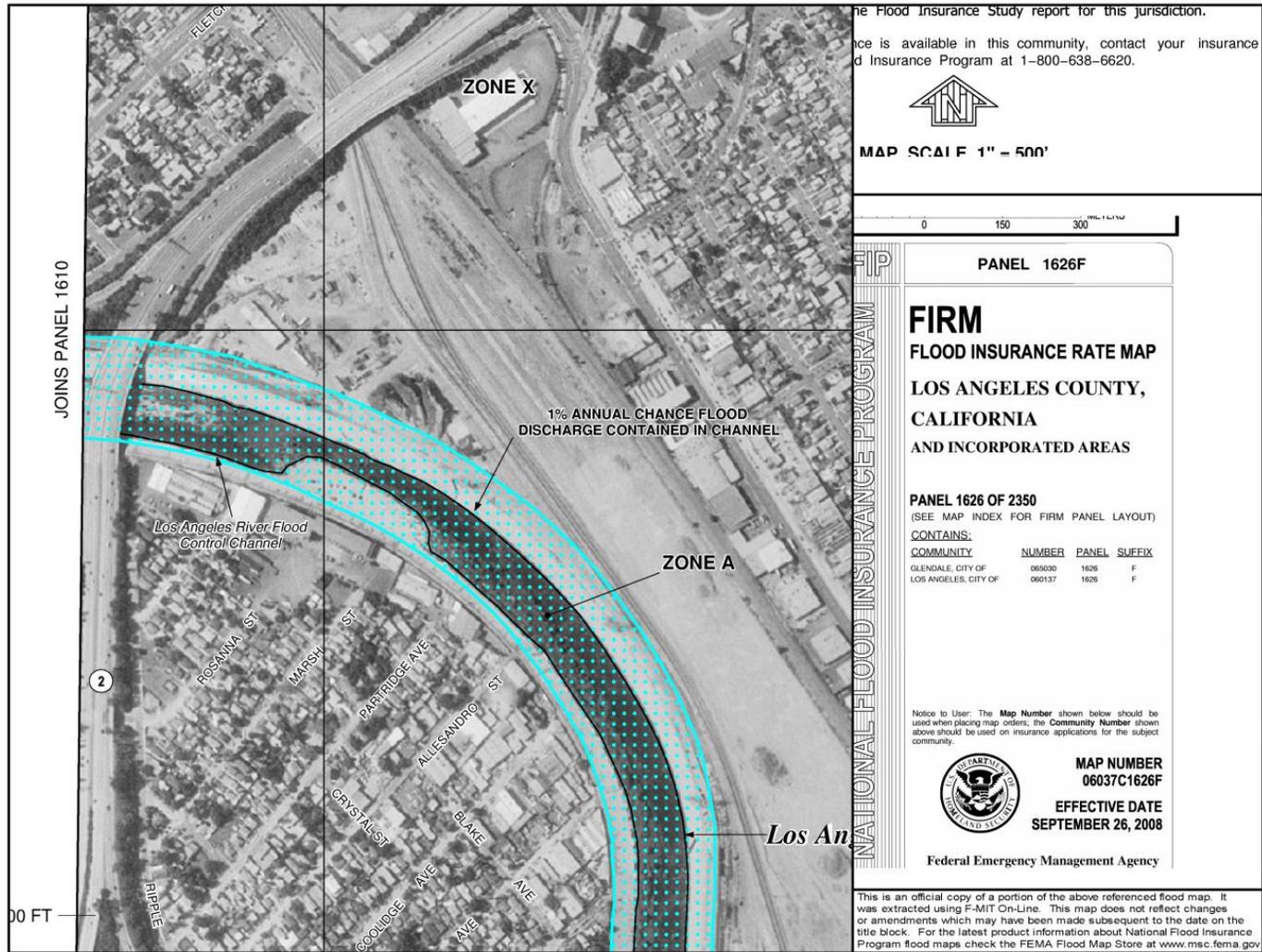


Figure 2-14: FEMA Map

Groundwater quality in the region is generally degraded by infiltration of contaminants from surrounding land uses. Some examples of the primary pollutants in much of the groundwater throughout these basins are volatile organic compounds from industry, as well as nitrates from past agricultural activities. Portions of the Subject Property are situated over a National Priorities List (NPL) groundwater contamination site (CH2M HILL, 2004). As part of the Northeast Interceptor Sewer Phase II environmental work, City staff identified the extent of the Pollock superfund site (TCE and PCE contaminated groundwater) in the Los Angeles Narrows area, and the viaduct complex is located above a portion of the site (CLA, 2005b). The concentration of TCE and PCE contamination within the Pollock superfund site varies by location.

2.8.3 Environmental Consequences

2.8.3.1 Temporary Impacts

The minimum channel capacity conveyance would be preserved during construction, allowing the flow to pass through unobstructed. No impacts to flood flow due to construction activities are anticipated.

The viaduct complex is an earth-filled bridge structure, and during construction earth would be exposed. The proposed project could result in erosion of exposed surfaces during construction if rain events occur before construction is completed. In such cases, sediment in runoff from the construction site could flow into the local storm drain system. The total area of the project work zones would be approximately 6 acres. However, fewer than two acres would be under construction at any given time. Nonetheless, construction would require coverage under the Los Angeles Regional Water Quality Control Board (LARWQCB) permit for storm water discharges resulting from construction. In addition, because the northbound I-5 off-ramp is controlled by Caltrans, construction of this element would require coverage under the statewide permits, including CAS 000002 and CAS 000003. Therefore, a stormwater pollution prevention plan (SWPPP) and monitoring program would be prepared and subsequently implemented during construction. In addition, a Storm Water Data Report (SWDR) would be prepared and submitted to Caltrans for approval.

Construction of the proposed project would occur in a staged manner to keep traffic lanes open during construction. As mentioned above, soil surfaces would be exposed during construction, which could erode and enter the storm drain system and the Los Angeles River during rain events or if overwatering of the site for dust suppression occurs.

Widening of the Glendale Boulevard bridges over the Los Angeles River would require the placement of timber falsework in the river channel, and the casting (in concrete) of bridge structures. The placement of the falsework is not in itself expected to result in contaminants that could enter affect water quality; however, casting of the new bridge structures could result in unset concrete leakage or drippings into the river.

The proposed project would also require construction in the Los Angeles River to install foundations for the pier extensions and abutment extensions. This work would require temporary in-channel flow diversions around the pile excavation locations, such as cofferdams. Excavated soil would be immediately removed from the work area and concrete piles casted. Because there would be excavation within the Los Angeles River, construction equipment would be present in the river channel (albeit restricted to the concrete pad). Construction activity could

result in excavated soil, sediment, and possibly equipment fluids entering the river, which would be adverse to water quality in the river.

The SWPPP would include erosion and sediment control, non-storm runoff management, post construction stormwater management, waste and disposal management, maintenance, inspection, and a sampling and analysis protocol for potentially contaminated runoff. The SWPPP would identify specific Best Management Practices (BMPs) that would be implemented during construction to minimize or eliminate the potential for spills and leakage of construction materials and erosion of disturbed areas by water and wind. Examples of BMPs with proven effectiveness and that are likely to be specified in the SWPPP include:

- Utilization of temporary silt fence
- Daily sweeping of the work area to minimize sediment buildup,
- Stockpile management for excavations in the Los Angeles River, and
- Control barriers (gravel bag berm, temporary silt fence, fiber roll, or other material) to control work area runoff.

With preparation and implementation of the SWPPP and associated BMPs, adverse impacts to water quality during construction are not likely to occur.

As mentioned above, groundwater quality in the project area is generally degraded. Construction of the proposed project would not adversely affect groundwater quality because it would not add additional pollutant constituents to groundwater. For the construction of piles in the river channel/banks, contaminated groundwater may be encountered. To install piles by drilling, the hole would first be drilled, then a reinforcing cage lowered into the hole, and the hole filled with concrete. As the concrete fills the hole, groundwater within the hole becomes displaced and is discharged from the drilled hole. Any uncontrolled discharges of displaced groundwater would flow into the river and adversely affect water quality in the river.

Any groundwater that must be dewatered during construction would be tested for the presence of petroleum hydrocarbons and other contaminants. If contaminants are present, the dewatered groundwater would be treated prior to discharge to the City's sewer system. Such discharges would require an Industrial Waste Discharge permit from the City's Bureau of Sanitation and be required to comply with the specified discharge pollutant levels. Since the dewatered groundwater would be tested and treated (if necessary) prior to discharge to the sewer system, adverse impacts would not occur.

2.8.3.2 Permanent Impacts

The entire project site is paved with asphalt or concrete, and storm flows generated on the viaduct complex and at-grade streets during rain events flow to various storm drain inlets, and are conveyed and discharged to the Los Angeles River. The proposed project would provide roadway and pedestrian improvements to Hyperion Avenue along the viaduct complex, would widen the existing Glendale Boulevard Bridge by approximately eight feet on each side, and would reconfigure the northbound I-5 off-ramp to Glendale Boulevard.

Although the widening of the Glendale Boulevard bridges over the Los Angeles River represents an increase in paved area, it would not result in the generation of additional storm water runoff as the widened area would capture rainfall that would otherwise fall or be conveyed to the Los

Angeles River. None of the other project elements would increase runoff to flow to the Los Angeles River.

In the project area, the Los Angeles River is mapped on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM, panel number 060137 0056 C), which shows that the FEMA 100-year flood would be fully contained within the channel (CLA, 2005a). The proposed project includes the placement of some fill material within the Los Angeles River for piles to support the pier extensions; however, the piles and pier extensions would be emplaced along a completely paved (on the concrete pad) portion of the river. The new piles that would support the pier extensions would be below the existing channel bottom, the pier extensions would be minor, and the pier extensions would be designed to not affect channel hydraulics. In addition, the walkway along the left river bank would be designed not to affect channel hydraulics. As a consequence, the proposed project would not expose people or structures to a significant risk of loss, injury, or death from flooding.

The proposed project is not capacity-enhancing and would not add new travel lanes. Although it would slightly widen the Glendale Boulevard bridge structures over the Los Angeles River, no substantial increases in pollutant deposition to the roadway would occur because increased vehicular travel would not occur. To the contrary, with the reconfiguration of the northbound I-5 off-ramp to Glendale Boulevard, a small reduction in vehicle miles traveled would occur from the elimination of the existing right-turn only (to northbound Glendale Boulevard) from the off-ramp. As such, a minor reduction in pollutant deposition on roadways is expected with a resultant minor decrease in pollutant loadings to the Los Angeles River.

Risk Assessment

The project site is included on the FEMA Flood Insurance Rate Maps, as previously discussed in Section 2.8.2. The Los Angeles River flood flows are confined within the levees. The Los Angeles River is a major floodway, and the 100-year flood is contained in the channel. The remaining areas of the project site are located in Zone X, which are areas determined to be outside of the 500-year floodplain.

The pedestrian crossing over the Los Angeles River that is downstream of the viaduct complex (previously discussed) will have no impact on the floodwater conveyance or water quality of the river; no support columns will be constructed in the river as part of this crossing.

There is no longitudinal encroachment due to the project. The project does not represent a significant encroachment into the Los Angeles floodplain, as defined in the Federal Aid Highway Program Manual. Because there are no floodplain values that will be impacted, no restoration or preservation of floodplain values is required.¹¹

2.8.3.3 Cumulative Impacts

The proposed project would improve the viaduct complex and is not anticipated to result in any significant effects related to hydrology and water quality. The proposed project would not result in an adverse cumulative impact related to hydrology and water quality.

¹¹ CH2M HILL. 2004. *Location Hydraulic Study, Glendale-Hyperion Viaduct Improvement Project*. April 2004.

2.8.3.4 Avoidance, Minimization, and/or Mitigation Measures

To avoid potential releases of exposed soil from construction areas to the Los Angeles River and the resultant increases in turbidity, implementation of the Storm Water Pollution Prevention Plan (SWPPP) would include certain avoidance and minimization measures.

As part of the SWPPP, a runoff management plan and measures that would minimize the potential for sediments from entering the river from construction areas would be implemented. Such measures could include the use of water diversion, coffer dams, or other filters to keep sediments from entering the storm drains.

To avoid potential releases of concrete drippings to the Los Angeles River during widening of the Glendale Boulevard bridges over the river, the SWPPP would implement a management plan and measures that would minimize the potential for unset concrete to drip in to the Los Angeles River. Such measures could include the installation of secondary catch or containment systems.

To avoid potential releases of excavated soil to the Los Angeles River and the resultant increases in turbidity from construction of the pier extensions, the SWPPP would implement a spoils management plan with measures that would minimize the potential for excavated soil releases from pile drilling to the Los Angeles River. Such measures could include immediate containment of excavated soils by effective soil management methods.

To avoid potential release of contaminated groundwater into the Los Angeles River during construction of the piles for the pier extensions, the SWPPP would implement a groundwater management plan and measures that would minimize the potential for dewatered groundwater from pile construction to enter the Los Angeles River. Such measures could include concurrent withdrawal of groundwater within pile holes while the piles are being cast, or other equally effective method to manage displaced water from drilled pile holes (during pile casting).

In addition to the measures addressed in the SWPPP, a detention/infiltration basin would be established as part of the Sunnynook Park and a permanent water quality Best Management Practice (BMP) for purposes of runoff from the viaduct complex. This would utilize the construction staging area between I-5 and the Los Angeles River just northwest of the viaduct complex. Preparation of this facility would involve excavation of the ground, removal of several trees to construct the basin, and planting of new trees and ground cover after demobilization of contractor facilities. The basin would provide detention for reduction of peak runoff volume, infiltration for groundwater recharge and volume reduction and pre-treatment of stormwater prior to river discharge. The basin would be provided with metered drainage to prevent insect vector issues as well as provide for emergency overflow into the river as protection for adjacent transportation.

2.8.4 No Build Alternative Impacts

The No Build Alternative would result in no new or additional impacts to hydrology, water quality, and stormwater runoff relative to existing conditions.

2.9 Hazardous Waste/Materials

This section evaluates potential effects of the proposed project-related to hazardous wastes and materials.

2.9.1 Regulatory Setting

Hazardous materials and hazardous waste are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the Federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

2.9.2 Affected Environment

The current adjoining properties and portions of the project site are comprised of transportation, residential, commercial, and industrial land uses.

Based on a review of historical aerial photographs, historical topographic maps, Sanborn maps, and city directories for the project site, the past uses of adjoining properties are generally consistent with current land uses. A records search of all reasonably ascertainable environmental databases including the standard state and federal sources in accordance with ASTM standard

practice was conducted (by Environmental Data Resources, Inc.) to identify potential sources of contamination that could affect the project, as indicated in the Supplement to *Initial Site Assessment Report for Glendale Hyperion Bridges and Street Improvement Project* (CH2M Hill, April 2012). The original Initial Site Assessment has since been updated for current conditions.

The database report identified six known sites of environmental significance within the ASTM search distance, but none within the project boundaries. The remaining sites were determined to have a low potential to impact the project site they had no reported impacts to groundwater, they received closure approval received from the lead regulatory agency, and/or they are located at relative distance from the project site.

- San Fernando Valley Area #2 and #4. These sites are listed on the National Priorities List (NPL). They are part of the large-scale contamination located in the San Fernando Valley. In 1986, four sites from the San Fernando Valley were included on the Superfund NPL based on drinking water well fields that were known to be contaminated by volatile organic compounds (VOCs). The Area #2 well field is located approximately 4 miles north of the Subject Property, and the Area #4 well field is located approximately 1 mile southeast of the Subject Property.

Contamination in many of the areas of the four sites has migrated together as one large plume; therefore, both sites are being addressed here together. Groundwater at both of the sites is contaminated with tetrachloroethylene (PCE) and trichloroethylene (TCE). Plume maps indicate that there may be low levels of PCE in the shallow groundwater east of the project site. The groundwater contamination plume extends into the project area. Remedial investigations and feasibility studies were completed in 1992. Records of Decision (ROD) were issued in 1996. Remedial measures at the sites include pump-and-treat systems and well-head treatment. Another ROD was issued in 2009 to include treatment systems that would remove chromium and 1,4-dioxane, as well as enhance VOC recovery.¹²

- Los Feliz Fuel Stop, 3160 Riverside Drive (currently the Riverside Service Station). This site is located approximately 600 feet north of the Hyperion Avenue overcrossing of Riverside Drive. This site had an open leaking underground storage tank (UST) site on file with the LARWQCB. A diesel and gasoline fuel leak was discovered during a tank removal in 1994. Methyl-tert-butyl-ether (MTBE), and benzene, toluene, ethylbenzene, and xylene (BTEX) have been detected in soil and groundwater. BTEX and MTBE groundwater plumes migrated offsite 150 feet toward the east-southeast. Groundwater at the site is approximately 18 feet below ground surface (bgs). The site was closed in January 2009 because the extent of soil and groundwater contamination was defined; residual soil contamination was below screening levels; and groundwater modeling and other observations indicated that the plume is contained and would naturally attenuate.¹³

¹² “Supplement to *Initial Site Assessment Report for Glendale-Hyperion Bridges and Street Improvement Project*, Los Angeles, California, dated June 2004, prepared by CH2MHILL, Santa Ana, California.” Letter report from Dan Herlihy, UltraSystems Environmental, Inc., Irvine, California to Robert Sennett, MGE Engineering, Inc., Sacramento, California (April 11, 2012).

¹³ *Ibid.*

- Shell Service Station, 3047 Glendale Boulevard. This site is located on the northwest corner of Glenfeliz Boulevard and Glendale Boulevard adjacent to the project site. This site is listed (with the LARWQCB) as having had a leaking UST. The site was closed in July 1998. Both groundwater and soil were contaminated at the site. Contaminated soil was excavated from the site. Groundwater is approximately 20 to 30 feet bgs and flows to the south, toward the project site. Three monitoring wells were installed at the site.
- Unocal #5140, 3070 Glendale Boulevard. This site is located on the southwest corner of Glenhurst Avenue and Glendale Boulevard adjacent to the Subject Property. This site was listed (with the LARWQCB) as a leaking UST. This site was closed in March 1997. Two gasoline leaks were discovered in April and May 1994. Both soil and groundwater were impacted by the gasoline releases. Contaminated soil was excavated and removed, and a vacuum extraction system was installed and operated for 4 months. The site was closed in September 2010 because the extent of soil and groundwater contamination was defined; active soil and groundwater remediation has been completed; residual soil contamination would not cause harm to human health and the environment; and the nearest production well is 3,665 feet from the site.¹⁴
- Douglas Berglund/Former Texaco, 2900 Riverside Drive (currently the Valero station). This site is located approximately 700 feet from the south end of the northbound Glendale Bridge. This site was listed (with the LARWQCB) as a leaking UST. During tank closure, gasoline was observed at the water table, approximately 23 feet bgs. Remedial action was implemented. Groundwater flow is estimated to flow east-southeast (away from the project location). Vapor extraction, sparging and groundwater treatment were conducted in 2005. The site was closed in June 2006 after confirmation boring data indicated that petroleum hydrocarbon concentrations in soil and groundwater beneath the site were significantly reduced.¹⁵
- Triangle Texaco, 2918 Riverside Drive (currently the Valero station). This site is located approximately 700 feet from the south end of the northbound Glendale Bridge and is located in the same location as the Douglas Berglund site above. This site was listed as an open leaking UST site. A gasoline leak was discovered in a UST in 1996. Soil samples collected indicated soil contamination. No groundwater contamination at the site was reported. Vapor extraction, sparging and groundwater treatment were conducted in 2005. The site was closed in June 2006 after confirmation boring data indicated that petroleum hydrocarbon concentrations in soil and groundwater beneath the site were significantly reduced.¹⁶

Four of the above six sites have been identified as having the potential to impact the project site because of contaminated soil or groundwater at these sites. These sites are located adjacent to the project site and have had significant contamination. They include the San Fernando Valley NPL site, the Los Feliz Fuel Stop site, the Shell Service Station site, and the Unocal #5140 site. However, as noted above, the Los Feliz Fuel Stop site and the Unocal #5140 site are now

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ *Ibid.*

considered not to pose a threat of contamination. The remaining two sites described above have significant contamination but are unlikely to impact the Subject property. They are located south of the project boundaries, and groundwater contamination in this area tends to migrate east-southeast.

I-5 is located beneath a portion of the viaduct complex. The existing off-ramp from northbound I-5 that exits at Glendale Boulevard is located just south of the northbound Glendale Boulevard bridge. There is a landscaped area between I-5, Glendale Boulevard, and the off-ramp, and due to its proximity, this area could contain aerially deposited lead (ADL) from vehicular emissions when leaded gasoline was commonly used.

The viaduct complex contains multiple traffic lanes that are delineated with yellow striping. Prior to 1997, yellow traffic paint, yellow thermoplastic paint, or permanent tapes were known to contain lead chromate as the pigment. Because of this, the striping along Hyperion Avenue, Riverside Drive, and Glendale Boulevard may contain hazardous levels of lead and/or chromium that could affect both the environment and human health.

In some bridges, asbestos-containing materials (ACM) have been used in the joints as seals. A review of the as-built plans for the viaduct complex did not identify the presence of such material; however, its lack of identification in the as-built plans cannot guarantee that ACM is not present.

On some bridges, paint coatings contain lead-based paint (LBP). The existing covered rails are painted, and their removal could result in releases of LBP (if present) in the form of dust and debris. A review of the as-built plans for the viaduct complex did not identify if the coatings are lead-based.

2.9.3 Environmental Consequences

2.9.3.1 Temporary Impacts

Temporary impacts related to hazardous materials encountered during construction could occur if existing laws and regulations governing the identification and handling of such materials are not complied with.

Contaminated Soils and Groundwater

Due to the presence of potential sources of hydrocarbon contamination in groundwater near the project site (past leaks associated with nearby gas stations) and because the TCE and PCE groundwater contamination plume (San Fernando Valley NPL) has extended into the project area, there is a potential for excavations to encounter contaminated groundwater and soils during construction. Because the potential sources of contamination are not located immediately adjacent to the project site, any groundwater contamination that is encountered likely would have migrated to the project site.

The majority of excavations for the project would be relatively shallow for abutment strengthening work and are not expected to encounter groundwater. In addition, other seismic strengthening improvements and roadway improvements to the viaduct complex would not encounter groundwater. Construction of the project would however, require construction of foundations (including installation of piles) for pier and abutment extensions for the widening of the Glendale Boulevard bridges. The installation of piles in the bottom of the Los Angeles River would occur by casting in drilled holes. During the drilling process, contaminated groundwater could seep into the drilled holes, and when the piles are cast with concrete, the contaminated

groundwater would be displaced to the river channel as the concrete fills the bottom of the drilled hole. In addition, the excavated soils may be contaminated. The potential exposure to the contaminated groundwater and possibly contaminated soil by construction workers could pose some health hazards to the workers.

Aerially Deposited Lead (ADL)

Historically, lead-based additives in gasoline, emitted through automobile engine exhaust, have settled onto the adjacent road shoulders and medians. Because the landscaped area where the existing northbound off-ramp from I-5 to Glendale Boulevard would be reconfigured has been subjected to past aerial deposition of lead from vehicular emissions, ADL-containing soils may be encountered during the reconfiguration, which could pose safety hazards to workers or the public.

Lead Chromate Traffic Striping

Prior to 1997, yellow traffic paint, yellow thermoplastic paint, or permanent tapes were known to contain lead chromate as the pigment. These materials have the potential to contain hazardous levels of lead and/or hexavalent chromium that would affect both the environment and human health. The Project would require the removal of existing traffic striping and pavement markings along the viaduct complex. Traffic paint and markers are typically removed using sand blasting or air blasting equipment. Yellow traffic striping is present along the center of Hyperion Avenue along the viaduct complex and Glendale Boulevard (near the location of the new signalized intersection at the I-5 off-ramp). Because the existing yellow traffic paint on the project site may contain lead chromate pigments, and if removed by sand blasting, aerial dispersion of the material could occur; there is a potential for adverse health impacts to workers and the public.

Asbestos-Containing Materials (ACM)

As discussed above, there is the potential for ACM to be present in bridge joints. If present, ACM could be disturbed during demolition activities associated with the widening of the northbound and southbound Glendale Boulevard bridges (over the Los Angeles River), which could result in adverse impacts.

Lead-Based Paint (LBP)

As discussed above, portions of the viaduct complex that would be removed have been painted, such as the covered rails, and there is the potential that some layers are lead-based. If present, LBP could be disturbed during demolition activities associated with the removal of the existing rails along the viaduct complex, which could result in adverse impacts.

2.9.3.2 Permanent Impacts

Once roadway improvements are constructed, traffic operations on these roadways would not result in the generation of hazardous wastes that could impact the corridor. Likewise, motorists would not impact the existing sites in the vicinity of the roadways simply by driving through the area.

Occasional vehicular accidents could result in the release of hazardous waste or materials, such as fuels for motor vehicles or hazardous material cargo. The potential for such releases is not considered substantial, as all hazardous materials must be properly manifested, packaged, labeled, and transported in accordance with federal regulations (49 CFR 170-179). Compliance with other federal, state, and local laws and regulations (e.g., driver training and licensing and USDOT packaging requirements) would further serve to limit potential hazardous materials

releases. In addition, releases would be expected to be cleaned up as part of the established emergency response to each vehicle crash and would not constitute adverse impacts.

Furthermore, the center median barrier, realigned I-5 off-ramp, and wider Glendale Boulevard bridges are expected to decrease the potential for vehicular accidents along the viaduct complex.

2.9.3.3 Cumulative Impacts

Although the proposed project could result in adverse impacts from encountering contaminated groundwater or soil, from the removal of lead chromate based traffic paint, from handling ADL-affected soils, and from encountering ACM or LBP during demolition/construction, these impacts would be avoided or mitigated, as described below. Since no other projects are known that could result in additive hazardous material impacts, no adverse cumulative impacts related to hazardous wastes/materials are anticipated to occur under the proposed project.

2.9.3.4 Avoidance, Minimization, and/or Mitigation Measures

Existing federal and state laws and regulations provide stringent control over hazardous waste management, as well as prevention and response to spills and releases. Construction of the proposed project or any alternative would be required to comply with all existing hazardous waste laws and regulations. To ensure that the potential to encounter contaminated groundwater or soil are planned for, the following avoidance measures would be implemented in compliance with laws and regulations.

HZ-1: Contaminated Ground Water. Conduct groundwater sampling and testing during the design phase to determine the level of groundwater contamination and the depths. Require the selected contractor to prepare and implement a management plan in the event that hazardous wastes, petroleum hydrocarbons, or contaminated groundwater are encountered during construction. Implementation could require the contractor to utilize a photo-ionization detector (PID) or other organic vapor detector during all pile drilling/boring activities and to employ appropriate worker protection measures should detected levels exceed Cal-OSHA standards. Groundwater that seeps into the drilled hole for pile installations would be pumped out of the pile hole as or before it is filled with concrete. The contaminated water would be temporarily stored, and the water removed (vacuum truck) or treated and discharged under permit from the City or LARWQCB, depending on the discharge outlet. All contaminated groundwater, contaminated soil, and hazardous wastes and debris encountered or generated during construction would be properly excavated, stored, tested, treated and/or disposed in accordance with all federal, state, and local laws and regulations.

HZ-2: Lead Chromate Traffic Paint. Perform representative sampling and testing of yellow traffic paint along the viaduct complex (during the project design phase or prior to construction) that could be affected by construction. If lead, lead chromate, or other hazardous materials in the paint exceed standards, abate the traffic paint (prohibit its removal by sand-blasting or grinding methods) and properly dispose of the material prior to construction.

The measure below would be required to avoid or minimize potential hazardous waste impacts related to encountering ADL in the landscaped area where the off-ramp from northbound I-5 to Glendale Boulevard would be reconfigured.

HZ-3: Aerially Deposited Lead. During design of the northbound I-5 off-ramp reconfiguration to Glendale Boulevard, perform representative sampling and testing of the area ramp alignment area for the presence of ADL. If ADL is present above action levels, abate the ADL-contaminated soil, in accordance with all applicable laws and regulations, prior to construction of the reconfigured ramp. A Health and Safety Plan by Contractor would be required pursuant to Contract General Conditions/General requirements (GC/GR).

The measure below would be required to avoid disturbing ACM if present in the bridge joints and/or LBP (if present) that could be affected by demolition/construction activity.

HZ-4: Asbestos-Containing Materials or Lead-Based Paint. Perform a survey (during the design phase or prior to construction) of the bridge joints that could be disturbed from demolition or construction activity to determine if they contain asbestos. In addition, conduct a survey for the presence of LBP in areas of the viaduct complex to be removed or physically affected. If present, remove the ACM and/or LBP prior to or as part of the demolition process, in accordance with all applicable laws, regulations, and rules. A Health and Safety Plan by Contractor would be required pursuant to GC/GR requirements.

2.9.4 No Build Alternative Impacts

The No Build Alternative would result in no new or additional impacts related to hazardous waste/material relative to existing conditions.

2.10 Air Quality

This section addresses the potential impacts to air quality associated with the implementation of the proposed project.

2.10.1 Regulatory Setting

The Federal Clean Air Act (FCAA) as amended in 1990 is the federal law that governs air quality. The California Clean Air Act of 1988 is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and California Air Resources Board (ARB), set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and State ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns. The criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM, broken down for regulatory purposes into particles of 10 micrometers or smaller – PM₁₀ and particles of 2.5 micrometers and smaller – PM_{2.5}), lead (Pb), and sulfur dioxide (SO₂). In addition, State standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H₂S), and vinyl chloride. These standards can be found in Table 2.10-1. The NAAQS and State standards are set at a level that protects public health with a margin of safety, and are subject to periodic review and revision. Both State and Federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

Federal and State air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). In addition to this type of environmental analysis, a parallel “Conformity” requirement under the FCAA also applies.

FCAA Section 176(c) prohibits the U.S. Department of Transportation and other Federal agencies from funding, authorizing, or approving plans, programs or projects that are not first found to conform to State Implementation Plan (SIP) for achieving the goals of Clean Air Act requirements related to the NAAQS. “Transportation Conformity” takes place on two levels: the regional, or planning and programming, level, and the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 CFR 93 govern the conformity process.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), and in some areas sulfur dioxide (SO₂). California has attainment or maintenance areas for all of these transportation-related “criteria pollutants” except SO₂, and also has a nonattainment area for lead (Pb). However, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all of the transportation projects planned for a region over a period of at least 20 years for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity is based on use of travel demand and air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that

requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), such as the Southern California Association of Governments (SCAG); Federal Highway Administration (FHWA); and Federal Transit Administration (FTA), make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and “open to traffic” schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is “nonattainment” or “maintenance” for carbon monoxide (CO) and/or particulate matter (PM₁₀ or PM_{2.5}). A region is “nonattainment” if one or more of the monitoring stations in the region measures violation of the relevant standard and U.S. EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by U.S. EPA and are then called “maintenance” areas. “Hot spot” analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot spot analysis. In general, projects must not cause the “hot spot”-related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Pollutant	Averaging Time	California Standards ⁽¹⁾	National Standards ⁽²⁾	
			Primary ⁽³⁾	Secondary ⁽⁴⁾
Ozone (O ₃)	1-Hour	0.09 ppm (180 µg/m ³)	– ⁽⁵⁾	Same as Primary Standard
	8-Hour	0.070 ppm (137 µg/m ³)	0.075 ppm (147 µg/m ³)	
Carbon Monoxide (CO)	1-Hour	20 ppm (23,000 µg/m ³)	35 ppm (40,000 µg/m ³)	–
	8-Hour	9.0 ppm ⁽⁶⁾ (10,000 µg/m ³)	9 ppm (10,000 µg/m ³)	–
Nitrogen Dioxide (NO ₂)	1-Hour	0.18 ppm (338 µg/m ³)	0.100 ppm ⁽⁹⁾ (188 µg/m ³)	–
	Annual Arithmetic Mean	0.03 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as Primary Standard
Sulfur Dioxide (SO ₂)	1-Hour	0.25 ppm (655 µg/m ³)	0.075 ppm ⁽⁷⁾ (196 µg/m ³)	–
	3-Hour	–	–	0.5 ppm (1,300 µg/m ³)
	24-Hour	0.04 ppm (105 µg/m ³)	– ⁽⁸⁾	–

Pollutant	Averaging Time	California Standards ⁽¹⁾	National Standards ⁽²⁾	
			Primary ⁽³⁾	Secondary ⁽⁴⁾
Respirable Particulate Matter (PM ₁₀)	24-Hour	50 µg/m ³	150 µg/m ³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m ³	–	
Fine Particulate Matter (PM _{2.5})	24-Hour	–	35 µg/m ³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m ³	12.0 µg/m ³	15 µg/m ³
Sulfates	24-Hour	25 µg/m ³	–	–
Lead (Pb)	30-Day Average	1.5 µg/m ³	–	–
	Rolling 3-Month Average	–	0.15 µg/m ³	Same as Primary Standard
Hydrogen Sulfide (H ₂ S)	1-Hour	0.03 ppm (42 µg/m ³)	–	–
Vinyl Chloride	24-Hour	0.01 ppm (26 µg/m ³)	–	–
Visibility Reducing Particles	8-Hour (10 A.M. to 6 P.M., PST)	See Footnote ⁽¹⁰⁾	–	–

⁽¹⁾California standards for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, PM₁₀, PM_{2.5}, and visibility-reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded.

⁽²⁾National standards (other than O₃, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The O₃ standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For NO₂, the 1-hour standard is attained when the 3-year average of the 98th percentile of the daily maximum 1-hr average at each monitor within an area does not exceed 0.1 ppm. For SO₂, the 1-hour standard is attained when the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area does not exceed 0.075 ppm.

⁽³⁾National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

⁽⁴⁾National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

⁽⁵⁾The federal 1-hour ozone standard was revoked by USEPA in June 2005.

⁽⁶⁾ Rounding to an integer value is not allowed for the State 8-hour CO standard. A violation occurs at or above 9.05 ppm.

⁽⁷⁾ EPA finalized a 1-hour SO₂ standard of 75 ppb in June 2010. Nonattainment areas have not yet been designated as of September 2012.

⁽⁸⁾On June 2, 2010, the USEPA established a new 1-hour SO₂ standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The USEPA also revoked both the existing 24-hour SO₂ standard of 0.14 ppm and the annual primary SO₂ standard of 0.030 ppm, effective August 23, 2010.

⁽⁹⁾Final 1-hour NO₂ NAAQS published in the Federal Register on February 9, 2010, effective March 9, 2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause redesignation to nonattainment in some areas after 2016.

⁽¹⁰⁾Visibility of 10 miles or more at relative humidity is less than 70 percent. In 1989, the ARB converted the general statewide 10-mile visibility standard to an instrumental equivalent, which is "extinction of 0.23 per kilometer."

ppm = parts per million; µg/m³ = micrograms per cubic meter

Source: U.S. Environmental Protection Agency (2011); California Air Resources Board (2013).

2.10.2 Affected Environment

The Project site is located in the greater Los Angeles area within the South Coast Air Basin (SCAB). The SCAB encompasses all or portions of Los Angeles, Orange, San Bernardino, and Riverside Counties. The SCAB is bordered by the Pacific Ocean to the southwest and coastal mountains to the north and east. The following air quality sections were written with reference to the *Air Quality Technical Study Glendale Boulevard-Hyperion Avenue Complex of Bridges Improvement Project* (July 2012).

2.10.2.1 Climate and Meteorology

An important consideration in any atmospheric analysis is the local climate of the area under study. The following sections discuss the climatology and meteorology of the Southern California area to assist in understanding the conditions that may be favorable or unfavorable to the dispersion of pollutants emitted in association with this project.

Warm dry summers, low precipitation, and mild winters characterize the overall climate within the SCAB. The combination of topography, summer sunshine, temperate winters, infrequent rainfall, light winds, and moderate humidity, contribute to the SCAB's air pollution conditions. The region experiences frequent temperature inversions where air temperatures that normally decrease with height instead increase with increasing altitude. Temperature inversions, prevent air close to the ground surface from mixing with the air aloft. The resulting condition traps air pollution near the ground. The condition is exacerbated during the summer due to the interaction between the ocean surface and lower layer atmosphere, creating a moist marine layer, preventing pollutants from mixing and dispersing upwards.

Particulate matter with diameters less than 10 micrometers and 2.5 micrometers (PM₁₀ and PM_{2.5}, respectively) cause considerable inhalation health concerns throughout the year. The dry and moderately windy summers create windblown particulate matter. During the winter months, overcast skies and marine layers help to trap PM₁₀ and PM_{2.5}, which contributes to keeping particulate matter levels elevated in the SCAB.

Photochemical smog results from a chemical reaction in the air between hydrocarbons and nitrogen dioxide (NO₂) under strong sunlight to form ozone (O₃). Thus, the worst smog conditions occur during the summer. Light westerly daytime summer winds that drive air pollution inland toward the mountains further influence local smog concentrations in the SCAB.

During the fall and winter seasons, the air pollutants of principal concern are carbon monoxide (CO) and NO₂. High NO₂ levels typically occur during autumn and winter on days having summer-like conditions. CO concentrations are highly localized and, because most CO emissions are from motor vehicles, the highest CO concentrations are associated with heavy traffic.

The South Coast Air Quality Management District (SCAQMD) maintains monitoring stations throughout the SCAB to observe progress toward attainment of air quality standards. The monitoring station representative of the project site is the Burbank West Palm Avenue Station located at 228 West Palm Avenue in Burbank. Table 2.10-2 shows a five-year summary (2006 through 2010) of data collected at this station for nonattainment air pollutants (CARB, 2011a).

Table 2.10-2: Summary of Ambient Monitoring Levels at the Burbank West Palm Avenue Station

Pollutant	Standard/Exceedance	2006	2007	2008	2009	2010
CO (ppm)	Year Coverage (%)	99	97	97	97	40
	Max. 1-hour Concentration (ppm)	4	4	3	3	ND
	Max. 8-hour Concentration (ppm)	3.38	2.78	2.48	2.89	2.33
	# Days>Federal 1-hour Std. of >35 ppm	0	0	0	0	0
	# Days>Federal 8-hour Std. of >9 ppm	0	0	0	0	0
	# Days>California 8-hour Std. of >9.0 ppm	0	0	0	0	0
	O ₃ (ppm)	Year Coverage (%)	99	97	98	97
Max. 1-hour Concentration (ppm)		0.166	0.116	0.133	0.145	0.111
Max. 8-hour Concentration (ppm)		0.129	0.097	0.110	0.097	0.084
# Days>Federal 8-hour Std. of >0.075 ppm		22	13	17	14	4
# Days>California 1-hour Std. of >0.09 ppm		25	13	20	16	3
# Days>California 8-hour Std. of >0.07 ppm		34	19	34	28	8
NO ₂ (ppm)		Year Coverage (%)	100	96	97	85
	Max. 1-hour Concentration (ppm)	0.103	0.087	0.105	0.088	0.082
	Annual Average (ppm)	0.027	0.029	0.029	0.027	ND
	# Days>California 1-hour Std. of >0.18 ppm	0	0	0	0	0
SO ₂ (µg/m ³)	Year Coverage (%)	96	98	97	49	39
	Max. 24-hour Concentration (ppm)	0.004	0.003	0.003	0.003	0.003
	Annual Average (ppm)	0.000	0.001	0.000	ND	ND
	# Days>California 24-hour Std. of >0.04 ppm	0	0	0	0	0
PM ₁₀ (µg/m ³)	Year Coverage (%)	88	44	86	97	95
	Max. 24-hour Concentration (µg/m ³)	71.0	109.0	66.0	80.0	51.0
	#Days>Fed. 24-hour Std. of >150 µg/m ³	ND	ND	0.0	0.0	ND
	#Days>California 24-hour Std. of >50 µg/m ³	ND	ND	ND	60.9	ND
	Annual Average (µg/m ³)	31.7	24.0	35.6	39.2	27.5
PM _{2.5} (µg/m ³)	Year Coverage (%)	86	80	95	100	100
	Max. 24-hour Concentration (µg/m ³)	50.7	56.5	68.9	67.5	43.7
	State Annual Average (µg/m ³)	ND	ND	13.9	14.3	12.4

#Days>Fed. 24-hour Std. of >35 µg/m3	22.1	ND	6.1	11.8	4.0
Annual Average (µg/m3)	16.5	16.9	13.9	15.3	12.8

Notes:

Hydrogen sulfide, vinyl chloride, and visibility-reducing particles are not monitored in the SCAB.
ND = No Data, or not enough data.

Sources:

<http://www.aqmd.gov/smog/historicaldata.htm>
<http://www.arb.ca.gov/adam/>

2.10.2.2 Attainment Status and State Implementation Plans

As mentioned in Section 2.10.1, the greater Los Angeles area within the South Coast Air Basin (SCAB) is in federal attainment or maintenance for CO, NO₂, and SO₂. Table 2.10-3 summarizes both the current Federal and State attainment status for the greater Los Angeles area within the SCAB.

Table 2.10-3: Federal and State Attainment Status for the South Coast Air Basin

Pollutant	Federal Classification	State Classification
Ozone (O ₃)	Non-Attainment (Extreme)	Non-Attainment
Particulate Matter (PM ₁₀)	Non-Attainment (Serious)	Non-Attainment
Fine Particulate Matter (PM _{2.5})	Non-Attainment	Non-Attainment
Carbon Monoxide (CO)	Maintenance	Attainment
Nitrogen Dioxide (NO ₂)	Maintenance	Non-Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment
Lead (Pb) ¹	Non-Attainment	Non-Attainment

¹For the Los Angeles County portion of the SCAB.

Sources: U.S. Environmental Protection Agency, "California 8-Hour Ozone Nonattainment Areas (1997 Standard)." Green Book. Internet URL: www.epa.gov/air/oaqps/greenbook/ca8.html. Updated December 2010. Last accessed: March 8, 2011; U.S. Environmental Protection Agency, "Particulate Matter (PM-10) Nonattainment State/Area/County Report As of December 17, 2010." Green Book. Internet URL: <http://www.epa.gov/air/oaqps/greenbook/pncs.html#CALIFORNIA>. Last accessed: March 8, 2011; U.S. Environmental Protection Agency, "Particulate Matter (PM-2.5) 2006 Standard Nonattainment State/Area/County Report as of December 17, 2010." Green Book. Internet URL: <http://www.epa.gov/air/oaqps/greenbook/rncs.html#CALIFORNIA>. Last accessed: March 8, 2010; California Air Resources Board, "Area Designations Maps/State and National." Internet URL: www.arb.ca.gov/desig/adm/adm.htm. Last accessed March 8, 2011.

The South Coast Air Quality Management District (SCAQMD) is presently guided by the following portions of the California State Implementation Plan (SIP) for nonattainment or maintenance criteria pollutants:

- 2007 Ozone SIP
- 2003 PM₁₀ SIP
- 2007 PM_{2.5} SIP
- 2005 CO SIP (Maintenance Plan)
- 2007 NO₂ SIP (Maintenance Plan)

The most recently approved Air Quality Management Plan (AQMP) was adopted by the SCAQMD Governing Board on June 1, 2007 and revised in October 2007. The 2007 AQMP projects attainment of the federal 8-hour O₃ and 24-hour PM_{2.5} standards by 2023 and 2014, respectively. However, to meet those targets, it is necessary to supplement the identified control measures with undefined long-term (“black box”) measures that will reduce emissions by approximately 27 tons per day of VOC and 190 tons per day of NO_x (SCAQMD, 2007a). Given the uncertainty in its ability to find effective black box measures, the SCAQMD Board asked CARB to request of USEPA that the federal 8-hour ozone classification be changed to “extreme,” which would modify the attainment deadline to June 15, 2024 (SCAQMD, 2007b). When CARB submitted the October 2007 version of the AQMP to USEPA as a SIP revision, it concurred with the SCAQMD’s request for reclassification of the 8-hour ozone status from severe 17 to extreme (CARB, 2007). On May 5, 2010, USEPA granted the request (Federal Register, 2010).

2.10.3 Environmental Consequences

The proposed project is a non-capacity enhancing project that would not increase the number of traffic lanes; rather, it would provide safety improvements to motorists and pedestrians that use the viaduct complex, seismic improvements to increase the reliability of viaduct complex to withstand earthquakes, slightly wider Glendale Boulevard bridges over the Los Angeles River to provide shoulders and standard traffic lane widths, reconfiguration and signalization of the northbound I-5 off-ramp to Glendale Boulevard to improve site distance and allow left-turns on to southbound Glendale Boulevard, a new access point to the Los Angeles River bike path, and replacement balustrades that replicate the original balustrade design on the complex. The following sections describe regional conformity, project level conformity, and other air quality impacts.

2.10.3.1 Temporary Impacts

2.10.3.1.1 Issues to Consider

Construction Impacts

Short-term increases in air pollutants would result from construction activities associated with the project. Equipment would be used during site preparation; removal of the rails along the viaduct complex; and excavation, demolition, and paving involved with the construction of substructure and superstructure improvements. These construction activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of pollutants, namely NO_x, CO, PM₁₀, PM_{2.5}, SO_x, and VOC. Fugitive dust (PM₁₀) would be generated during excavation and other construction activities as well. Additionally, construction of the proposed project would be phased to keep the viaduct complex open to traffic.

Because of the need to keep Hyperion Avenue, Glendale Boulevard (both northbound and southbound), and Riverside Drive operational during construction (refer to Section 2.4), construction would be phased over the entire construction duration (30 months). However, to keep the overall construction duration within reasonable limits, concurrent construction of specific phases would be necessary. From an air quality standpoint, the worst-case construction scenario would include the following phases:

- Pedestrian Bridge (see Section 2.4) and Off-ramp Realignment

- Hyperion Avenue retrofit and substructure retrofit,
- Glendale Boulevard excavation for widening

Although the contractor would have discretion in scheduling all phases of the project to meet the construction schedule, these concurrent activities are assumed because they represent the most intensive phases of work and the maximum overlap under worst-case conditions. Emissions associated with these construction phases were estimated using projected construction activities, estimated hours of equipment operations, and estimated load factors of equipment for each activity. Specific construction information consisted of the following:

- Number of pieces and types of construction equipment
- Equipment load factors (percent of operations under load conditions)
- Equipment usage factors (amount of time the equipment is used during the day)
- Number of daily construction workers onsite during a typical peak construction day
- Total volume of excavated material
- Construction start date: June 2014
- Construction end date: December 2016
- Construction duration: 2.5 years (30 months)

The construction emission calculations followed the general procedures in the SCAQMD CEQA Air Quality Handbook (SCAQMD, 1993) and incorporated the emission factors from OFFROAD2007 for the construction equipment, EMFAC2007 for the vehicles, and CalEEMod (Version 2011.1) for fugitive dust.

Table 2.10-4 provides a summary of maximum daily emissions by source for project-related construction activities. These values represent the maximum daily emissions calculated for each source, and include the installation of a steel-construction pedestrian bridge (see Section 2.4) as a mitigation measure to accommodate the community's desire to maintain pedestrian access across the Los Angeles River during construction. Table 2.10-4 also identifies the maximum daily emissions when maximum overlap would occur. It should be noted that the maximum daily emissions would not be sustained over the entire construction duration; rather, they would exist only when construction phase overlap peaks. The maximum combined daily emissions from all sources for the project-related construction activities and applicable SCAQMD significance thresholds (SCAQMD, 1993) are also provided.

Table 2.10-4: Maximum Daily Construction Emissions

	Pounds/ Day					
	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	VOC
Daily Maximum (lb/day) ^a	39	65	0.1	11	5	18
SCAQMD Mass Daily Thresholds (lb/day)	550	100	150	150	55	75
Impact?	No	No	No	No	No	No

Source: UltraSystems Environmental, 2011.

^a Bolded values indicate exceedance of the SCAQMD thresholds.
 ROG = reactive organic gases

The major sources contributing to the NO_x emissions would be construction equipment exhaust and, to a lesser extent, offsite construction-related vehicle exhaust. Although the maximum daily NO_x emissions come close to the SCAQMD threshold, it is unlikely that the NO_x emissions will exceed the daily threshold because the construction analysis is considered conservative.

As shown in Table 2.10-4, none of the criteria pollutant emissions are predicted to exceed daily significance thresholds for construction of the Glendale-Hyperion Viaduct Complex improvements; thus the construction emissions impacts would be less than significant and no avoidance, minimization or mitigation measures are required during construction.

Comparison to Localized Significance Thresholds

In addition to the regional significance thresholds discussed above, the SCAQMD has developed localized significance thresholds (LSTs) for use in CEQA air quality impacts assessments. For project sites that are 5 acres or less, the SCAQMD-developed LSTs can be used to determine whether a project would generate significant localized air quality impacts (SCAQMD, 2008) in lieu of conducting a dispersion modeling analysis. As shown in Table 2.10-5, none of the construction criteria pollutant emissions are predicted to exceed the localized significance thresholds. Therefore, localized impacts from criteria pollutant emissions would result in a less than significant impact to air quality.

Table 2.10-5: Maximum Daily Construction Emissions Comparison to LSTs

	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	ROG
Daily Maximum (lb/day) ^a	36	65	0	5	3	0
SCAQMD Localized Thresholds (lb/day)	1695	123	NA	36	11	NA
Impact?	No	No	NA	No	No	NA

Source: UltraSystems, 2011

^a Bold values indicate exceedance of the SCAQMD thresholds.
 NA = Not applicable, LST has not been established.

Approximately 44 percent of the PM₁₀ and PM_{2.5} emissions result from fugitive dust. Project construction activities will be required to comply with fugitive dust control measures listed in

SCAQMD Rule 403 (Fugitive Dust). However, as Tables 2.10-3 and 2.10-4 indicate, even without Rule 403, the emissions from PM₁₀ and PM_{2.5} are less than the SCAQMD thresholds. Therefore, localized air quality impacts from PM₁₀ and PM_{2.5} emissions are expected to be less than significant without Rule 403.

Other Pollutants

Another pollutant of potential concern in assessing localized air quality impacts associated with construction activities is naturally occurring asbestos. Asbestos is a toxic air contaminant that is regulated under the Asbestos Airborne Toxic Control Measure (AATCM), which was adopted by the California Air Resources Board (CARB) in 1990 and amended in 2000. The AATCM states that allowable asbestos content in surfacing materials must be less than 0.25 percent, effective spring 2001. In addition to surfacing materials, asbestos may occur naturally in serpentinite and ultramafic rock and can be released when the rock is broken or crushed.

According to the Department of Conservation, Division of Mines and Geology, the project is in a county that contains serpentinite or ultramafic rock (Department of Conservation, 2000). However, any serpentinite or ultramafic rock found in Los Angeles County is restricted to the Catalina Islands. The surficial geology of the Los Angeles area is composed of quaternary alluvial material that consists of sands, gravels, silts, and clays but not ultramafic or serpentinite material. Therefore, fugitive asbestos from naturally occurring materials would not be emitted in significant quantities during construction or operation of the Glendale-Hyperion Viaduct Complex. Surfacing materials would also not contain more than 0.25 percent asbestos; therefore, the proposed project would not cause a significant impact on air quality from emissions of asbestos.

2.10.3.2 Permanent Impacts

2.10.3.2.1 Regional Conformity

Federally funded or approved transportation projects, in general, are subject to the transportation conformity requirements of the federal Clean Air Act (CAA) and to evaluation under the National Environmental Policy Act (NEPA). Transportation conformity requires two conformity determinations (i) regional conformity determination and (ii) project level conformity determination in nonattainment and maintenance areas for CO, PM₁₀, and PM_{2.5}.

This project is exempt from regional conformity requirements because it is exempt under 40 CFR §93.127 from regional emissions analysis as it would be classified as an intersection signalization project. Separate listing of the project in the Regional Transportation Plan and Transportation Improvement Program, and their regional conformity analyses, is not necessary, although the project is listed in the 2011 FTIP. (See below.) The project will not interfere with timely implementation of Transportation Control Measures identified in the applicable SIP and regional conformity analysis.

2.10.3.2.2 Project Level Conformity

The proposed project is included in the 2011 FTIP under Project IDs LA0F007, LA0F008, and LA0F009. Because the proposed project would not increase traffic throughput or increase the capacity of the viaduct complex (see Table 2.10-6 and Table 2.10-7), no increases in criteria pollutants would result that could cause adverse impacts to air quality. Furthermore, operation of

the proposed project would not result in an incremental increase of criteria pollutants relative to the No Project alternative.

The reconfiguration of the northbound I-5 off-ramp to Glendale Boulevard would allow exiting motorists the option of making a left-turn on to southbound Glendale Boulevard, which would eliminate the current approximately 0.5-mile movement whereby motorists exiting the northbound off-ramp have to make a right turn onto northbound Glendale Boulevard, weave to the far left lane of Glendale Boulevard and make a U-turn at Glenfeliz Boulevard to southbound Glendale Boulevard. The reconfigured off-ramp would therefore result in a reduction in total vehicle miles traveled (VMT) and a corresponding reduction in related vehicle emissions, including greenhouse gases. (See Table 2.10-8.)

The reconfiguration of the northbound I-5 off-ramp to Glendale Boulevard would require replacement of the current stop-controlled approach intersection with a new signalized intersection. Without the signalization, the intersection would operate at a Level of Service (LOS) D; however, with the new signalization, the intersection would operate at a (LOS) B in the evaluation year 2036. Carbon monoxide and particulate matter hotspots are a concern when intersections operate at unacceptable levels of service, generally LOS E or F. Because the new signalized intersection at the reconfigured northbound I-5 off-ramp to Glendale Boulevard would operate at a free flowing level (LOS B), no CO or particulate matter hotspots are expected to occur from project operation. (See Table 2.10-9.) Similarly, this new intersection is not expected to result in PM₁₀ or PM_{2.5} hotspots because it would operate at LOS B in the future. The following discussions present the documentation for project level conformity for CO and PM hotspots.

Table 2.10-6: Peak Hour Traffic Volume – Build Alternative

Location	Existing (2011)			Opening Year (2016)			RTP Horizon Year (2036)		
	A.M./P.M. (1,000's)	ADT (1,000's)	Truck ADT (1,000's)	A.M./P.M. (1,000's)	ADT (1,000's)	Truck ADT (1,000's)	A.M./P.M. (1,000's)	ADT (1,000's)	Truck ADT (1,000's)
I-5 Mainline	14.1/15.1	240.7	No Data	14.8/15.8	253	No Data	23.2/23.2	328.8	No Data
I-5 NB Off-Ramp	0.5/0.7	7.4	0.1	0.6/0.8	7.8	0.2	0.7/0.9	9.5	0.2
I-5 NB On- Ramp	0.3/0.3	4.1	0.1	0.4/0.3	4.3	0.1	0.4/0.4	5.2	0.1
Glendale Boulevard, NB	0.3/0.5	5.9	0.1	0.3/0.5	6.2	0.1	0.4/0.6	7.6	0.2
Glendale Boulevard, SB	0.7/0.7	8	0.2	0.7/0.7	8.4	0.2	1/1	10.3	0.2
Hyperion Avenue, NB	0.8/1.3	14.1	0.3	0.8/1.4	14.9	0.3	1/1.7	18.1	0.4
Hyperion Avenue, SB	1.3/1.1	13.9	0.3	1.4/1.1	14.6	0.3	1.7/1.4	17.8	0.4

Source: MGE Engineering, Inc., 2012, Email communication from Jeff Crovitz, MGE Engineering, Inc. and Benjamin Wong, UltraSystems Environmental, Inc. (November 16, and 18, 2011), and UltraSystems Environmental, Inc.

Note: Opening Year volumes were based on a conservative increase of 1% per year.

Table 2.10-7: Peak Hour Traffic Volume – No Build Alternative

Location	Existing (2011)			Opening Year (2016)			RTP Horizon Year (2036)		
	A.M./P.M. (1,000's)	ADT (1,000's)	Truck ADT (1,000's)	A.M./P.M. (1,000's)	ADT (1,000's)	Truck ADT (1,000's)	A.M./P.M. (1,000's)	ADT (1,000's)	Truck ADT (1,000's)
I-5 Mainline	14.1/15.1	240.7	No Data	14.8/15.8	253	No Data	23.2/23.2	328.8	No Data
I-5 NB Off- Ramp	0.5/0.7	7.4	0.1	0.6/0.8	7.8	0.2	0.7/0.9	9.5	0.2
I-5 NB On- Ramp	0.3/0.3	4.1	0.1	0.4/0.3	4.3	0.1	0.4/0.4	5.2	0.1
Glendale Boulevard, NB	0.3/0.5	5.9	0.1	0.3/0.5	6.2	0.1	0.4/0.6	7.6	0.2
Glendale Boulevard, SB	0.7/0.7	8	0.2	0.7/0.7	8.4	0.2	1/1	10.3	0.2
Hyperion Avenue, NB	0.8/1.3	14.1	0.3	0.8/1.4	14.9	0.3	1/1.7	18.1	0.4
Hyperion Avenue, SB	1.3/1.1	13.9	0.3	1.4/1.1	14.6	0.3	1.7/1.4	17.8	0.4

Source: MGE Engineering, Inc., 2012, Email communication from Jeff Crovitz, MGE Engineering, Inc. and Benjamin Wong, UltraSystems Environmental, Inc. (November 16, and 18, 2011), and UltraSystems Environmental, Inc.

Note: Opening Year volumes were based on a conservative increase of 1% per year.

Table 2.10-8: Daily Peak Hour VMT and Emissions Reduction (U-turn Versus Left-turn) From Northbound I-5 Off-ramp Signalization

	Emissions (lb/day)							
	Total VMT	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	ROG	CO ₂
Off-ramp Opening Year 2015								
U-turn	83	0.47	0.12	0.00	0.01	0.01	0.05	84.39
Left-turn	4	0.02	0.01	0.00	0.00	0.00	0.00	4.08
Reduced	79	0.45	0.11	0.00	0.01	0.00	0.05	80.30
RTP Horizon Year 2036								
U-turn	102	0.24	0.07	0.00	0.01	0.01	0.03	87.86
Left-turn	5	0.01	0.00	0.00	0.00	0.00	0.00	4.25
Reduced	97	0.23	0.06	0.00	0.01	0.01	0.03	83.61

Source: Email communication from Jeff Crovitz, MGE Engineering, Inc. and Benjamin Wong, UltraSystems Environmental, Inc. (October 20, 2011), EMFAC2011-SG, and UltraSystems Environmental, Inc.

Note:

Estimations based on left-turn peak hour (P.M.) volume traffic counts
Intersection signalization will be constructed first and is expected to open in 2015

Table 2.10-9: Level of Service (LOS) at I-5 NB Off-ramp – Build Versus No-Build Alternative (RTP Horizon Year: 2036)

Alternative	A.M. Peak Hour	P.M. Peak Hour
Existing, Unsignalized (2011)	B	C
Build, Signalized (2036) [1 Left Turn + 1 Right Turn]	B	C
Build, Signalized (2036) [1 Shared Left/Right + 1 Right Turn]	A	B
No-Build, Unsignalized (2036)	B	D

Source: MGE Engineering, Inc., 2012

CO Hotspots

The USEPA redesignated the SCAB as attaining the federal CO standards effective June 11, 2007. Under Section 175A of the Clean Air Act, however, this means that the SCAB is a maintenance area for CO. According to the Transportation Conformity Regulation (40 CFR Part 93 Subpart A), maintenance areas must demonstrate project level conformity for CO. Project level conformity for CO is demonstrated by evaluating the potential for a project to create CO hot spots.

Localized CO impacts resulting from the proposed project were evaluated following the California Department of Transportation (Department) guidance document, Transportation Project Level Carbon Monoxide Protocol (CO Protocol) (UCDITS 1997). The CO Protocol includes two conformity requirement decision flow charts: Figure 1, Requirements for New

Projects, and Figure 3, Local CO Analysis. The following discussion presents the questions from the flow charts and answers for the proposed project.

Responses to Questions from Requirements for New Projects

3.1.1 Is the project exempt from all emissions analyses?

No. The proposed project is not included in the list of projects exempt in Table 1 of the CO Protocol.

3.1.2 Is the project exempt from regional emissions analysis?

Yes. The project is included in the list of projects exempt from regional emissions analysis in Table 2 of the CO Protocol (Intersection signalization projects at individual intersections).

3.1.9 Examine local impacts. (Proceed to Section 4 of the CO Protocol which includes Figure 3.)

According to the Protocol, the determination of project-level CO impacts should be carried out following the Local Analysis flowchart shown in Figure 3 of the protocol. The responses for the questions in Figure 3 of the CO Protocol follow.

Responses to Questions from Local CO Analysis of the CO Protocol

Level 1: Is the project in a CO nonattainment area?

No. The Project site is located in a state CO attainment area (CARB, 2011b) and in a federal CO maintenance area effective September 27, 2010 (EPA, 2011).

Level 1: Was the area redesignated as “attainment” after the 1990 Clean Air Act?

Yes. The area was redesignated “attainment” effective June 11, 2007 for state area designations, but has since been designated as a maintenance area effective September 27, 2010 for national area designations.

Level 1: Has “continued attainment” been verified with the local air district, if appropriate?

Yes. A CO maintenance plan was approved by USEPA for the project area on May 11, 2007 (Proceed to Level 7).

Level 7: Does the project worsen air quality?

No. The CO Protocol lists three criteria to determine whether a project would worsen air quality:

- a. Would the project increase the percentage of vehicles operating in cold start mode?

No. A cold start occurs when a vehicle is shut-off, and subsequently started any time after the shut-off. Because this Project involves widening and improvements to a roadway, where vehicles may idle, but will seldom shut-off, this Project is not anticipated to increase the percentage of vehicles operating in cold start mode.

- b. Would the project increase traffic volumes greater than 5 percent?

No. Table 2.10-6 and Table 2.10-7 show that there is no increase in traffic volume between the build alternative and no-build alternative.

- c. Would the project worsen traffic flow?

No. Table 2.10-9 shows that the Level of Service (LOS) at the proposed signalized intersection would improve compared to the unsignalized or no-build alternative.

In addition to the answers to 4.7.1, Table 2.10-8 shows how emissions, including CO, will be reduced by realigning and signalizing the intersection of the northbound I-5 off-ramp with Glendale Boulevard versus the no-build alternative. Because the project would not increase traffic volumes (see Table 2.10-6 and Table 2.10-7) and would improve traffic flow, the project would not worsen air quality. Therefore, according to the guidance in the CO Protocol, the analysis is complete; and the project does not need further analysis. The project would not be expected to create a CO hot spot; therefore, the project has demonstrated project-level conformity for CO.

PM Hotspots

At the project level, PM₁₀ and PM_{2.5} must be evaluated because the proposed project is located in a federal nonattainment area for both pollutants. Although this site is also located in a state nonattainment area for PM₁₀ and PM_{2.5}, a guidance document for quantitative assessment of the contribution of individual traffic projects to local violations of the state 24-hour standards does not exist at this time, nor is a local PM₁₀ and PM_{2.5} analysis required at the state level to show project level conformity.

On March 10, 2006, the USEPA published a final rule that established transportation conformity criteria and procedures for determining which projects must be analyzed for local impacts in PM₁₀ and PM_{2.5} nonattainment and maintenance areas. The PM guide was developed to help agencies satisfy the requirements of this rule. Following the PM guide, if a project is found not to be a “project of air quality concern (POAQC),” a qualitative PM_{2.5}/PM₁₀ analysis is not required. Additionally, a quantitative PM hot-spot analysis is only required if the project is of “local air quality concern” (USEPA, 2010).

Based on 40 CFR 93.123(b)(1), the project would likely be found not to be of local air quality concern; however, an interagency consultation process through SCAG determines whether a project requires a qualitative or quantitative analysis. For projects in SCAG, this consultation process involves submitting a completed “PM Conformity Hot Spot Analysis Project Summary Form for Interagency Consultation” to the SCAG Transportation Conformity Working Group (TCWG) monthly meeting.

The proposed project was presented during the January 24, 2012, SCAG TCWG meeting for consideration. At this meeting, the SCAG TCWG concurred the proposed project would not be a POAQC. Additional discussion can be found in the *Air Quality Technical Study Glendale Boulevard-Hyperion Avenue Complex of Bridges Improvement Project* (December 2011).

2.10.3.2.3 Other Issues to Consider

Mobile Source Air Toxics

As part of the NEPA process for highway projects, an analysis of mobile source air toxics (MSATs) must be considered.

In the USEPA final rule, Control of Emissions of Hazardous Air Pollutants from Mobile Sources (66 FR 17235), a group of 21 toxics was identified as mobile source air toxics (FHWA, 2009). USEPA further identified the following subgroup of toxics as priority MSATs: benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1,3-butadiene (FHWA, 2009). These compounds were selected because motor vehicles are significant contributors to the emissions of these pollutants (66 FR 17235).

According to the Federal Highway Administration (FHWA) *Interim Guidance on Air Toxics Analysis in NEPA Documents*, projects with no meaningful MSAT impacts do not require an MSAT analysis (FHWA, 2009). The proposed project would not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that could cause an increase in emissions impacts relative to the no-build alternative. (See Tables 2.10-4 and 2.10-5). Therefore, the project would have minimal air quality impacts from criteria pollutants and is not linked with any special MSAT concerns. In addition, the USEPA projects that between 1999 and 2050, programs to improve vehicle emission standards and gasoline formulations will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 72 percent. Since 1990, the cancer risk from toxic air pollutants has fallen by 45 percent statewide, despite significant industrial growth and a substantial increase in the number of motor vehicles (CARB 2008). Therefore, the proposed project is exempt from the analysis of MSATs.

2.10.3.3 Cumulative Impacts

The proposed project by itself would not generate construction-related emissions that exceed the SCAQMD thresholds. A search using CEQAnet found no projects with overlapping construction periods within 2 miles of the proposed project site (CEQAnet, 2011). As a result, no cumulative construction-related emissions would be expected; thus, the project would result in less than significant cumulative air quality impacts.

The proposed project would not generate additional traffic because roadway capacity would not change as a result of completion of the proposed project. The cumulative impact of all planned transportation impacts, including the proposed project, has been evaluated in the conforming 2008 RTIP. The project also is included in the 2004/2005 HBRR Program. Because the proposed project has been evaluated at a regional level for conformity purposes, the contribution of the project to cumulative regional air quality impacts would not be adverse.

2.10.3.4 Avoidance, Minimization, and/or Mitigation Measures

From the discussion above, the project is expected to have no adverse impacts from air quality emissions.

Project construction activities will be required to comply with fugitive dust control measures listed in SCAQMD Rule 403 (Fugitive Dust).

Most of the construction impacts to air quality are short-term in duration and, therefore, will not result in long-term adverse conditions. Implementation of the following measures, some of which may also be required for other purposes such as storm water pollution control, will reduce any air quality impacts resulting from construction activities:

- The construction contractor shall comply with Caltrans' Standard Specifications in Section 14 (2010).
 - Section 14-9.01 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
 - Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.
- Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emission or at the right-of-way line depending on local regulations.
- Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas.
- Wash off trucks as they leave the right-of-way as necessary to control fugitive dust emissions.
- Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in CA Code of Regulations Title 17, Section 93114.
- Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.
- Near sensitive air receptors, establish Environmentally Sensitive Areas (ESAs) or their equivalent within which construction activities involving the extended idling of diesel equipment would be prohibited, to the extent feasible.

- Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.
- Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation.
- Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.
- Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads.
- Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues and may need to use controls such as dampened straw.

2.10.4 No Build Alternative Impacts

The No Build Alternative would result in no new or additional impacts related to air quality relative to existing conditions. However, the No Build Alternative would not realize the minor beneficial air quality effects of the proposed project, namely, reduced air emissions associated with reduced vehicle miles traveled from the elimination of the right-turn only option at the existing northbound I-5 off-ramp to Glendale Boulevard. (See Table 2.10-8).

2.11 Noise

This section evaluates the potential construction noise impacts on nearby noise-sensitive receptors resulting from the proposed project. For federally funded highway transportation projects, traffic noise must be considered for projects that would result in an increase in traffic or bring traffic closer to sensitive receptors. The proposed project does not involve either; therefore, traffic noise is not discussed further.

2.11.1 Regulatory Setting

Caltrans does not provide specific construction noise criteria. However, the Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*, recommends that construction noise levels normally should not exceed a maximum of 86 dBA between 9:00 p.m. and 6:00 a.m. at a distance of 50 feet from the job site activities. If construction noise is anticipated to be a substantial problem, measures to minimize or eliminate adverse construction noise impacts on the communities should be examined.

The policies and regulations of City of Los Angeles Noise Ordinance concerning the generation and control of construction noise are contained in Chapter IV, Article 1, Section 41.40 of the City of Los Angeles Municipal Code (LAMC). The LAMC places the following restrictions on the hours of construction activities:

“No person shall, between the hours of 9 p.m. and 7 a.m. of the following day, perform any construction or repair work of any kind upon, or any excavating for any building or structure, where any of the foregoing entails the use of any power driven drill, riveting machine excavator or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited during the hours herein specified.”

The section further states that:

“No person, other than an individual homeowner engaged in repair or construction of his single-family dwelling shall perform any construction or repair work of any kind upon, or any earth grading for, any building or structure located on land developed with residential buildings under the provisions of Chapter I of this Code, or perform such work within 500 feet of land so occupied, before 8 a.m. or after 6 p.m. on any Saturday or national holiday nor at any time on any Sunday. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited on Saturdays and on Sundays during the hours herein specified.”

Section 112.05 of Article 2, Chapter XI, specifies that any powered equipment or powered hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet from construction and industrial machinery is prohibited. The 75 dBA noise limitation does not apply when compliance is technically infeasible. The City's code states, “Technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques during the operation of the equipment.” To comply with this ordinance, the demolition equipment to be used for the proposed project would be equipped with noise reduction devices such as mufflers. Use of other techniques, such as shields and sound barriers, would be implemented whenever feasible.

Section 41.40 (j) (Noise Due to Construction) of Article 1, Chapter IV (Public Welfare), specifies that “major public works construction by the City of Los Angeles and its proprietary Departments” may obtain a variance from the Board of Police Commissioners to perform nighttime construction activities otherwise prohibited by 41.40 (c), and that such construction must comply with all conditions of the variance. Additionally, the council district offices and neighborhood councils must be notified.

2.11.2 Affected Environment

2.11.2.1 Fundamentals of Noise

Noise is defined as sound that is loud, unpleasant, unexpected, or undesired. A continuous sound can be described by its frequency (pitch) and its amplitude (loudness). The loudness of sound increases and decreases with increasing and decreasing amplitude. These units are called decibels (dB). Because decibels are logarithmic units, sound pressure levels cannot be added or subtracted by ordinary arithmetic means. When two equal sound levels are combined, they would produce a combined sound level that is 3 dB greater than the original sound level. In other words, sound energy must be doubled to produce a 3 dB increase. If two sound levels differ by 10 dB or more, the combined sound level is equal to the higher sound level (the lower sound level does not increase the higher sound level).

Sound pressure level alone is not a reliable indicator of loudness. The frequency or pitch of a sound also has a substantial effect on how humans respond. In general, the healthy human ear is most sensitive to sounds between 1,000 Hertz (Hz) and 5000 Hz, and it perceives a sound within that range as being more intense than a sound of a higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a weighting adjustment, referred to as the A-scale, has been developed to approximate the frequency response of humans when listening to most ordinary sounds. Noise levels for traffic noise reports are typically reported in terms of A-weighted decibels or dBA. Figure 2-15 show various general noise levels in dBA associated with common sounds.

Noise levels diminish with distance at the rate of approximately 6.0 dBA per doubling of distance. For example, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, then the noise would be 83 dBA at a distance of 100 feet from the noise source, 77dBA at a distance of 200 feet, and so on.

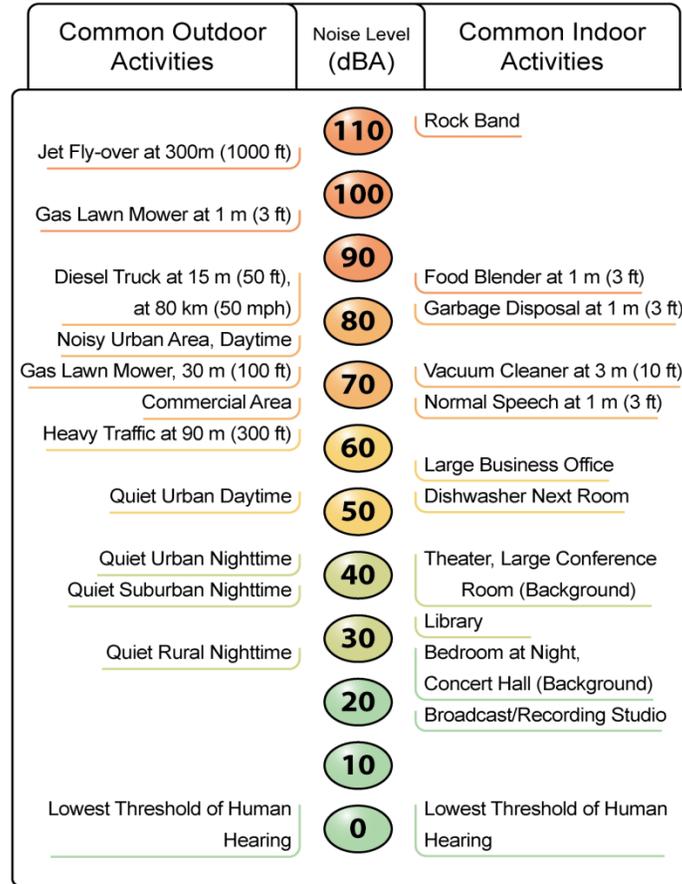


Figure 2-15: A-weighted Decibel Scale

2.11.2.2 Existing Noise Environment

Land Uses

Land uses in the project area are comprised primarily of residential and commercial uses along Hyperion Avenue, Glendale Boulevard, and Riverside Drive. Noise in the project area is dominated by traffic noise along these same streets, as well as I-5, which the viaduct complex traverses.

Along the west side of Glendale Boulevard north of I-5 and the Los Angeles River, commercial uses comprise first row properties with predominantly single-family homes comprising second-row properties and beyond. Along the east side of Glendale Boulevard, both residential and commercial uses make up the first row properties with primarily single-family homes in subsequent rows (including residences with rear yards along the Los Angeles River), although occasional multi-family structures are present. Noise from the viaduct complex and Glendale Boulevard diminishes greatly and blends with the overall background noise (primarily from I-5 traffic) beyond first and second row properties.

Along Riverside Drive, two multi-family residential structures are located near the viaduct complex, one is adjacent to the viaduct complex on the west side (Archstone Apartments), and the other is located farther to the east of Glendale Boulevard. The remaining land uses along

Riverside Drive are commercial and industrial. Several 3rd and 4th floor balconies of a limited number of the units of the Archstone complex face the viaduct complex.

The area surrounding the Waverly Drive Bridge is comprised of mostly single-family homes, although some apartment complexes are present. Along Hyperion Avenue, roadway noise is substantially diminished beyond first row homes.

2.11.3 Environmental Consequences

2.11.3.1 Temporary Impacts

Noise impacts from construction of the proposed project are a function of the noise generated by construction equipment, the location and sensitivity of nearby receptors, and the timing and duration of noise-generating activities.

Construction of the proposed project would be conducted over an approximately 30-month period. Construction noise levels typically vary depending upon construction activities. Each construction activity generates has its own noise characteristics resulting from the mix of construction equipment involved and the related work activity. The construction phases of the proposed project are described in Section 1.3.1.1.9, Project Construction. The loudest construction noise levels are expected to result from demolition of the sides (rails) of the bridge structures and construction of the substructure and superstructure improvements (Glendale Boulevard bridge widening). These construction phases are expected to represent the worst-case phase from a noise standpoint because they involve the highest number of construction equipment and equipment having the greatest noise-generating characteristics. Table 2.11-1 estimates the noise exposure anticipated for various construction phases together with the construction equipment mix used to calculate noise levels for each phase.

Table 2.11-1: Summary of Construction Tasks and Predicted Noise Emissions

Task #	Task	Equipment (Number)	Usage Factor ¹	Noise Level at 50 feet ² , L _{eq} ³ (day), dBA		
A1a	Hyperion Bridge Removal (Within 100 feet from R7)	Compressor (2)	0.48	80	80	
		Generator (2)	0.74	82	84	
		Concrete Saw (2)	0.73	90	92	
		Loader (1)	0.47	85	82	Total = 93
A1b	Hyperion Bridge Removal (Outside 100 feet from R7)	Compressor (2)	0.48	80	80	
		Generator (2)	0.74	82	84	
		Concrete Saw (2)	0.73	90	92	
		Loader (1)	0.47	85	82	Total = 93
A2a	Hyperion Barrier/Sidewalk Construction (Within 100 feet from R7)	Generator (2)	0.74	82	84	
		Concrete Pump (1)	0.73	82	81	Total = 85
A2b	Hyperion Barrier/Sidewalk Construction (Outside 100 feet from R7)	Generator (2)	0.74	82	84	
		Concrete Pump (1)	0.73	82	81	Total = 85
A3	Hyperion Abutment Retrofit	Generator (1)	0.74	82	81	
		Excavator (1)	0.58	85	79	
		Concrete Pump (1)	0.73	82	76	Total = 84
A4	Hyperion Channel Lining Retrofit	Concrete Saw (1)	0.73	90	89	Total = 89
A5	Glendale Widening Excavation	Excavator (2)	0.58	85	86	Total = 86
A6	Glendale Widening Demolition	Excavator (2)	0.58	85	86	
		Compressor (2)	0.48	80	80	Total = 87
A7	Glendale Foundation Widening	Compressor (2)	0.48	80	80	
		Generator (2)	0.74	82	84	
		Hydraulic Crane (2)	0.43	85	84	
		Auger (2)	0.62	85	86	Total = 90
A8	Glendale Substructure Widening	Compressor (2)	0.48	80	85	
		Generator (2)	0.74	82	88	
		Hydraulic Crane (2)	0.43	85	90	
		Concrete Pump (1)	0.73	82	81	Total = 93
A9	Glendale Superstructure Widening	Compressor (2)	0.48	80	80	
		Generator (2)	0.74	82	84	
		Hydraulic Crane (2)	0.43	85	84	
		Concrete Pump (2)	0.73	82	81	Total = 89

Source: ATS Consulting, LLC. 2007.

Notes:

- ¹ Usage factor is the fraction of time equipment is in use over an eight-hour work shift.
- ² FHWA Roadway Construction Noise Model (RCNM) is the source for construction equipment noise levels.
- ³ L_{eq} is the equivalent steady state sound level which, in a stated period of time, would contain the same acoustical energy as the time-varying sound level during the same period.

In addition to the temporary effects presented above, infrequent and short-term (1-2 days) night-time construction activities would be required to install protective barriers along the viaduct complex structures. Ideally, this construction activity would be scheduled for periods when traffic activity on the viaduct complex roadways and I-5 freeway below are at minimum use levels. While these construction activities would not be particularly noisy, they do have the potential to exceed acceptable nighttime ambient levels for nearby sensitive receptors. As noted

above, the prohibitions on night and weekend construction do not apply to construction of major public works projects. In this case, the Board of Police Commissioners would grant a variance which would impose conditions on the work to protect nearby residents from noise impacts.

The City's standard construction specifications require construction equipment to have noise-suppressing devices and require noise controls such as placement of noise barriers, use of low-noise-generating equipment, maintenance of mufflers and ancillary noise-abatement equipment, scheduling of high-noise-producing activities during periods that are least sensitive, routing of construction-related truck traffic away from noise-sensitive areas, and reduction of construction vehicle speeds. Despite the required noise controls, it may not be technically feasible for all construction equipment to meet the 75 dBA maximum noise level.

The noise emissions described in Table 2.11-3 above are at a distance of 50 feet with no attenuating factors. A resident inside a house or apartment would experience lower noise levels. According to the Federal Highway Administration (FHWA Highway Traffic Noise Analysis and Abatement Policy (2011), a building with open windows would provide approximately 10 dB reduction, and a building with closed windows could expect an additional 10-25 dB reduction depending on window type and building type. For example, a light frame building with a closed ordinary sash window would reduce the noise levels by 20 dB.

Where technically feasible, construction equipment noise would be maintained at or below the 75 dBA maximum level, and where not technically feasible, construction would occur within the allowed times, in compliance with City regulations and conditions of approval of any variance. Also, construction would be conducted in compliance with the standard specifications for public works construction, which includes noise minimization measures as described above. Therefore, the noise impacts would be less than significant.

2.11.3.2 Permanent Impacts

The proposed project includes reconfiguration of the northbound I-5 off-ramp to Glendale Boulevard. This change is expected to reduce the vehicle miles traveled along Glendale Boulevard by allowing motorists who desire to travel south on Glendale Boulevard to simply make a left turn from the off-ramp to southbound Glendale Boulevard (this movement is not currently allowed). Because this project is not capacity increasing, and as a result of this reconfiguration, traffic noise along Glendale Boulevard (north of the off-ramp) would be slightly or minimally reduced. Based on the above, no permanent adverse noise impacts would occur from the project.

2.11.3.3 Cumulative Impacts

Because there would be no anticipated construction overlap of the proposed project and other projects within the vicinity, cumulative construction noise impacts would not occur.

2.11.4 No Build Alternative Impacts

The No Build Alternative would result in no project-related changes to existing noise.

Biological Environment

This section of the document focuses on issues covered in the Natural Environment Study prepared by UltraSystems Environmental in August 2011.

2.12 Wetlands

2.12.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purpose of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) utilizes a three-parameter approach that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program prohibits the discharge of dredged or fill material to the Waters of the United States if a practicable alternative is available that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is administered by the (USACE) with oversight by the United States Environmental Protection Agency (U.S. EPA).

USACE issues two types of 404 permits: Standard and General permits. Nationwide permits, a type of General permit, are issued to authorize a variety of minor project activities with no more than minimal effects. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 CFR Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. This executive order states that a federal agency, such as the Federal Highway Administration (FHWA) and/or Caltrans, as assigned, 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 the California Department of Fish and Game (CDFG), the State Water Resources Control Board (SWRCB) and the Regional

Water Quality Control Board (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code 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 CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFG 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 the CDFG.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCBs also issue water quality certifications for impacts to wetlands and waters in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section for additional details.

2.12.2 Affected Environment

The viaduct complex spans the Los Angeles River in the Los Angeles Narrows area. The Los Angeles River is a navigable waterway and is considered a Water of the U.S. as defined by USACE. The River is also considered jurisdictional by CDFG under Section 1600 of the Fish and Game Code.

Although the Los Angeles River is unlined both upstream and downstream of the viaduct complex, the river bottom in the immediate vicinity of the viaduct complex crossing is lined with concrete. The concrete bottom extends upstream approximately 50 feet northwest of the southbound Glendale Boulevard Bridge and downstream approximately 120 feet southeast of the concrete hydraulic control structures and abandoned piers for the former Red Car line (Figure 2-16).

Further upstream and downstream the river bottom is comprised of cobbles, which allows rising groundwater to enter the river. Along these unlined areas of the Los Angeles River, patches of riparian and wetland plant communities have established, specifically riparian forest, riparian scrub, and emergent freshwater marsh communities.

2.12.2.1 Riparian Forest

The study area contains stands of mature cottonwood and willow species with a developed understory of mulefat and other riparian shrubs. Based on species composition, the community most closely resembles Southern Cottonwood/Willow Riparian Forest intermixed with the Mulefat Scrub (Holland 1986). The vegetation is dominated by Fremont cottonwood (*Populus fremontii*), western sycamore (*Platanus racemosa*), and Goodding's willow (*Salix gooddingii*). The overstory canopy occurs in isolated dense patches, with a dense shrub layer consisting of willow saplings (*Salix spp.*), mulefat (*Baccharis salicifolia*), and other shrubs and sub-shrubs. These forests also contain a number of exotic species including arundo (*Arundo donax*), cocklebur (*Xanthium strumarium*), and lady's thumb (*Polygonum persicaria*).

2.12.2.2 Riparian Scrub

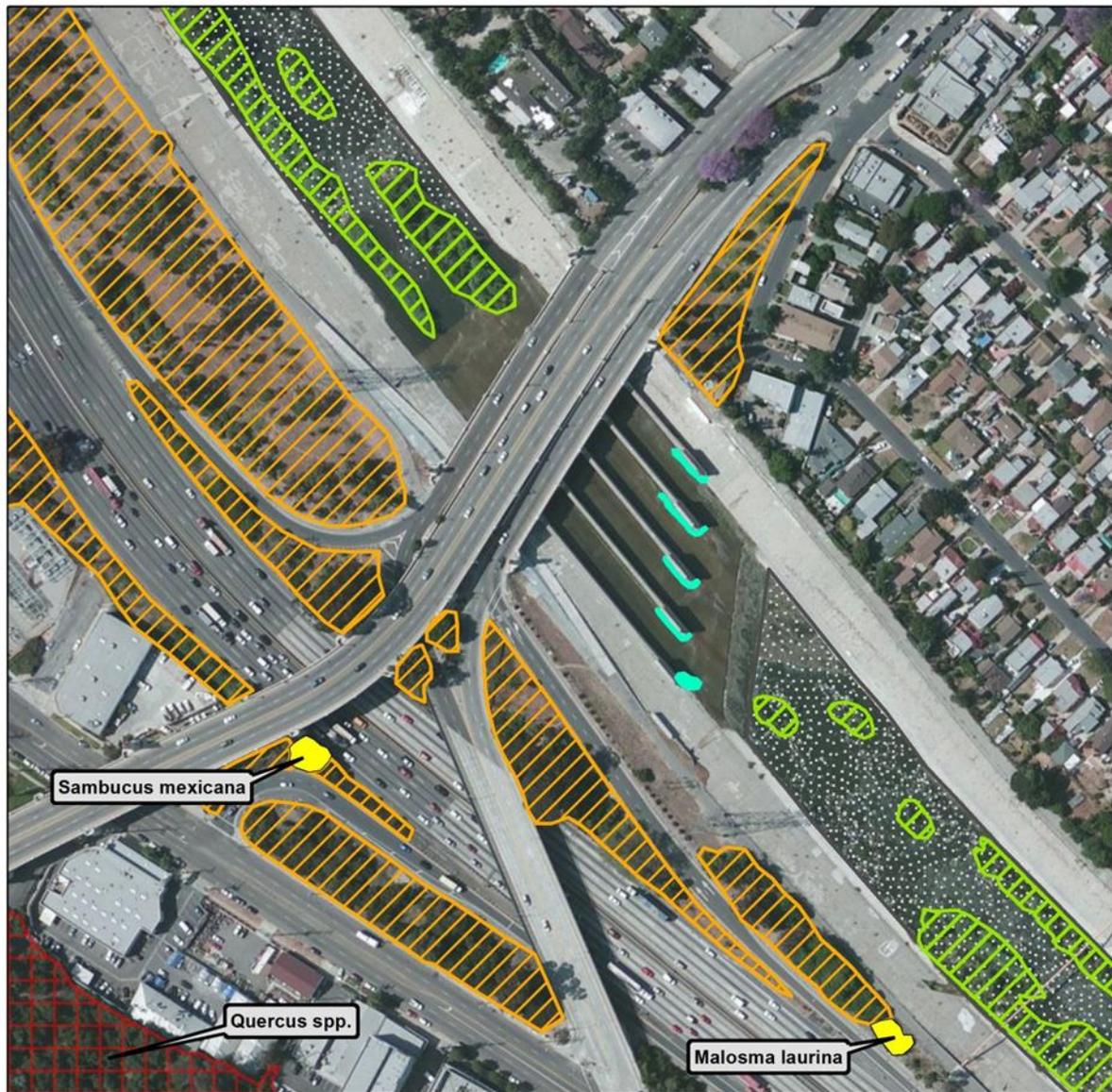
As described above, the understory of the Riparian Forest contains mostly mulefat scrub and southern willow scrub species. Characterized more generally as riparian scrub, this community is dominated by shrubby willow species (*Salix spp.*) and mulefat (*Baccharis salicifolia*). Occasionally, patches of vegetation within the river contain riparian scrub species only. Density

and maturity of the vegetation varies both laterally and horizontally within the channel. This variation may be due to a number of factors. In portions of the channel subjected to significant flood scour, vegetation is naturally thinned; or it may be absent altogether.

2.12.2.3 Freshwater Emergent Marsh

Emergent marsh habitats occur within the channel along slow-moving portions of the river that have unobstructed soil surfaces. Holland (1986) has classified these areas as Coastal and Valley Freshwater marsh. Common plant species in this community include bulrush (*Scirpus sp.*), cattail (*Typha latifolia*), sedge (*Carex sp.*), flatsedge (*Cyperus sp.*) and marsh purslane (*Ludwigia peploides*). Several exotic species have successfully invaded the freshwater marsh adjacent to the project area, including arundo (*Arundo donax*), cocklebur (*Xanthium strumarium*), lady's thumb (*Polypogonum persicaria*), and castor bean (*Ricinus communis*).

Fresh water emergent marsh is the closest natural plant community to the proposed project area. Sizable stands of freshwater marsh begin within approximately 50 feet upstream and 120 feet downstream of the proposed project area. Some cattail and marsh purslane also occur sporadically at the base of the bridge piers (abutments) located on the downstream side of the concrete channel.



Source: CNDDDB, 2010; Bing Maps, 2009; Ultrasystems Environmental, Inc., 2011

August 17, 2011

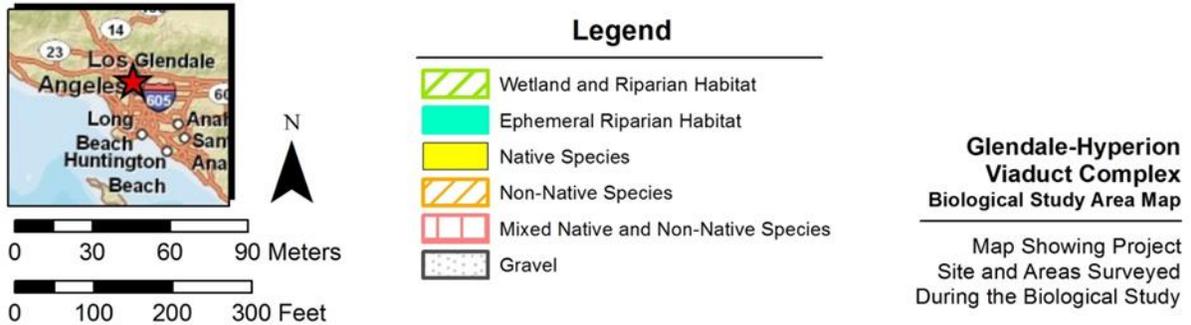


Figure 2-16: Biological Study Area Map

2.12.3 Environmental Consequences

2.12.3.1 Temporary Impacts

No temporary impacts to riparian forest or riparian scrub would be expected with implementation of the avoidance and minimization measures described below. Although riparian vegetation exists upstream and downstream from the proposed project area, construction equipment would be restricted to the existing concrete foundation and access routes. No heavy equipment, including cranes and drill rigs, would be permitted to encroach into the unlined portion of the river.

Equipment may be tracked or wheeled into the channel from several access points. The river channel can be accessed from the existing bike path entrance off of southbound Glendale Boulevard and from the path at Ferncroft Road near the landscaped median separating northbound Glendale Boulevard traffic from two-directional traffic on the frontage road. Another access point is located off Fletcher Drive approximately 0.75 miles downstream from the viaduct complex.

Currently, the water within the Los Angeles River flows as sheet-flow over the entire width of the concrete pad at the viaduct complex crossing. Placement and operation of construction equipment in the channel would therefore require the diversion of surface waters by coffer dams or other approved flow diverters. The coffer dam would be erected on the existing concrete channel as not to displace any riparian or wetland habitat upstream and downstream from the bridge.

Although all bridge foundations and pier abutments are concrete lined, some sparse freshwater emergent plants have established along the base of these structures, primarily cattails and marsh purslane. This vegetation would have to be removed to accommodate the proposed retrofits. An estimated 2,000 square feet of native vegetation would need to be removed. It is likely this vegetation is dynamic; colonizing around support structures in the spring, growing and flowering over the summer, and then becoming dislodged in the winter from large flood events. Therefore, the presence and extent of this vegetation during the start of project construction may change. Furthermore, vegetation would be permitted to recolonize these areas once project construction was completed.

These stands could support nesting birds (e.g. red-winged blackbirds) during the breeding season (February through August). Therefore, vegetation removal should occur only after pre-construction bird surveys have been performed or outside of the nesting season (see mitigation measures B-4 and B-5 in section 2.14.3.4 for guidance concerning nesting bird surveys).

To avoid impacts to vegetation downstream of the viaduct complex, diverted water should be restored to the full width of the Los Angeles River prior to intercepting any vegetation (see mitigation measure B-2). Because the length of the concrete pad extending from the end of the hydraulic control channels is relatively short (approximately 35 feet), flow diversion structures should be designed to spread flow across the entire concrete pad before entering the unlined portions of the river. If not, some wetland vegetation immediate downstream may receive less water than they are acclimated to, and could be temporarily impacted.

2.12.3.2 Permanent Impacts

The proposed project would include the widening of both the southbound and northbound Glendale Boulevard bridges over the Los Angeles River. The widening would require that the

foundation footings and piers within the river channel be extended by approximately eight feet to support the widened superstructures. The areas within the Los Angeles River where the piers and foundations would be extended are within the concrete lined portions of the river and as described, contain sparse emergent vegetation. The nearest wetland community upstream subsisting on soil substrate is located at least 50 feet from the existing piers and the nearest wetland community downstream is located about 120 feet from the existing piers. Because none of the pier extensions or foundations would encroach into any unlined portion of the Los Angeles River, no permanent adverse impacts to wetlands would occur.

2.12.3.3 Cumulative impacts

The proposed project would not permanently affect wetlands in the Los Angeles River. According to the CEQAnet Database (2011), there are no other current or planned projects whose construction could adversely affect wetlands in the Los Angeles River. Therefore, no cumulative impacts would occur to wetlands in the river. This determination, however, is based on adherence to the following avoidance and minimization measures.

2.12.3.4 Avoidance, Minimization, and/or Mitigation Measures

To avoid potential impacts to wetlands in the Los Angeles River downstream from the viaduct complex, the following measure would be implemented:

- B-1:** Cofferdams or other approved flow diversions should be erected in the existing concrete channel during project construction to minimize pollution of river water as part of a Storm Water Protection Plan (SWPPP). To optimize pollution capture and stream flow during project implementation, flow should be diverted from one or two of the four channels at any given time.
- B-2:** Restore diverted flow within the Los Angeles River to the full width of the river channel upstream from the locations of the riparian/wetland islands. This would ensure that the wetlands immediately downstream of the concrete pad would not be deprived of water that they would otherwise receive.

2.12.4 No Build Alternative Impacts

The No Build Alternative would not provide seismic or other improvements to the viaduct complex, and as such, would not result in any impacts to wetlands.

2.13 Plant Species

2.13.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) 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 because they are rare and/or subject to population and habitat declines. The highest level of protection is given to threatened and endangered (T&E) 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 the Threatened and Endangered Species Section (2.15) in this document for detailed information regarding T&E species.

This section of the document discusses all the other, non-T&E special status plant species, including CDFG fully protected species and species of special concern, USFWS candidate species, and non-listed plants in the California Native Plant Society (CNPS) Rarity Ranking System database.

The regulatory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et. seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et. seq. Caltrans projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, Public Resources Code, Sections 2100-21177.

Invasive plant (and animal) species are now well recognized as major threats to native ecosystems. Executive Order 13112 tasked Federal Agencies in 1999 to (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions. The Executive Order also established a National Invasive Species Council to oversee the implementation of these task orders.

Other applicable Federal legislation aimed at controlling exotic species include the Noxious Weed Control Act of 2004, which creates a national funding program for weed management entities and the National Aquatic Invasive Species Act of 2005 (HR 1591) that updated national policy on ballast water and other aquatic invasive species.

To comply with Executive Order 13112, the project proponent shall consult the California Invasive Plant Council's (Cal-IPC) weed management guidelines. While weed management strategies are often species specific, hand weeding and mowing is appropriate for relatively small areas.

2.13.2 Affected Environment

A search of the California Natural Diversity Database was conducted to identify special status species in the project area. In addition, field surveys were conducted in the project area and along the Los Angeles River on August 12, 2011.

According to the CNDDDB (2011) search, three non-T&E special status plant species have the potential to occur within the riparian and wetland islands in the Los Angeles River: Davidson's bush mallow (*Malacothamnus davidsonii*), Parish's gooseberry (*Ribes divaricatum* var. *parishii*), and San Bernardino aster (*Symphotrichum defoliatum*). Although these species are not listed as endangered or threatened at a federal or state level, the California Native Plant Society considered them to be rare, threatened, or endangered in California and elsewhere. These species were not observed during recent field surveys of the project area (in 2008 or 2011). However, field surveys were not exhaustive and the presence or absence of these three plant species cannot be certain.

2.13.3 Environmental Consequences

2.13.3.1 Temporary Impacts

As discussed above, construction of the pier extensions for the viaduct complex would require the temporary diversion of flow in the Los Angeles River. If water flowing out of flow diversion structures do not fully spread across the entire river channel bottom before encountering wetland vegetation, it is possible that some individuals of Davidson's bush mallow, Parish's gooseberry, and San Bernardino aster could be adversely affected from reduced water availability. Flow diversion structures should be installed to avoid this issue.

2.13.3.2 Permanent Impacts

As discussed above, the proposed project requires extending the viaduct complex piers within the river channel by approximately eight feet to support widened superstructures. The areas within the Los Angeles River where the piers and foundations would be extended are within the concrete lined portions of the river where only minimal colonization of common wetland species was observed. Therefore, removal of this vegetation would be unlikely to impact a special status species. If special status species in these locations are observed during pre-construction surveys, CDFG should be immediately notified and consulted for potential plant relocation.

Otherwise, the nearest wetland communities are located at least 50 feet upstream and 120 feet downstream from the existing piers. Because none of the pier extensions or foundations would encroach into any unlined portion of the Los Angeles River, no adverse impacts to Davidson's bush mallow, Parish's gooseberry, or San Bernardino aster would be expected.

2.13.3.3 Cumulative impacts

As discussed above, the proposed project would not be expected to negatively impact Davidson's bush mallow, Parish's gooseberry, or San Bernardino aster present in the Los Angeles River. Similarly, there are no other known related projects that could affect these species in the river. As a consequence, the proposed project would not result in cumulative impacts to these special status plant species.

2.13.3.4 Avoidance, Minimization, and/or Mitigation Measures

To avoid impacts to Davidson's bush mallow, Parish's gooseberry, San Bernardino aster that may be present in the Los Angeles River downstream from the viaduct complex, mitigation measure **B-1 through B-3** described above should be implemented.

2.13.4 No Build Alternative Impacts

The No Build Alternative would not provide seismic or other improvements to the viaduct complex, and therefore would not result in any impacts to Davidson's bush mallow, Parish's gooseberry, or San Bernardino aster.

2.14 Animal Species

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA) Fisheries and the California Department of Fish and Game (CDFG) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.15 below. All other special-status animal species are discussed here, including CDFG 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
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State Laws and regulations pertaining to wildlife include the following

- California Environmental Quality Act
- Sections 1600-1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

2.14.1 Regulatory Setting

2.14.1.1 Migratory Bird Treaty Act

The original Migratory Bird Treaty Act (MBTA) of 1918 implemented the 1916 Convention between the United States and Great Britain (for Canada) for the protection of migratory birds. Specific provisions of the statute include the establishment of a federal prohibition, unless permitted, to:

...pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of the Convention ... for the protection of migratory birds ... or any part, nest, or egg of any such bird.

Birds species protected under the provisions of the MBTA are identified by the List of Migratory Birds (50 CFR, § 10.13, as updated by the 1983 American Ornithologists Union Checklist and published supplements through 1995, USFWS).

2.14.1.2 Fish and Wildlife Coordination Act

The original Fish and Wildlife Coordination Act (FWCA) of 1934 authorized the Secretaries of Agriculture and Commerce to provide assistance to and cooperate with Federal and State agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. Amendments to the FWCA require consultation with the Fish and Wildlife Service and the fish and wildlife agencies of States where the "waters of any stream or other body of water

are proposed or authorized, permitted or licensed to be impounded, diverted...or otherwise controlled or modified" by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of "preventing loss of and damage to wildlife resources."

2.14.1.3 Federal Fisheries and Essential Fish Habitat Consultation Summary

The National Oceanic and Atmospheric Administration (NOAA) works with federal agencies to conserve and enhance essential fish habitat (EFH). Consultation is required when a federal agency authorizes, funds, or undertakes an action that may adversely affect EFH. In 2004, the FHWA authorized Caltrans as a non-federal representative to consult with NOAA regarding the management and protection of EFH (50 CFR 600.920(c)). The Proposed project carried out with the proposed avoidance measures, however, is not expected to "adversely affect" EFH. Therefore consultation with NOAA is not required. An adverse effect is defined as any impact that reduces quality and/or quantity of EFH. This includes direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to species and their habitat, and other ecosystem components, or reduction of the quality and/or quantity of EFH.

2.14.1.4 California Fish and Game Code, Section 1600

Section 1600 of the Fish and Game Code regulates the alternation of the bed, bank, or channel of a stream, river, or lake, including dry washes. Generally, CDFG asserts jurisdiction up to the top of significant bank cuts, or to the outside of any riparian vegetation associated with a water course. Activities that have the potential to affect jurisdictional areas can be authorized through the issuance of a Streambed Alteration Agreement (SAA). The SAA specifies conditions and mitigation measures that would minimize impacts to riparian resources from proposed actions.

The CDFG maintains the responsibility of the state under CEQA and through the USACE 404 process to comment on potential impacts to special status species. They are also responsible for project compliance with the California Endangered Species Act (described in Section 2.16) and must be consulted if impacts to state-listed species are likely to occur.

2.14.2 Affected Environment

Several non-T&E special-status animal species have the potential to occur within the riparian and wetland habitats near the proposed project site. These species include the peregrine falcon (*Falco peregrinus anatum*), western mastiff bat (*Eumops perotis californicus*), hoary bat (*Lasiurus cinereus*), western yellow bat (*Lasiurus xanthinus*) and the big free-tailed bat (*Nyctinomops macrotis*) which are all species of concern at the state level. The southwestern willow flycatcher is discussed below in Section 2.15.

A number of special status species that were identified in the 2001 CNDDDB search were not identified in 2011. These included the Least bell's vireo (*Vireo bellii pusillus*), yellow warbler (*Dendroica petechia*), yellow-breasted chat (*Icteria virens*), Santa Ana speckled dace (*Rhinichthys osculus*), arroyo chub (*Gila orcutti*), Santa Ana sucker (*Catostomus santaanae*), and unarmored three-spine stickleback (*Gasterosteus aculeatus williamsoni*). These species historically occurred in the region but are unlikely to inhabit the project area currently because of past habitat modification (i.e. urban development) and isolation from suitable habitat. The arroyo chub was last known to occur in the vicinity of the site, in the Sepulveda basin, in 1993. There are no recorded occurrences in the CNDDDB of the arroyo chub within the project vicinity. Similarly, it is possible all three bird species could fly through and temporarily inhabit in the project area in route to more suitable habitat.

2.14.3 Environmental Consequences

2.14.3.1 Temporary Impacts

As discussed above, construction of the pier extensions for the viaduct complex would require the temporary in-channel diversion of flow in the Los Angeles River. However, the work area would be confined to the concrete pad in the river channel, and equipment entering and leaving the construction site would not directly damage or affect riparian habitat upstream or downstream from the concrete pad. Therefore, riparian habitat used by these special status species would not be affected.

Peregrine Falcon

The peregrine falcon (*Falco peregrinus anatum*) was not observed during the field survey. However, given their tolerance of urban environments and the presence of large perch trees and edifices on the project area, its occurrence on site is possible. Breeding habitat for these species may also be present. As a result, project construction would likely result in the temporary displacement of the Peregrine falcon from the project site. Avoidance measures should be implemented to avoid and/or minimize impacts to the Peregrine falcon.

Western Mastiff Bat, Hoary Bat, Western Yellow Bat, and Big Free Tailed Bat

Although no bats were observed during the field survey, all four sensitive bat species identified above could inhabit the project area. Like the Peregrine falcon, marginal yet potentially suitable roosting and foraging habitat exists on the project site. For instance, potential roost sites may exist beneath bridge supported structures not readily visible from streets or sidewalks. Therefore, project construction could result in the temporary displacement of these bat species from the project site. Several avoidance measures should be implemented to avoid and/or minimize impacts to bats.

Other Special Status Species

As discussed above, a number of special status species identified in the 2001 CNDDDB search were not identified in 2011. To address these unlikely, albeit potential occurrences, avoidance measures are recommended to reduce potential project impacts. To avoid impacts to arroyo chub from water diversion under the bridge, preconstruction surveys for the species should be conducted. If the species is detected in the river channel, seine netting should be installed to capture individuals of this species and captured individuals are to be released at appropriate locations downstream. In addition, diversion structures should be constructed to minimize debris, soil and silt releases to the river. Influxes of excavated soil could temporarily increase turbidity downstream that might affect the arroyo chub, if present.

Construction noise may have some effect on migratory/transitory birds using these riparian and wetland areas. However, substantial background noise is already present on the site from the adjacent roads and freeway, so birds using the sites are expected to be acclimated to noise disturbance. Therefore, this impact is expected to be minimal. If transitory birds do vacate the area from noise disturbance, there are adjacent riparian/wetland areas available. No permanent or long-term impacts to the species would therefore be anticipated.

2.14.3.2 Permanent Impacts

As discussed above, the proposed project requires extending the viaduct complex piers within the river channel by approximately eight feet to support widened superstructures. The areas within the Los Angeles River where the piers and foundations would be extended are within the

concrete lined portions of the river where only minimal wetland vegetation exists. Therefore, removal of this vegetation would be unlikely to impact a special status animal species. Otherwise, the nearest wetland communities are located at least 50 feet upstream and 120 feet downstream from the existing piers. Because none of the pier extensions or foundations would encroach into any unlined portion of the Los Angeles River, no adverse impacts to special status animal species would be expected.

2.14.3.3 Cumulative impacts

The proposed project would not permanently affect special status animal species that may be present in the Los Angeles River or that utilize riparian habitat in the river. As a consequence, the proposed project would not result in cumulative impacts to these animal species.

Although construction of pier extensions in the Los Angeles River channel could result in temporary impacts to the Peregrine falcon, the Western mastiff bat, the hoary bat, the Western yellow bat, and the big free tailed bat, avoidance measures would be implemented to avoid potential adverse impacts. As a consequence, the proposed project would not contribute to or result in significant cumulative impacts to these animal species.

2.14.3.4 Avoidance, Minimization, and/or Mitigation Measures

To avoid potential impacts to riparian habitat in the Los Angeles River downstream from the viaduct complex, measure B-1 (coffer dam for pollution control) and B-2 (restore flow to downstream vegetation) described above would be implemented.

In order to broadly avoid impacts to special-status species the following avoidance measure would be implemented:

- B-3:** A Worker Environmental Awareness Program (WEAP) would be prepared and all construction crews and contractors would be required to participate in WEAP training prior to starting work on the project. The WEAP training would include a review of the special-status species that could exist in the Project area, the locations of the special-status biological resources, their legal status and protections, and measures to be implemented for avoidance of these sensitive resources. A record of all personnel trained would be maintained. (This measure was not featured in the NES prior to its approval)

To avoid the potential disruptions from construction noise to the breeding activities of Peregrine falcon, bats species, and migratory birds:

- B-4:** Conduct pre-construction nest surveys of the riparian habitat within 500 feet of the work area (in the Los Angeles River channel) to identify nest sites for special-status bird species. The surveys should be conducted prior to the onset of breeding season before construction is scheduled to begin. If nest structures or sites are identified, they should be excluded to ensure that no nesting of these species occurs within 500 feet of construction activities.
- B-5:** A qualified biological monitor shall be present throughout the duration of construction activities over the course of nesting bird season (February 15th to August 31st) to monitor the activity of nests occupied by Migratory Bird Treaty Act-protected birds. (This measure was added after the NES was approved and is not featured within it.).

To avoid impacts to arroyo chubs, the following avoidance measure will be implemented:

- B-6:** A qualified biologist shall conduct a pre-construction survey for arroyo chub (*Gila orcutti*) immediately below the viaduct complex. If the species is observed, then the qualified biologist should install seine netting prior to construction in order to capture individuals of arroyo chub in the work zone. Captured individuals would be released at appropriate locations downstream of project site. This capture and release regime would occur at all significant phases of in-channel diversions, including the initial placement of diversions.

To avoid potential turbidity increases to the Los Angeles River that could adversely affect the arroyo chub, the following avoidance measure would be implemented:

- B-7:** Turbidity curtains shall be installed at the downstream end of the construction work zone in the river channel for the duration of in-channel construction. Turbidity curtains shall be inspected weekly and prior to and following storm events. If repair is necessary maintenance shall occur immediately (within 48 hours) to ensure pollutants do not disperse throughout the river.

To avoid impacts to special status bats species that may be present beneath the viaduct complex, the following avoidance measure would be implemented:

- B-8:** Within 30 days of bridge construction or tree removal, a qualified biologist shall conduct a pre-construction survey for the presence of roosting bats. If active nursery roosts are found (typically between April 15 and August 1) a work exclusion area of 500 feet will be cordoned off, and construction activities will be re-scheduled to occur after juvenile bats are able to forage independently. If sensitive bat species are present but there is not an active roost, the client will enter into a Memorandum of Understanding (MOU) with CDFG. Alternate habitat shall be provided if bats are to be excluded from maternity roosts. A qualified biologist with a scientific collecting permit will implement bat exclusion measures. A roost with comparable spatial and thermal characteristics shall be constructed as directed by a qualified biologist. In the event that adult bats need to be handled and relocated, a qualified biologist shall prepare and implement a relocation plan subject to approval by CDFG that includes relocating all bats found on-site to an alternate suitable habitat.

If bat roosts are found outside the breeding season, openings to these roosts should be blocked after the bats have emerged for their night-time feeding to prevent the bats from re-entering. The bats will be temporarily forced to find other roosting areas and other structures in the area.

While a visual assessment of bat roost habitat does not require a permit, handling of bats for removal requires two permits from CDFG; a Scientific Collecting Permit (SCP) and a MOU. The MOU describes the type of surveys, methods, and species proposed, and purpose of bat captures. Applicants must show that they possess experience with trapping and handling bats before they are issued an MOU. Such experience is usually accumulated by working with a licensed bat worker under their permits, and demonstrating the necessary skills and abilities to DFG (Johnson et al., 2004).

Prior to initiation of construction, a qualified biologist shall be designated to monitor construction activities and advise construction personnel of the potential biological issues associated with development of the site. The biological monitor shall attend weekly construction meeting and provide onsite direction for addressing habitat- or species-specific issues as they are encountered during construction. If as a result of pre-construction surveys the biologist establishes exclusion zones around trees or buildings to protect nesting birds or roosting bats, the biological monitor should advise the construction crews of those areas and of the importance of respecting and maintaining those zones.

Due to local and California Health Department restrictions, no direct contact by workers with any bat species is allowed. The Project Biologist/Biological Monitor shall be contacted immediately should any bats be identified within the project's limits of construction, who will oversee exclusion or removal efforts, as necessary. If construction is to occur in phases or over an extended period of time, multiple pre-construction surveys may be required to address seasonal bat migrants and the potential influx of new arrivals.

Because bats are nocturnal, work activities are not to occur within 100 feet of the bridge between sunset and sunrise. Airspace access to and from the bridge is to remain approximately the same. Bird-exclusion netting must not be used. No clearing and grubbing is to occur adjacent to the structure. Lighting is not to be used near the structure where it would shine on the structure. Combustion equipment, such as generators, pumps, and vehicles are not to be parked, nor operated, under or adjacent to the structure. Personnel are not to be present under the bridge during the evening or at night.

2.14.4 No Build Alternative Impacts

The No Build Alternative would not provide seismic or other improvements to the viaduct complex, and as such, would not result in any impacts to special status animal species that may occur in the project vicinity.

2.15 Threatened and Endangered Species

2.15.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et seq. See also 50 CFR Part 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, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (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 a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an Incidental Take statement. Section 3 of FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The CDFG is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for takes incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by CDFG. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

2.15.2 Affected Environment

Two federal endangered species, the southwestern willow flycatcher (*Empidonax traillii extimus*) and Gambel’s water cress (*Nasturtium gambelli*), have the potential to occur within the riparian and wetland habitat near the proposed project site. Neither species was observed during the reconnaissance-level field survey; however this does not indicate the species are necessarily absent from the proposed project area. While the habitat appears too degraded, open, and fragmented to support breeding activity by southwestern willow flycatcher, early seral stage

willows and mulefat near the project area could support transitory visits by the species. Habitat suitability for Gambel's water cress is low and the species has not been recorded in the project vicinity for over a century. Only three to four known populations exist in Los Angeles County amounting to fewer than 300 individuals.

2.15.3 Environmental Consequences

2.15.3.1 Temporary Impacts

Construction of the pier extensions for the viaduct complex would require the temporary in-channel diversion of flow in the Los Angeles River. However, the work area would be confined to the concrete pad in the river channel, and equipment entering and leaving the construction site would not directly damage or affect riparian habitat upstream or downstream from the concrete pad. As a consequence, the proposed project would not adversely affect habitat used by either species.

The southwestern willow flycatcher is considered a potential transitory user of the riparian habitat in the project area. Degradation of riparian habitat therefore could negatively impact individuals inhabiting the site. In addition, heightened noise from construction may impact their behavior and their ability to communicate with one another. However, substantial background noise is already present on the site from the adjacent roads and freeway, so birds using the sites are expected to be acclimated to noise disturbance. Therefore, this impact is expected to be minimal. If transitory birds do vacate the area from noise disturbance, there are adjacent riparian/wetland areas available.

Given the overall rarity of Gambel's water cress and the lack of recent nearby records, it is very unlikely the plant exists in any wetland vegetation near the project site. Nonetheless, adherence to mitigation measures **B-1** through **B-3** will ensure adequate precautions are taken to avoid any potential impacts to the species.

2.15.3.2 Permanent Impacts

No permanent impacts to the southwestern willow flycatcher or Gambel's water cress are anticipated. As discussed above, the areas within the Los Angeles River where the piers and foundations would be extended are within the concrete-lined portions of the river where no riparian vegetation is located. Because none of the pier extensions or foundations would encroach into any unlined portion of the Los Angeles River, no adverse impacts to habitat used by the southwestern willow flycatcher would therefore be expected.

2.15.3.3 Cumulative impacts

No cumulative impacts to the southwestern willow flycatcher or Gambel's water cress would occur from this project. No permanent impacts to existing, marginal habitat is expected and foreseeable temporary impacts to habitat can be avoided by adhering to the following avoidance measures.

2.15.3.4 Avoidance, Minimization, and/or Mitigation Measures

To avoid impacts to riparian habitat located downstream from the viaduct complex which could be used by the southwestern willow flycatcher, measure **B-1 through B-3** described above would be implemented. To avoid impacts to Gambel's water cress, adherence to mitigation measures **B-1 through B-3** should be implemented.

Chapter 3 California Environmental Quality Act Evaluation

3.1 Introduction

This chapter analyzes the environmental impacts of the proposed project pursuant to CEQA. The analysis is conducted following the City of Los Angeles Environmental Quality Act Guidelines (adopted July 31, 2002), which incorporate all of the State CEQA Guidelines.

The proposed project is subject to federal, as well as state environmental review requirements because the City of Los Angeles proposes the use of federal funds and/or the project requires federal approval actions. Proposed Project documentation, therefore, has been prepared in compliance with both CEQA and NEPA. The City of Los Angeles is the project proponent and the lead agency under CEQA. FHWA's responsibility for environmental review, consultation, and any other action required in accordance with NEPA and other applicable Federal laws for this project is being, or has been, carried out by the Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or some lower level of documentation, should be prepared. An EIS is required under NEPA when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

On the other hand, CEQA requires lead agencies to identify each "significant effect on the environment" resulting from the proposed project and ways to mitigate such effects. If the proposed project may have a significant effect on any environmental resource, then an EIR must be prepared. Each significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the *CEQA Guidelines* list a number of mandatory findings of significance, which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this proposed project and CEQA significance.

The determination of whether a proposed project requires the preparation of an EIR is generally based on the results of an Initial Study. For this project, an initial study checklist (Appendix A) did indicate the potential for significant impacts. Thus, the public was informed that an EIR would be prepared. However, the detailed analyses prepared for this joint CEQA/NEPA

document found that most potential impacts were not significant and that all potentially significant impacts could be reduced to an insignificant level through the implementation of recommended mitigation measures. Therefore, a Mitigated Negative Declaration (MND) is proposed to be adopted by the City. If the City adopts the MND and approves the project, it will also adopt a mitigation program to ensure implementation of the mitigation measures.

3.2 Discussion of Environmental Effects

3.2.1 Less than Significant Effects

Refer to the introduction of Chapter 2 of this document, which identifies environmental issues considered, but for which no adverse impacts were identified. Consequently, there is no further discussion regarding those issues in this document.

As described in Chapter 2, the proposed project is expected to result in less than significant impacts in the following areas below:

- Land Use, Planning, and Growth (Section 2.1)
- Utilities/Emergency Services (Section 2.3)
- Visual/Aesthetics (Section 2.5)
- Hydrology and Water Quality (Section 2.8)
- Hazards and Hazardous Materials (Section 2.9)
- Air Quality (Section 2.10)
- Noise (Section 2.11)

Please refer to the above-referenced sections for a detailed analysis for each subject area.

3.2.2 Significant Environmental Effects

As discussed in Chapter 2, the proposed project may result in significant impacts that may be reduced to less than significant with mitigation in the following areas:

- Community Character and Cohesion (Section 2.2.1-included under Community Impacts)
- Traffic and Transportation/Pedestrian and Bicycle Facilities (Section 2.4)
- Cultural Resources (Section 2.6 – 2.7)
- Biological Resources (Section 2.12 – 2.15)

Please refer to the above-referenced sections for a detailed analysis for each subject area.

3.3 Mitigation Measures for Significant Impacts under CEQA

Table 3-1 summarizes mitigation measures recommended to minimize impacts of the Proposed Project to affected environmental resource areas under CEQA. This list includes minimization measures for impacts that are less than significant, but that can be further minimized by the implementation of such measures.

Table 3-1: Mitigation Measures for Significant Impacts under CEQA and minimization measures for less-than-significant impacts

Resource Area	Mitigation Measures
Biological Resources	<p>B-1: Cofferdams or other approved flow diversions should be erected in the existing concrete channel during project construction to minimize pollution of river water as part of a Storm Water Pollution Prevention Plan (SWPPP). To optimize pollution capture and stream flow during project implementation, flow should be diverted from one or two of the four channels at any given time.</p> <p>B-2: Restore diverted flow within the Los Angeles River to the full width of the river channel upstream from the locations of the riparian/wetland islands. This would ensure that the wetlands immediately downstream of the concrete pad would not be deprived of water that they would otherwise receive.</p> <p>B-3: Conduct a Worker Environmental Awareness Program (WEAP). All construction crews and contractors should be required to participate in WEAP training prior to starting work on the project. The WEAP training will include a review of the special-status species and other sensitive resources that could exist in the Project area, the locations of the sensitive biological resources, their legal status and protections, and measures to be implemented for avoidance of these sensitive resources. A record of all personnel trained should be maintained.</p> <p>B-4: Conduct pre-construction nest surveys of the riparian habitat within 500 feet of the work area (in the Los Angeles River channel) to identify nest sites for special-status bird species. The surveys should be conducted prior to the onset of breeding season before construction is scheduled to begin. If nest structures or sites are identified, they should be excluded to ensure that no nesting of these species occurs within 500 feet of construction activities.</p> <p>B-5: A qualified biological monitor should monitor construction activities over the course of nesting bird season (February 15th to August 31st) for the presence of nests occupied by Migratory Bird Treaty Act-protected birds.</p> <p>B-6: Conduct a pre-construction survey for arroyo chub (<i>Gila orcutti</i>) immediately below the viaduct complex. If any arroyo chub are found, the qualified biologist should install seine netting prior to construction in order to capture individuals of arroyo chub in the work zone. Captured individuals would be released at appropriate locations downstream of project site. This capture and release regime would occur at all significant phases of in-channel diversions, including the initial placement of diversions.</p> <p>B-7: Install turbidity curtains at the downstream end of the construction work zone in the river channel for the duration of in-channel construction. Turbidity curtains should be inspected weekly and prior to and following storm events. If repair is necessary, maintenance should occur immediately (within 48 hours) to ensure pollutants do not disperse throughout the river.</p> <p>B-8: Within 30 days before bridge construction or tree removal, a qualified biologist should conduct a pre-construction survey for the presence of roosting bats. If</p>

Table 3-1: Mitigation Measures for Significant Impacts under CEQA and minimization measures for less-than-significant impacts

Resource Area	Mitigation Measures
	<p>sensitive bat species are found, the following measures should be implemented:</p> <p>If active nursery roosts are found (typically between April 15 and August 1) a work exclusion area of 500 feet should be cordoned off, and construction activities should be re-scheduled to occur after juvenile bats are able to forage independently. If sensitive bat species are present but there is not an active roost, the client should enter into a Memorandum of Understanding (MOU) with CDFG. Alternate habitat should be provided if bats are to be excluded from maternity roosts. A qualified biologist with a scientific collecting permit should implement bat exclusion measures. A roost with comparable spatial and thermal characteristics should be constructed as directed by the biologist. In the event that adult bats need to be handled and relocated, the biologist should prepare and implement a relocation plan subject to approval by CDFG that includes relocating all bats found on-site to an alternate suitable habitat.</p>
Historic Resources	<p>H-1: <u>Recordation to Historic American Engineering Record Specifications:</u> Prior to the start of any work that could adversely affect characteristics that qualify the Glendale-Hyperion Viaduct Complex as a historic property, contact the National Park Service Pacific West Region Office (NPS), to determine if additional recordation is required for the historic property beyond that provided in “Historic American Engineering Record, Glendale-Hyperion Viaduct, HAER No. CA-272,” 2000-2001. NPS should respond to the additional recordation request within 30 days. If additional documentation is required, it should be completed and accepted by the NPS before the viaduct is altered. Prepare draft and final reports.</p> <p>H-2: <u>HABS/HAER Dissemination:</u> Upon completion of the documentation prescribed in Mitigation Measure H-1, documentation meeting current archival quality standards established by the NPS’ Heritage Documentation Program to District 7 and the Caltrans Transportation History Library in Sacramento shall be provided. Archive quality documentation shall also be provided to NPS, if NPS requests it. Copies of the documentation shall be offered to, at a minimum, the Los Angeles Public Library, Los Angeles Conservancy, Los Angeles City Historical Society, Historical Society of Southern California, and the California Office of Historic Preservation.</p> <p>H-3: <u>Online Publication:</u> Work with the Los Angeles Public Library to place the historical information from the HAER report, prescribed in Mitigation Measure H-1, on a City website with a link to a public library website, such as the Los Angeles Public Library website, available to the public for a minimum period of three years. The information link shall also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on their website.</p> <p>H-4: <u>Video Documentary:</u> Produce a documentary (motion picture or video) that addresses the history of the Los Angeles River monument bridges, and their importance and use within the broader contextual history of the City of Los Angeles. The motion picture or video shall be of broadcast quality, between 30- and 90-minute duration, and shall be made available to local broadcast stations, public access channels in the local cable systems, and requesting schools/libraries; one copy shall be submitted to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento.</p> <p>H-5: <u>Informational Booklet:</u> Produce and publish a booklet on the Historic Los Angeles River Bridges that addresses the history of the monumental concrete bridges of Los Angeles and this bridge’s place in that history. The booklet shall be similar in general format to the “Historic Highway Bridges of California” published by the California Department of Transportation (1991) and shall</p>

Table 3-1: Mitigation Measures for Significant Impacts under CEQA and minimization measures for less-than-significant impacts

Resource Area	Mitigation Measures
	<p>include high-quality, black and white images of the Los Angeles River Bridges, historic photographs or drawings, as appropriate, and text describing each of the bridges' location, year built, builder, bridge type, significant character-defining features and its historic significance. Ensure that an electronic version of the booklet is posted on City of Los Angeles website and produce paper copies for distribution to local libraries, institutions and historical societies. One copy shall be submitted to the Caltrans Transportation Library and History Center in Sacramento. Ensure that the camera-ready master booklet is maintained and produce additional copies if there is demand.</p> <p>H-6: <u>Design Plans and Specifications Reviews:</u> Ensure that a Caltrans Professionally Qualified Staff Principal Architectural Historian reviews the 65% and 95% design plans and specifications for the Glendale-Hyperion Viaduct Complex are in conformance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i> (SOI Standards), and that SHPO is afforded the opportunity to review the same design plans and specifications. Failure of the SHPO to respond within thirty (30) calendar days after receipt of the plans shall not preclude Caltrans from proceeding with the undertaking. Should the SHPO or the Council object within thirty (30) calendar days to any plans and specifications submitted for review, then Caltrans shall consult with the objecting party, for a period not to exceed ten (10) calendar days, to resolve the objection. If the objection cannot be resolved within this time period, the FHWA shall request the Council review the Finding in accordance with 36 CFR 800.5(c)(3).</p> <p>H-7: <u>Construction Monitoring Plan:</u> Prepare construction monitoring plan and conduct periodic monitoring of construction activities to ensure the project is conducted in a manner that meets the SOI Standards. Provide Caltrans a draft construction monitoring plan, in which Caltrans shall have thirty (30) calendar days after receipt of the document to review and comment, and prepare a final construction monitoring plan. The plan shall include description of the project, description of the historic property's character-defining features, discussion of the monitoring's purpose, and construction activities to be monitored, as well as methods, schedule, and procedures for monitoring and reporting. Caltrans shall ensure that the construction monitoring plan is implemented. Monitoring reports shall include photographs indicating that the activities are in compliance with the SOI Standards. The monitor shall meet the Secretary of the Interior's Professional Qualifications Standards for Architectural Historian or Historic Architect pursuant to CFR 36 CFR Part 61, Appendix A (PQS Standards).</p>
<p>Archaeological Resources</p>	<p>Although the Proposed Project is not expected to affect archaeological resources, as requested by the Chairman of the Gabrielino/Tongva Tribal Council, the following measure should be implemented:</p> <p>A-1: A professional archaeologist should monitor all ground disturbing activities during construction and should act according to the Special Order and Caltrans policies if archaeological resources are discovered.</p> <p>In addition, if buried cultural materials are encountered during construction, work in the area of the resource should be halted and applicable actions under City of Los Angeles and Caltrans policy should be implemented.</p>
<p>Hazards and Hazardous Materials</p>	<p>Note: HZ-1 through HZ-4 are legal requirements, and are included here for informational purposes only.</p> <p>HZ-1: <u>Contaminated Ground Water.</u> Conduct groundwater sampling and testing during the design phase to determine the level of groundwater contamination and the depths. Require the selected contractor to prepare and implement a management plan in the event that hazardous wastes, petroleum hydrocarbons, and/or contaminated</p>

Table 3-1: Mitigation Measures for Significant Impacts under CEQA and minimization measures for less-than-significant impacts

Resource Area	Mitigation Measures
	<p>groundwater are encountered during construction. Implementation could require the contractor to utilize a photo-ionization detector (PID) or other organic vapor detector during all pile drilling/boring activities and to employ appropriate worker protection measures should detected levels exceed Cal-OSHA standards. Groundwater that seeps into the drilled hole for pile installations would be pumped out of the pile hole as or before it is filled with concrete. The contaminated water would be temporarily storage, and the water removed (vacuum truck) or treated and discharged under permit from the City or LARWQCB, depending on the discharge outlet. All contaminated groundwater, contaminated soil, and hazardous wastes and debris encountered or generated during construction would be properly excavated, stored, tested, treated and/or disposed in accordance with all federal, state, and local laws and regulations.</p> <p>HZ-2: <u>Lead Chromate Traffic Paint.</u> Perform representative sampling and testing of yellow traffic paint along the viaduct complex that could be affected by construction prior to removal. If lead, lead chromate, or other hazardous materials in the paint exceed standards, abate the traffic paint (prohibit its removal by sand-blasting or grinding methods) and properly dispose of the material prior to construction.</p> <p>HZ-3: <u>Aerially Deposited Lead.</u> During design of the northbound I-5 off-ramp reconfiguration to Glendale Boulevard, perform representative sampling and testing of the area ramp alignment area for the presence of ADL. If ADL is present above action levels, abate the ADL-contaminated soil, in accordance with all applicable laws and regulations, prior to construction of the reconfigured ramp. A Health and Safety Plan by Contractor would be required pursuant to Contract General Conditions/General requirements (GC/GR).</p> <p>HZ-4: <u>Asbestos-Containing Materials or Lead-Based Paint.</u> Perform a survey (during the design phase or prior to construction) of the bridge joints that could be disturbed from demolition or construction activity to determine if they contain asbestos. In addition, conduct a survey for the presence of LBP in areas of the viaduct complex to be removed or physically affected. If present, remove the ACM and/or LBP prior to or as part of the demolition process, in accordance with all applicable laws, regulations, and rules. A Health and Safety Plan by Contractor would be required pursuant to GC/GR requirements.</p>
Traffic	<p>T-1: The signalization for the realigned off-ramp intersection will include traffic control for southbound Glendale Boulevard traffic, north of the Hyperion Bridge overcrossing. Traffic control will include, but not limited to, signalization to allow traffic to stop north of Hyperion Bridge overcrossing rather than at the new realigned off-ramp intersection. The design, placement, and operation of the device would meet LADOT and Caltrans requirements.</p> <p>T-2: Construct an alternate pedestrian crossing over the Los Angeles River across the existing Red Car piers (downstream of the viaduct complex) to connect the bike path along the southwest side of the Los Angeles River with Glendale Boulevard on the northeast side of the river. The pedestrian crossing, in conjunction with the new access to the LA River bikeway from northbound Glendale Boulevard, would provide a detour route around the Glendale Boulevard Bridges during construction. In order for this measure to serve as an effective detour for pedestrians, the pedestrian crossing and the new access to the bike path would have to be fully constructed and operational before commencing the widening of Glendale Boulevard Bridges.</p>

3.4 Monitoring Program for CEQA Mitigation

A Mitigation Monitoring and Reporting Program (MMRP) for adopted mitigation measures (under CEQA) would be implemented by the City's Bureau of Engineering and/or the Bureau of Contract Administration. Measures that require specifications in contract documents would be implemented by the Bureau of Engineering. Measures that require implementation during construction will be enforced by the Bureau of Contract Administration. Compliance monitoring for the mitigation measures would be the responsibility of the Bureau of Engineering.

3.5 Growth

The Proposed Project is a bridge improvement and safety project that would not add new travel lanes or increase travel capacity of the existing viaduct complex. Because of this, the Proposed Project would not result in land use, population, or traffic growth inducement.

3.6 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gases (GHGs), particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization's in 1988, has led to increased efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs related to human activity that include carbon dioxide (CO₂), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane).

Two terms are typically used when discussing the impacts of climate change. "Greenhouse Gas (GHG) Mitigation" is a term for reducing GHG emissions in order to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts due to climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).¹

Transportation sources (passenger cars, light duty trucks, other trucks, buses and motorcycles) in the state of California make up the largest source (second to electricity generation) of greenhouse gas emitting sources. Conversely, the main source of GHG emissions in the United States is electricity generation followed by transportation. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

¹ American Association of State Highway and Transportation Officials (AASHTO). "GHG Mitigation." Internet URL: http://climatechange.transportation.org/ghg_mitigation/. Last accessed April 12, 2012.

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improve system and operation efficiencies, 2) reduce growth of vehicle miles traveled (VMT) 3) transition to lower GHG fuels and 4) improve vehicle technologies. To be most effective all four should be pursued collectively. The following regulatory setting section outlines state, federal, and local (City of Los Angeles) efforts to comprehensively reduce GHG emissions from transportation sources, among other sources.

3.6.1 Regulatory Setting

3.6.1.1 State

With the passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level.

Assembly Bill 1493 (AB 1493), Pavley. Vehicular Emissions: Greenhouse Gases (AB 1493), 2002: requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the United States Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. California agencies will be working with Federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger cars model years 2017-2025.

Executive Order S-3-05: (signed on June 1, 2005, by Governor Arnold Schwarzenegger) the goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

AB32 (AB 32), the Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that ARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the State's Climate Action Team.

Executive Order S-01-07: Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by 2020.

Senate Bill 97 (Chapter 185, 2007): required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. The Amendments became effective on March 18, 2010.

3.6.1.2 City of Los Angeles

The City of Los Angeles released its climate action plan, "Green LA: An Action Plan to Lead the Nation in Fighting Global Warming", in May 2007. The plan sets forth a goal of reducing the

City's greenhouse gas emissions to 35 percent below 1990 levels by the year 2030, one of the most aggressive goals of any big city in the United States. This voluntary plan identifies over 50 action items, grouped into focus areas, to reduce emissions. While the emphasis is first on municipal facilities and operations, several measures address programs to reduce emissions in the community.

The cornerstone of the plan is the increased use of clean, renewable energy by the Los Angeles Department of Water and Power (LADWP). Many actions address City operations and facilities, while others describe services provided by the City to the community (*e.g.* LADWP's energy efficiency rebates and the Bureau of Sanitation's curbside recycling program). The City also attempts to influence policies not within its direct control that can aid in emissions reduction, such as through its membership on the board of Los Angeles County Metropolitan Transportation Authority.

The current focus of the plan is to reduce CO₂ emissions generated through the course of providing municipal services to residents of Los Angeles. Reductions in CO₂, when taken in aggregate with reductions by other jurisdictions and industries, will help slow the pace of global warming and reduce the impact on the environment. Whenever possible, the benefits (tons of GHG emissions reduced or avoided) of each of the City's GHG reductions actions will be calculated.

Between 1990 and 2004, the City reduced its CO₂ emissions by 4.5 percent, despite an approximate 12.5 percent increase in population. Two of the primary reasons for the decrease are the City's generation of cleaner electrical power (through the expansion of renewable energy sources) and the conservation of energy used in City buildings.

3.6.2 Project Analysis

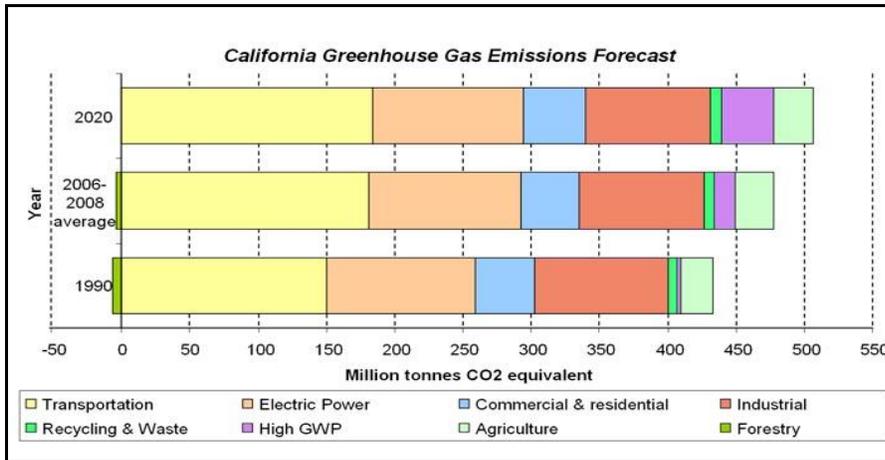
An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG.² In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(h)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

The AB 32 Scoping Plan contains the main strategies California will use to reduce GHG. As part of its supporting documentation for the Draft Scoping Plan, CARB released the GHG inventory for California (Forecast last updated: 28 October 2010). The forecast (Figure 3-1) is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included

² This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the SCAQMD (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

Figure 3-1: CALIFORNIA GREENHOUSE GAS FORECAST



Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006 (see Climate Action Program at Caltrans (December 2006)).

3.6.2.1 Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. Construction emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

3.6.2.2 Operational Emissions

Although short-term construction GHG emissions are unavoidable, there will likely be long-term GHG benefits as a result of the realignment and signalization of the northbound I-5 off-ramp to

Glendale Boulevard. As discussed in Section 2.10.3.2, the proposed project is not a capacity or volume increasing project; instead, it is a bridge seismic retrofit project with recirculation improvements like the realignment of the off-ramp. The signalization of the off-ramp will improve traffic flow as seen in the reduction of the existing LOS C (2011) to LOS B (2036). Additionally, the operation of the project will save VMT from shortening the path travelled for southbound vehicles exiting the I-5 from onto northbound Glendale Boulevard. Table 2.10-6 shows the resulting peak hour CO₂ emission savings from the lowered VMT. Therefore, the project will result in low- to no-potential for increase in GHG emissions.

3.6.3 CEQA Conclusion

Because of the long-term nature of climate change, and the short-term nature of the construction (2.5 years), the project's construction does not hinder, nor help the City's climate action plan. Additionally, the operation of the project does not increase the volume of traffic; instead, the northbound I-5 off-ramp realignment and signalization would save VMT and GHG emissions compared to the existing configuration. Therefore, the GHG impacts from the project are less than significant.

Chapter 4 Comments and Coordination

4.1 Introduction

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including: project development briefings and team meetings, community meetings, and notifications required as part of the Section 106 process. This chapter summarizes the results of the City of Los Angeles' efforts to fully identify, address and resolve project-related issues through early and continuing coordination.

4.2 Community Meetings

Several community meetings were held in the early part of the project development process to obtain feedback on the project as it was initially proposed. These community meetings were held as follows:

- October 22, 2002,
- November 11, 2002,
- January 9, 2003,
- January 16, 2003, and
- June 18, 2003.

Summaries of these meetings are provided below.

4.2.1 October 22, 2002: Friends of Atwater Community Meeting

On the evening of Tuesday, October 22, 2002, the Friends of Atwater Village sponsored a Community Meeting to address public questions and concerns about the Glendale-Hyperion Bridge Rehabilitation Project. Representatives from the Project Team were invited to provide information about the Project. Approximately 30 to 40 community members attended, as well as representatives of Councilmember Tom LaBonge's office and Councilmember Eric Garcetti's office.

The then-proposed retrofitting and widening of Glendale-Hyperion Bridge was described, and characterized as necessary in order to meet current federal standards. Construction was to be accomplished in three phases, over a period of 18+ months. Sidewalks were to increase from 5 feet to 10 feet, and only 3 feet would have been added on both sides of the road (for a total of 16 feet). The median of the street was not to change in size.

The feedback received at the meeting included the following:

- a. *Safety*: the Viaduct is currently unsafe for pedestrians and drivers
- b. *Sidewalks*: wider sidewalks would not provide many benefits.
- c. *Traffic*: vehicle speeds too high.
- d. *Lighting*: current lighting is inadequate.
- e. *Widening*: the community preferred no widening or taking of the greenspace at the north end of the viaduct complex.

4.2.2 November 11, 2002: Friends of Atwater Village Bridge Walk

4.2.3 January 9, 2003: Atwater Village Neighborhood Council Meeting

At the invitation of the Atwater Village Neighborhood Council (AVNC), members of the Glendale-Hyperion Bridge Project Team attended AVNC's monthly meeting on January 9, 2003, to provide an update of changes that have been made to the plans to retrofit and widen the Bridge. The changes particularly reflect the community input gathered by the Project Team at the Friends of Atwater Village Bridge Walk, which was held on November 11, 2002.

The feedback received at the meeting included the following:

- a. *I-5 Glendale Boulevard Off-ramp*: the community asked if the project addresses the need to reconfigure the I-5 Glendale Boulevard off-ramp to accommodate travelers who want to travel south on Glendale Boulevard, instead of proceeding north and then having to make a U-turn at the traffic signal.
- b. *Safety*: the community expressed concerns about personal safety beneath the Viaduct.
- c. *Widening*: the community questioned the need to widen the bridge and taking of greenspace. The community also felt that the Viaduct widening and straightening would allow traffic to flow more quickly, which would not lead to greater pedestrian safety.

4.2.4 January 16, 2003: Atwater Village Residents Association Town Hall Meeting

On January 16, 2003, members of the Project Team attended the Town Hall Meeting that was organized by the Atwater Village Residents Association. Approximately 25 to 30 community members attended.

The discussion at the townhall meeting centered on clarifying the need for widening the Glendale-Hyperion Viaduct. During the meeting, four or five community members forcefully expressed their opposition particularly to the widening and to the seismic retrofit as well. They expressed the opinion that neither improvement was needed because "the Bridge has held up" during several earthquakes in the past and it would continue to do so; they also expressed the view that "few pedestrians use the Bridge."

Opposition to the widening appeared to focus on the following key themes:

- a. *Traffic speed would increase*: drivers would gain the ability to drive faster on the Bridge (thereby making it even more hazardous for pedestrians).

- b. Potential loss of the grass knoll (or any portion of it) on Glendale Boulevard and Ferncroft to accommodate the widening was unacceptable.

4.2.5 June 18, 2003: Summary of a General Community Meeting

On the evening of Wednesday, June 18, 2003, the City of Los Angeles sponsored a Community Meeting at Silver Lake Community Church to provide up-to-date information about the plans to retrofit and rehabilitate the Glendale-Hyperion Bridge, including a revised project description developed based on prior community input. Approximately 20 community members were present, including a representative from Councilmember Eric Garcetti's office.

The feedback received at the meeting included the following:

- a. *Approval of New Concept:* Several participants expressed approval of the concept because of the reduced widening of northbound and southbound Glendale Boulevard that spans the Bridge, and the preservation of existing green space. Gratitude for the willingness of City staff and the Project Team to address community concerns was expressed by several participants.
- b. *Pedestrian Walkway:* the community felt that it might be difficult to keep all pedestrians on the west side of the Bridge and that crossing from the Atwater side to the sidewalk/crosswalk on the east side may be difficult.
- c. *Los Angeles River:* the community asked if diverting pedestrians (providing places to cross) to other places along the Los Angeles River is a possibility.

4.3 Scoping Process

4.3.1 Notices and Scoping Meetings

The CEQ NEPA Regulations (40 CFR Part 1500 *et seq.*) and the *CEQA Guidelines* (Sections 15082-15083) recommend that federal, state, and local lead agencies use a public scoping process to help identify the various issues to be addressed in the environmental document. Scoping allows public agencies and the general public to learn about the proposed Project and to submit suggestion regarding alternatives and the types of impacts to be evaluated.

The City of Los Angeles prepared and circulated a Notice of Preparation of an Environmental Impact Report on January 25, 2007 (CLA, 2007). During the review and comment periods, the City of Los Angeles held two Community "Scoping" Meetings for the proposed improvements to the Glendale Hyperion Viaduct. The first meeting was held on Thursday, February 8, 2007 at Glenfeliz Boulevard Elementary School, and the second meeting was held on Thursday, February 15, 2007 at Silver Lake Community Church. The two meetings were identical in purpose, format and content.

A newspaper advertisement announcing the NOP was published on January 25, 2007 in the Los Angeles Times. The notice was also posted on the City website¹.

¹ http://eng.lacity.org/techdocs/emg/GlendaleHyperionViaductBridges_NOP.pdf

The purpose was to illustrate and describe the improvements in detail, and to solicit and capture community comments regarding the project and content of the environmental document. Appendix E contains a copy of the NOP and its distribution list.

The meeting was structured to facilitate dialogue between City staff, consultant team members, and the community, beginning with a brief “Open House” session during which community members could view plans displayed on easels as well as “before and after” images of the existing and proposed conditions. They could also talk informally with City staff and consultant team members and ask questions about the improvements. That session was followed by a brief PowerPoint presentation provided jointly by City staff and consultants, which illustrated the proposed improvements, along with the project’s environmental review process, community involvement opportunities, and the proposed schedule. Community members were then encouraged to ask questions and offer their comments, which were recorded graphically by a project team member on large sheets of paper and viewed throughout the meeting. It was emphasized that these comments would be considered during the environmental review process. Meeting participants were also asked to provide written comments, either during the meeting, or at a later more convenient time, if they wished.

Approximately 25 community members attended the February 8, 2007 meeting, including a representative of Council President Eric Garcetti. Approximately 55 community members attended the February 15, 2007 meeting, including Councilmember Tom LaBonge and his representatives, as well as a representative of Council President Eric Garcetti.

4.3.2 Summary of Comments Received during the Scoping Process

Comments received at the scoping meetings and in response to the Notice of Preparation included the following issues (CLA, 2007):

- Construction Concerns
 - Traffic congestion, phasing, and access.
 - Concurrent construction of other projects.
 - Lighting and noise.
 - Put a left turn in immediately at the I-5 off-ramp (onto Glendale Boulevard). It will help mitigate traffic impacts during construction.
- Physical Changes to the Viaduct Complex
 - Visual changes to the Viaduct Complex.
 - Concrete barriers may hide the replica balustrades.
 - Add ramps on the stairways to facilitate bike movements.
- Pedestrian and Vehicular Safety
 - Install a smart crosswalk at the northern pedestrian crossing.
 - Slow down traffic on the viaduct complex.
 - Options for the median on Hyperion Avenue

- Los Angeles River
 - Add a pedestrian walkway over the Los Angeles River using the old Red Car piers.
- Traffic Impacts
 - Related to the I-5 off-ramp reconfiguration.
 - Center barrier may cause more accidents.

Various alternatives were suggested by members of the public or other agencies to improve the proposed project. Many of these suggestions have been incorporated into the proposed project.

4.3.3 Suggestions Received During the Scoping Process

4.3.3.1 Salvage and Reuse Existing Lights

The careful salvage, restoration, and reuse of the existing light poles and globes appear viable and have been incorporated into the proposed project.

4.3.3.2 Improve the Pedestrian Crosswalk Proposal

The City's Department of Transportation (LADOT) is evaluating different options for the pedestrian cross walk proposed across southbound Glendale Boulevard from Hyperion Avenue at the north end of the viaduct complex. Options under consideration include, but are not limited to, a painted designated crosswalk, a designated crosswalk that is also supplemented with traffic warning lights that are initiated by pedestrians, and a controlled crosswalk such as a smart crosswalk that is linked to the signal at Glenfeliz Boulevard. The specific option has not yet been determined; however, none of these options is expected to result in physical changes that could significantly affect the environment. LADOT will make a determination during the design process, if the project is approved.

4.3.3.3 Reuse and Restore the Existing Balustrades

Many of the complex's original balustrade railings were covered with concrete in 1962 as part of a rail repair project. Discussions with City engineering staff knowledgeable of the rail repair project have indicated that poor construction quality of the original balustrades necessitated the covering of the rails. Balustrade quality problems often occurred when concrete was not adequately vibrated during casting, thereby allowing the elements to cause deterioration of the concrete. The rail covering repair project was intended to protect the balustrades from the elements to stop further deterioration (such as spalling and cracking exacerbated by water exposure). In addition, as part of the 1962 rail repair project, the inner and outer edges of the top rail were chipped away to accommodate the concrete covering.

The removal of the concrete covering from the railings and the rehabilitation of the existing balustrades are not considered viable due to past deterioration and the currently damaged condition beneath the rail coverings.

The proposed replica replacement balustrades would be constructed using state-of-the-art concrete casting methods, including methods to ensure proper concrete densities. In addition,

the City would specify the use of concrete meeting quality and strength standards suitable for balustrade railings.

4.3.3.4 Revisit the Need to Widen the Glendale Boulevard Bridges

The suggestion to revisit the need to widen the Glendale Boulevard bridges was considered but withdrawn because this alternative fails to meet project purpose and need.

4.3.3.5 Complete the I-5 Off-ramp Reconfiguration in Phase I

The suggestion to complete the reconfiguration of the I-5 off-ramp to Glendale Boulevard before the construction of the main improvements to the viaduct complex would have the effect of reducing the amount of traffic on northbound Glendale Boulevard (north of the off-ramp) and southbound Glendale Boulevard (south of Glenfeliz Boulevard) during construction. Because of this, the construction staging plans have been modified to perform this reconfiguration in the first construction phase.

4.3.3.6 Eliminate Proposed Center Median

The original proposal to provide a one-foot-high median separating opposing traffic along Hyperion Avenue was discussed at both scoping meetings and amongst City staff (Department of Transportation and Bureau of Engineering). These discussions initially led to a decision to eliminate the median barrier entirely because it was felt that a one-foot median would not provide a reliable physical barrier between opposing traffic, and could cause traffic problems if vehicles cross over such a low median. Because of this concern, and the occurrence of a recent fatal accident on Hyperion Avenue in which a vehicle crossed over the existing striped median and became engaged in a head-on collision, a standard barrier similar to Type 60S or Type 60SC of the Caltrans Standard Plan is now being proposed. Such median barrier would facilitate the safety improvement associated with the modification of the roadway cross-section from crown to super-elevation.

4.3.3.7 Eliminate the Proposed Crash Barrier in front of the Balustrades

The suggestion to eliminate the proposed crash barrier along the replica balustrades was considered but withdrawn because without crash-rated barriers to protect the proposed decorative railing, the project would not qualify for federal funding assistance. Caltrans requires minimal crash standards for bridges over freeways and neither the existing nor proposed replica balustrades meet the Caltrans crash standards. It should be noted that the major view of the replica balustrade would be from the outside of the bridge and the crash barrier only partially obstructs the drive-through view. The proposed barrier in conjunction with the replicated balustrades will represent an improvement over existing conditions, which are fully covered railings along both sides of Hyperion Avenue.

4.3.3.8 Add Lights near the Viaduct Stairs

The City has considered the recommendation to add lighting near the stairs that connect Glendale Boulevard to Hyperion Avenue. Because the staircase landing is set back from the street, the addition of lighting around the landing has been added to the project.

4.3.3.9 Crossing over the Los Angeles River on the Red Car Piers

During one of the several community scoping meetings conducted following release of the NOP for this document, a suggestion was received that a crossing over the Los Angeles River utilizing the existing Red Car piers be included in the proposed project. City staff reviewed this recommendation and determined that such a river crossing would provide pedestrian and bicycle access benefits to the local residents, pedestrians, students, and bicyclists that use the viaduct complex and the Los Angeles River bike path. City staff also determined that such a crossing could help offset potential access impacts during construction of improvements to the Glendale Boulevard bridges over the Los Angeles River. As a consequence, a crossing over the Los Angeles River along the Red Car piers has been applied to the proposed project as mitigation.

4.3.3.10 Improve Bicycle Access to the Bike Path

The proposed project includes a new access ramp to the Los Angeles River bike path from northbound Glendale Boulevard. A direct bike ramp from the viaduct complex to the Los Angeles River bike path was considered, but withdrawn due to the potential for impacts and constructability issues. Given the historic nature of the bridge, building a ramp to connect from the Hyperion Bridge to the river is likely to require substantial modifications to the bridge and could significantly affect its historic status. Such an alternative would also pose constructability difficulties given the proximity of the Los Angeles River, I-5, the off-ramp, and viaduct structures, as well as the height differences between the Hyperion viaduct structure and the bike path.

4.3.3.11 Eliminate Right Turns to Ettrick Street (from Hyperion Avenue)

The City's Department of Transportation will consider eliminating right turns from southbound Hyperion Avenue onto Ettrick Avenue during peak hours.

4.3.3.12 Correct Roadway Banking along Hyperion Avenue

The proposed project would include improvements to Hyperion Avenue, including roadway banking (superelevation, or cross-slope) along the curve over I-5 and beneath the Waverly Drive Bridge.

4.3.3.13 Reduce Speeding on Hyperion Avenue

The City's Department of Transportation is considering measures that can be implemented to reduce excessive speeding along Hyperion Avenue on the viaduct complex.

4.3.3.14 Sidewalk on the East Side of Hyperion Avenue

The placement of a sidewalk along the east side of the Hyperion Avenue structure instead of the west side was considered but withdrawn because it would result in the elimination of pedestrian access to Hyperion Avenue via staircases from Riverside Drive and Glendale Boulevard, as the existing staircases currently connect with only the sidewalk along the west side of the Hyperion Avenue structure. In addition, it is not possible to place a sidewalk along both sides of the Hyperion Avenue structure due to the limited width of Hyperion Avenue, which is dictated by the retaining walls and the Waverly Drive Bridge at this location. For these reasons, this sidewalk along the east side of Hyperion Avenue has been eliminated from further consideration.

Through this coordination, city staff was also able to incorporate design features desired by members of the community, as indicated below in Table 4-1.

Table 4-1: Alternatives or Enhancements Recommended by the Public		
Alternative/Enhancement		Action
1.	Refurbish, improve, and reuse the existing light poles and globes	Incorporated into the Proposed Project
2.	Improve the proposed pedestrian crossing at the north end of the viaduct to increase safety for pedestrians.	Incorporated into the Proposed Project
3.	Reuse and restore the existing balustrades instead of replicating them.	Withdrawn from further consideration
4.	Revisit the need to widen the Glendale Boulevard bridges over the Los Angeles River.	Withdrawn from further consideration
5.	Complete the I-5 off-ramp reconfiguration before constructing other elements of the viaduct improvement to minimize traffic impacts during construction.	Incorporated into the Proposed Project
6.	Eliminate the proposed center barrier median (as described in the NOP).	Withdrawn from further consideration
7.	Eliminate the barrier in front of the balustrades to avoid blocking the view to the balustrades.	Withdrawn from further consideration
8.	Add lighting near the stairs that provide pedestrian access to Hyperion Avenue from southbound Glendale Boulevard.	Incorporated into the Proposed Project
9.	Incorporate a crossing over the Los Angeles River utilizing the existing Red Car piers.	Required as mitigation
10.	Look at ways to improve use of the bike path, including access improvements.	Incorporated into the Proposed Project
11.	Consider eliminating right turns on to Ettrick Street (from southbound Hyperion Avenue to eliminate cut-through traffic).	Under consideration by LADOT
12.	Correct bank issues along Hyperion Avenue.	Incorporated into the Proposed Project
13.	Address speeding problem on Hyperion Avenue.	Under consideration by LADOT
14.	Put the sidewalk on Hyperion Avenue on the south (east) side of the bridge.	Withdrawn from further consideration

Source: Community Scoping Meetings of February 8, 2007 and February 15, 2007. (CLA, 2007)

4.4 Section 106 Coordination

As part of the Section 106 compliance documentation, coordination with various organizations that may have an interest in historic nature of the viaduct complex was initiated (JRP, 2006). This coordination included solicitation of comments from the following individuals and organizations:

- Linda Dishman, Los Angeles Conservancy
- Isabel Rosas, Los Angeles Cultural Heritage Commission
- Eddy Feldman, Los Angeles City Historical Society
- Denise S. Spooner, Historical Society of Southern California

In addition, the City sent a solicitation letter to Joe Linton, Friends of the Los Angeles River, due to the project's proximity to the Los Angeles River.

The City also hosted a briefing with representatives of the Los Angeles Conservancy on April 13, 2006 to provide an overview of several bridge projects, including the proposed Project. To date, no formal comments have been received from the above organizations.

The viaduct complex is eligible for listing in the National Register of Historic places, and is a City monument. In order to minimize potential impacts to the viaduct complex, City and consulting design staff, and staff of JRP Historical Consulting, LLC have been coordinating on design features that can be included in the project designs. In addition, the City has actively sought public comments on the project design and other areas of community interest, and has incorporated those comments into the current design proposal. Through this coordination, the project design has evolved to become as consistent as possible with the Secretary of Interior's Standards for Rehabilitation, including replacement railings (with replicas of the original balustrade design), the careful removal and reuse of the abutment pylons along northbound and southbound Glendale Boulevard viaducts (over the Los Angeles River), and the reuse of lights standards.

Furthermore, in accordance with Section 106 of the NHPA, a request was made to the Native American Heritage Commission (NAHC) on May 3, 2004 for a review of the *Sacred Lands File*, to determine if any known cultural properties are present within or adjacent to the Project APE. The NAHC responded on May 18, 2004 stating that no Native American resources are known to exist within or adjacent to the Project APE; however, the NAHC requested that 11 Native American individuals and organizations be contacted to solicit any information or concerns regarding cultural resources issues related to the Project. These 11 individuals and organizations were contacted on May 20, 2004. On May 25, 2004, Mr. Anthony Morales, Chairman of the Gabrielino/Tongva Tribal Council contacted Applied EarthWorks by phone stating that he had concerns regarding the proposed Project due its proximity to the Los Angeles River where Native peoples often located their villages and cemeteries. Mr. Morales requested that a professional archaeologist be present during any Project-related ground disturbing activities. As well, Mr. Morales wishes to be informed if any prehistoric cultural materials or human remains were inadvertently discovered during Project-related construction. As of June 10, 2004, no other comments have been received from the Native American organizations and individuals contacted.

4.5 Site Visits: August – September 2002

Door-to-door visits to residents along Hyperion Avenue and Waverly Drive and to businesses along Riverside Drive in the project vicinity were undertaken by City representatives in August and September 2002. Concerns expressed by residents and businesses included:

- Construction impacts (noise, dust, access, etc.)
- Personal safety issues related to crime in the area
- Impacts related to widening of Hyperion Avenue
- Loss of on-street parking
- Disruptions to a business that has warehousing and storage operations beneath the bridge.
- Impacts related to the historic status of the viaduct complex.

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Chapter 6 References

6.0 Chapter: Summary

California Department of Transportation (Caltrans). 2004. *2004/2005 HBRR Program*. Division of Local Assistance. November 19, 2004.

City of Los Angeles (CLA). 2007a. Community Scoping Meetings of February 8, 2007 and February 15, 2007 - Draft Summary. February 23, 2007.

Standard Environmental Reference (SER). 2011. *Volume 1, Guidance for Compliance*. Accessed at <http://www.dot.ca.gov/ser/vol1/vol1.htm>. Last updated March 24, 2011.

6.1 Chapter 1: Introduction

Bureau of Engineering (BOE). 2006. *Special Order No. 001-0406, Guidelines Pursuant to Mayor's Executive Directive No. 2 – Rush Hour Construction on City Streets*. April 14, 2006.

California Department of Transportation (Caltrans). 2004. *2004/2005 HBRR Program*. Division of Local Assistance. November 19, 2004.

City of Los Angeles (CLA). 2007a. Community Scoping Meetings of February 8, 2007 and February 15, 2007 - Draft Summary. February 23, 2007.

City of Los Angeles (CLA). 2007b. Revised 65% Design Plans – Glendale Boulevard-Hyperion Avenue Viaduct Improvement Project. December 2007.

City of Los Angeles (CLA). 2007c. Pedestrian Circulation Study – Glendale - Hyperion Bridge Complex. November 2007.

City of Los Angeles (CLA). 2010. *2010 Bicycle Plan*. March 1, 2012.

Federal Highway Administration (FHWA). 1995. *National Bridge Inventory Coding Guide*. December 1995.

Railing Repairs General Plan and Details. 1962. Glendale – Hyperion Viaduct across the Los Angeles River, Sheet D-17870. November 1962.

6.2 Chapter 2: Setting, Impacts, and Mitigation

California Department of Transportation (Caltrans). 2011. *Environmental Impact Report/Environmental Assessment Annotated Outline*. July 2011.

City of Los Angeles (CLA). 2005a. *Preliminary Environmental Studies (PES) Form for the Glendale Boulevard-Hyperion Avenue Viaduct Improvement Project*. April 2005.

City of Los Angeles (CLA). 2007d. *Notice of Preparation of a Draft Environmental Report – Glendale – Hyperion Viaduct Complex*. January 8, 2007.

6.2.1 Land Use

City of Los Angeles (CLA). 1988. *Hollywood Community Plan*. December 13, 1988.

City of Los Angeles (CLA). 1999. *Northeast Los Angeles Community Plan*. June 15, 1999.

City of Los Angeles (CLA). 2011. *Bicycle Plan – City Bikeway System Map*. March 1, 2011.

6.2.2 Community Impacts

City of Los Angeles (CLA). 2007e. *Navigate LA*. Accessed at <http://navigatela.lacity.org/index.cfm>. September 2007.

Council on Environmental Quality (CEQ). 1997. *Environmental Justice: Guidance Under the National Environmental Policy Act*. December 10, 1997.

Presidential Document No. 279. 1994. Memorandum from the President to the Heads of Departments and Agencies. February 11, 1994.

U.S. Census Bureau. 2012. Census Tract Data Accessed from <http://factfinder2.census.gov/>. March 2012.

6.2.3 Utilities

City of Los Angeles (CLA). 2007e. *Navigate LA*. Accessed at <http://navigatela.lacity.org/index.cfm>. September 2007.

6.2.4 Traffic

ACT Consulting Engineers, Inc. (ACT). 2004. Traffic Study for the Proposed Realignment of I-5 Northbound Off Ramp Intersection with Glendale Boulevard. May 17, 2004.

ACT Consulting Engineers, Inc. (ACT). 2007a. *Revised Traffic Data: Glendale Boulevard – Hyperion Avenue Viaduct Complex Improvement Project*. August 27, 2007.

ACT Consulting Engineers, Inc. (ACT). 2007b. *Stage Construction Summary*. August.

Bureau of Engineering (BOE). 2006. *Special Order No. 001-0406, Guidelines Pursuant to Mayor’s Executive Directive No. 2 – Rush Hour Construction on City Streets*. April 14, 2006.

California Department of Transportation (Caltrans). 2011. *Standard Environmental Reference (SER): Volume 1, Guidance for Compliance*. Accessed at <http://www.dot.ca.gov/ser/vol1/vol1.htm>. Last updated March 24, 2011.

City of Los Angeles (CLA). 1988. *Hollywood Community Plan*. December 13, 1988.

City of Los Angeles (CLA). 1999. *Transportation Element of the General Plan*. Appendix E – Inventory of Designated Scenic Highways. Last updated September 8, 1999.

City of Los Angeles (CLA). 1999. *Northeast Los Angeles Community Plan*. June 15, 1999.

City of Los Angeles (CLA). 2011. *Bicycle Plan – City Bikeway System Map*. March 1, 2011.

MGE Engineering, Inc. (MGE). 2012. *Glendale Boulevard-Hyperion Avenue Viaduct Complex Improvement Project Draft Project Report*. January 27, 2012.

6.2.5 Visual/Aesthetics

City of Los Angeles (CLA). 1999. *Northeast Los Angeles Community Plan*. June 15, 1999.

City of Los Angeles (CLA). 1999. *Transportation Element of the General Plan*. Appendix E – Inventory of Designated Scenic Highways. Last updated September 8, 1999.

Federal Highway Administration (FHWA). 1981. *Visual Impact Assessment for Highway Projects*. Publication No. FHWA-HI-88-054. March 1981.

UltraSystems Environmental, Inc. 2012. *Visual Impact Assessment Glendale Boulevard-Hyperion Avenue Complex of Bridges Improvement Project*. April 2012.

6.2.6 Historical Resources

California Department of Transportation (Caltrans). 2004. *City of Los Angeles Monumental Bridges 1900-1950*. May 2004.

JRP Historical Consulting, LLC (JRP). 2008. *Finding of Effect for Glendale-Hyperion Bridge Complex Improvement Project*. October 2008.

JRP Historical Consulting, LLC (JRP). 2008. *Historic Property Survey Report*. October 2008.

Lee, Portia. 2000. *Historic American Engineering Record, Glendale-Hyperion Viaduct, HAER No. CA-272*, 14.

6.2.7 Archaeological Resources

Applied EarthWorks (AEW). 2008. *Archaeological Survey Report for Glendale – Hyperion Viaduct Structure Complex Improvement*. February 2008.

JRP Historical Consulting, LLC (JRP). 2008. *Historic Property Survey Report*. October 2008.

6.2.8 Hydrology and Water Quality

CH2M HILL. 2002. *Glendale Operable Unit Superfund Site, Remedial Action Plan*. September 2002.

CH2M HILL. 2004a. *Initial Site Assessment Glendale-Hyperion Bridges and Street Improvement Project*. June 2004.

CH2M HILL. 2004b. *Location Hydraulic Study, Glendale-Hyperion Viaduct Improvement Project*. April 2004.

City of Los Angeles (CLA). 2005b. Integrated Resources Program (IRP). 2006. *Final Environmental Impact Report*. November 2006.

Los Angeles Stormwater. <http://www.lastormwater.org/green-la/standard-urban-stormwater-mitigation-plan/>. Accessed June 22, 2012.

Regional Water Quality Control Board, Los Angeles Region (4) (LARWQCB). 1995. *Water Quality Control Plan – Los Angeles Region*. Last updated February 23, 1995.

6.2.9 Hazards and Hazardous Materials

CH2M HILL. 2004a. *Initial Site Assessment Glendale-Hyperion Bridges and Street Improvement Project*. June 2004.

UltraSystems Environmental Inc. 2012. *Supplement to Initial Site Assessment for Glendale-Hyperion Bridges and Street Improvement Project*. April 2012.

6.2.10 Air Quality

California Air Resources Board (CARB). 2010. *CA Almanac of Emissions and Air Quality*. <http://www.arb.ca.gov/aqd/almanac/almanac.htm>. Last updated May 3, 2010.

California Air Resources Board (CARB). 2011. *ADAM Air Quality Database*. Area Designations Maps/State and National. <http://www.arb.ca.gov/adam/index.html>. Accessed November 30, 2011.

California Department of Conservation. 2000. *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*. Division of Geology and Mines. Last updated August 2000.

California Department of Transportation (Caltrans). 2011. *Areas Subject to Transportation Conformity Requirements in California*. <http://www.dot.ca.gov/hq/env/air/pages/conftable.htm>. Last updated December 8, 2011.

CEQAnet Database Query. 2011. <http://www.ceqanet.ca.gov/ProjectList.asp>. Accessed December 13, 2011.

CH2M HILL. 2011. *Air Quality Technical Study Glendale-Hyperion Bridges and Street Improvement Project*. December 2011.

Environmental Protection Agency (EPA). 2010. *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas*. <http://www.epa.gov/otaq/stateresources/transconf/policy/420b10040.pdf>. Accessed November 22, 2011.

Environmental Protection Agency (EPA). 2011. *Carbon Monoxide Information*. <http://www.epa.gov/oaqps001/greenbk/cindex.html>. Accessed November 29, 2011.

Federal Highway Administration (FHWA). 2009. *Interim Guidance on Air Toxic Analysis in NEPA Documents*. Last updated September 30, 2009.

Federal Register. 2010. *Designation of Areas for Air Quality Planning Purposes; California; San Joaquin Valley, South Coast Air Basin, Coachella Valley, and Sacramento Metro 8-Hour Ozone Nonattainment Areas; Reclassification*. Federal Register 75(86):24409-24421. Accessed May 5, 2010.

Goldstene, J. 2007. Personal letter communication from California Air Resources Board, Sacramento, California to Wayne Nastri, U.S. Environmental Protection Agency, Region 9, San Francisco, California (November 28, 2007).

MGE Engineering, Inc. (MGE). 2012. *Glendale Boulevard-Hyperion Avenue Viaduct Complex Improvement Project Draft Project Report*. January 27, 2012.

South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*. November 1993.

South Coast Air Quality Management District (SCAQMD). 2007a. *Air Quality Management Plan*, p. 341. Adopted June 1, 2007.

South Coast Air Quality Management District (SCAQMD). 2007b. *A Resolution of the Governing Board of the South Coast Air Quality Management District certifying the Final Program Environmental Impact Report for the 2007 Air Quality Management Plan*. Resolution No. 07-9. June 1, 2007.

South Coast Air Quality Management District (SCAQMD). 2008. *Final Localized Significance Threshold Methodology*. Revised July 2008.

Southern California Association of Governments (SCAG). 2008. *Final 2008 Regional Transportation Improvement Program (RTIP) – Local Highway Projects*. October 2008.

6.2.11 Noise

California Department of Transportation (Caltrans). 2011. *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects*. May 2011.

Federal Highway Administration (FHWA). 2005. *Procedures for Abatement of Highway Traffic Noise and Construction Noise*. 23 CFR Part 772. Last updated April 1, 2005.

6.2.12 Wetlands

CEQAnet Database Query. 2011. <http://www.ceqanet.ca.gov/ProjectList.asp>. Accessed December 2, 2011.

UltraSystems Environmental. 2011. *Natural Environment Study: Glendale-Hyperion Viaduct Improvement Project*. August 2011.

6.2.13 Plant Species

California Department of Fish and Game (CDFG). 2011. *California Natural Diversity Database query*. Accessed March 2011.

CEQAnet Database Query. 2011. <http://www.ceqanet.ca.gov/ProjectList.asp>. Accessed December 2, 2011.

UltraSystems Environmental. 2011. *Natural Environment Study: Glendale-Hyperion Viaduct Improvement Project*. August 2011.

6.2.14 Animal Species

California Department of Fish and Game (CDFG). 2011. *California Natural Diversity Database query*. Accessed March 2011.

CEQAnet Database Query. 2011. <http://www.ceqanet.ca.gov/ProjectList.asp>. Accessed December 2, 2011.

Swift, C. C., Haglund, T. R., Ruiz, M., and Fisher, R. N. 1993. *The status and distribution of the freshwater fishes of southern California*. Bulletin of the Southern California Academy of Sciences, 92(3):101-167.

UltraSystems Environmental. 2011. *Natural Environment Study: Glendale-Hyperion Viaduct Improvement Project*. August 2011.

6.2.15 Threatened and Endangered Species

California Department of Fish and Game (CDFG). 2011. *California Natural Diversity Database query*. Accessed March 2011.

CEQAnet Database Query. 2011. <http://www.ceqanet.ca.gov/ProjectList.asp>. Accessed December 2, 2011.

UltraSystems Environmental. 2011. *Natural Environment Study: Glendale-Hyperion Viaduct Improvement Project*. August 2011.

6.3 Chapter 3: CEQA Checklist

California Department of Transportation (Caltrans). 2011. *Environmental Impact Report/Environmental Assessment Annotated Outline*. July 2011.

City of Los Angeles (CLA). 2007a. Community Scoping Meetings of February 8, 2007 and February 15, 2007 - Draft Summary. February 23, 2007.

6.4 Chapter 4: Comments and Coordination

City of Los Angeles (CLA). 2007a. Community Scoping Meetings of February 8, 2007 and February 15, 2007 - Draft Summary. February 23, 2007.

City of Los Angeles (CLA). 2007d. *Notice of Preparation of a Draft Environmental Report – Glendale – Hyperion Viaduct Complex*. January 8, 2007.

JRP Historical Consulting, LLC (JRP). 2008. *Historic Property Survey Report*. October 2008.

Chapter 7 Distribution List

7.1 IS/EA

The IS/EA was made available for review by the general public, government agencies, and other interested parties. The public notification process announcing availability of the IS/EA is summarized below.

7.1.1 Locations Where IS/EA Can Be Viewed

Copies of the IS/EA are available for viewing at the following locations:

- Bureau of Engineering, Bridge Improvement Division
1149 S. Broadway, Suite 750
Los Angeles, CA 90015
- Caltrans District 7
100 S. Main Street
Los Angeles, CA 90012
- Atwater Village Branch Library
3379 Glendale Boulevard
Los Angeles, CA 90039
- Elendale Branch Library
2011 West Sunset Boulevard
Los Angeles, CA 90026
- Los Feliz Branch Library
1874 Hillhurst Avenue
Los Angeles, CA 90027
- Silver Lake Branch Library
2411 Glendale Blvd
Los Angeles, CA 90039
- Silver Lake Recreation Center
1850 West Silver Lake Drive
Los Angeles, CA 90026

- The City of Los Angeles website: <http://eng.lacity.org/techdocs/emg>
- Caltrans website: <http://www.dot.ca.gov/dist07/resources/envdocs/>

7.1.2 IS/EA Distribution List

The following officials, agency representatives, and interested parties received either a copy of the draft environmental document or a notice informing them of its availability.

7.1.2.1 Elected Officials

Federal

Congressman Adam Schiff , District 28
 Senator Barbara Boxer
 Senator Diane Feinstein

State

State Senator Carol Liu, District 25
 State Senator Kevin de Leon, District 22
 State Assembly Member Mike Gatto, District 43

Local

Los Angeles County Supervisor Zev Yaroslavsky, District 3

City of Los Angeles

Councilman Tom LaBonge, Council District 4
 Councilman Mitch O'Farrell, Council District 13
 Mayor Eric Garcetti

City of Glendale

Council Member Laura Friedman
 Council Member Ara Najarian
 Council Member Zareh Sinanyan
 Council Member Frank Quintero
 Mayor Dave Weaver

7.1.2.2 Governmental Agencies

Federal

Advisory Council on Historic Preservation
 Native American Tribal Councils
 U.S. Army Corps of Engineers – Los Angeles District
 U.S. Department of Housing and Urban Development (HUD), Office of Sustainable Housing
 and Communities
 U.S. Department of the Interior
 U.S. Department of Transportation, Federal Highway Administration

U.S. Environmental Protection Agency Region 9
 U.S. Federal Emergency Management Agency
 U.S. Fish & Wildlife Service – Carlsbad Office

State

California Air Resource Board
 California Department of Fish and Wildlife – South Coast Region (5)
 California Highway Patrol
 California Native American Heritage Commission
 California Regional Water Quality Control Board – Los Angeles Region (4)
 California Transportation Commission
 Office of Planning and Research, State Clearinghouse

Regional

Southern California Association of Governments
 South Coast Air Quality Management District

Los Angeles County

County of Los Angeles Metropolitan Transportation Authority
 County of Los Angeles Department of Public Works/ Los Angeles River
 Cooperation Committee

City of Glendale

City of Glendale Department of Public Works

7.1.2.3 Local

Other Interested and Potentially Affected Parties

Archstone Los Feliz Apartment
 Atwater Village Chamber of Commerce
 Atwater Village Neighborhood Council
 County of Los Angeles Bicycle Coalition
 Echo Park Improvement Association
 Elysian Valley Riverside Neighborhood Council
 Franklin Hills Residents Association
 Friends of Atwater Village
 Friends of Griffith Park
 Friends of the Los Angeles River
 Greater Echo Park Elysian Neighborhood Council
 Griffith Park Neighborhood Council
 Historical Society of Southern California
 Los Angeles River Kayak Safari
 Los Angeles City Historical Society
 Los Angeles Conservancy
 Los Angeles Griffith Park Ranger
 Los Angeles River Center and Gardens

Los Angeles River Cooperation Committee
 Los Feliz Estates Owners Association
 Los Feliz Improvement Association
 Los Feliz Square Neighborhood Association
 Los Angeles Conservation Corps
 Los Angeles Riverfront Collaborative
 Los Angeles River Revitalization Corporation
 Northeast Trees
 Northeast Los Angeles Riverfront Collaborative (NELA RC)
 Riverglen Apartments
 Silver Lake Chamber of Commerce
 Silver Lake Improvement Association
 Silver Lake Neighborhood Council, Mr. Rusty Miller
 Silver Lake Neighborhood Council, Mr. Scott Crawford
 Silver Lake Neighborhood Council, Ms. Courtney Blackburn
 Silver Lake Neighborhood Council/Echo Park, Mr. Peter Lassen
 Silver Lake Recreation Center
 Silver Lake Reservoirs Conservancy
 Silver Lake Residents Association
 Silver View II Homeowners Association
 The Committee to Save Silver Lake Reservoir
 The River Project

Recreation, Senior, and Youth Centers

Chevy Chase Recreation Center
 Glassell Park Recreation Center
 Glassell Park Youth Center
 Glassell Senior Citizen Center
 Griffith Park Adult Community Center

Libraries

Atwater Village Branch Library
 Echo Park Branch Library
 Edendale Branch Library
 Los Feliz Branch Library
 Silver Lake Branch Library

Schools

Allesandro Elementary School
 Atwater Avenue Elementary School
 Bellevue Primary school
 Clifford Street Elementary School
 Franklin Avenue Elementary School

Glenfeliz Boulevard Elementary School
 Holy Trinity Prep School
 Holy Trinity Academy
 Immaculate Heart High School
 Ivanhoe Elementary School
 John Marshall High School
 Kids' World School
 LACCD Van De Kamp Innovation Center
 Los Feliz Elementary School
 Lycee International De Los Angeles
 Mayberry Street Elementary School
 Micheltorena Street Elementary School
 Our Mother of Good Counsel School
 St. Teresa of Avila School
 St. Francis of Assisi Elementary School
 Thomas Starr King Middle School
 Washington Irving Middle School

7.1.2.4 Businesses and Residents

Adjacent Parcels

<i>Assessor's Parcel No.</i>	<i>Property Address</i>
5434022900	2947 North Hyperion Avenue, Los Angeles, CA 90027
5437037901	Not available
5434023028	3019 Hyperion Avenue, Los Angeles, CA 90027
5434023029	3015 Hyperion Avenue, Los Angeles, CA 90027
5437021003	2992 Glendale Boulevard, Los Angeles, CA 90039
5435027020	3111 Glendale Boulevard, Los Angeles, CA 90039
5437018002	3040 Glendale Boulevard, Los Angeles, CA 90039
5434023032	3001 Hyperion Avenue, Los Angeles, CA 90027
5437021023	2974 Glendale Boulevard, Los Angeles, CA 90039
5435028008	3003 Glendale Boulevard, Los Angeles, CA 90039
5434026046	2998 Hyperion Avenue, Los Angeles, CA 90027
5437018001	3540 Hollydale Drive, Los Angeles, CA 90039
5435028028	2973 North Glendale Boulevard, Los Angeles, CA 90039
5434024017	Not available
5434024018	3041 Waverly Drive, Los Angeles, CA 90039
5435028026	2977 North Glendale Boulevard, Los Angeles, CA 90039
5437021022	2978 North Glendale Boulevard, Los Angeles, CA 90039
5434023027	3023 Hyperion Avenue, Los Angeles, CA 90027
5434026013	3040 Waverly Drive, Los Angeles, CA 90039
5435028037	3047 Glendale Boulevard, Los Angeles, CA 90039
5437018032	3036 Glendale Boulevard, Los Angeles, CA 90039

<i>Assessor's Parcel No.</i>	<i>Property Address</i>
5434024901	Not available
5434026045	2996 Hyperion Avenue, Los Angeles, CA 90027
5434023026	3100 Waverly Drive, Los Angeles, CA 90027
5437018031	3010 Glendale Boulevard, Los Angeles, CA 90039
5434023030	3009 Hyperion Avenue, Los Angeles, CA 90027
5435028017	2985 Glendale Boulevard, Los Angeles, CA 90039
5434017022	3101 Waverly Drive, Los Angeles, CA 90027
5435028030	2965 Glendale Boulevard, Los Angeles, CA 90039
5434026042	3004 Hyperion Avenue, Los Angeles, CA 90027
5437021026	2992 Glendale Boulevard, Los Angeles, CA 90039
5435028027	2975 North Glendale Boulevard, Los Angeles, CA 90039
5435028010	3015 Glendale Boulevard, Los Angeles, CA 90039
5437017025	3068 Glendale Boulevard, Los Angeles, CA 90039
5435028024	2983 North Glendale Boulevard, Los Angeles, CA 90039
5434024026	3044 Riverside Drive, Los Angeles, CA 90039
5434026005	2962 Hyperion Avenue, Los Angeles, CA 90027
5437036902	Not available
5437022021	2960 Glendale Boulevard, Los Angeles, CA 90039
5437017026	3056 Glendale Boulevard, Los Angeles, CA 90039
5434026006	2966 Hyperion Avenue, Los Angeles, CA 90027
5434026047	3000 Hyperion Avenue, Los Angeles, CA 90027
5437021021	2980 Glendale Boulevard, Los Angeles, CA 90039
5435039006	Not available
5437018034	3028 Glendale Boulevard, Los Angeles, CA 90039
5434023031	3005 Hyperion Avenue, Los Angeles, CA 90027
5435028036	2953 Glendale Boulevard, Los Angeles, CA 90039
5435028011	3031 Glendale Boulevard, Los Angeles, CA 90039
5434017029	3100 Riverside Drive, Los Angeles, CA 90027
5434026044	2994 Hyperion Avenue, Los Angeles, CA 90027
5435028029	2973 Glendale Boulevard, Los Angeles, CA 90039
5435027011	3609 Glenfeliz Boulevard, Los Angeles, CA 90039
5435039003	2960 Glenmanor Place, Los Angeles, CA 90039
5437017020	3060 Glendale Boulevard, Los Angeles, CA 90039
5435028025	2979 North Glendale Boulevard, Los Angeles, CA 90039
5437021004	2982 Glendale Boulevard, Los Angeles, CA 90039
5434040014	3061 Riverside Drive, Los Angeles, CA 90039
5435028031	2961 Glendale Boulevard, Los Angeles, CA 90039
5435028009	3007 North Glendale Boulevard, Los Angeles, CA 90039
5434026043	3006 Hyperion Avenue, Los Angeles, CA 90027
5435039903	Not available
5437021024	2972 Glendale Boulevard, Los Angeles, CA 90039

<i>Assessor's Parcel No.</i>	<i>Property Address</i>
5434026026	3012 Hyperion Avenue, Los Angeles, CA 90027
5437018005	3032 Glendale Boulevard, Los Angeles, CA 90039
5437022022	Not available
5437018028	3020 Glendale Boulevard, Los Angeles, CA 90039
5437008025	3140 Glendale Boulevard, Los Angeles, CA 90039
5437018033	3028 Glendale Boulevard, Los Angeles, CA 90039
5434026041	3002 Hyperion Avenue, Los Angeles, CA 90027
5437021025	3531 Ferncroft Road, Los Angeles, CA 90039