North Spring Street Viaduct Widening and Rehabilitation Project

Los Angeles County, California
State Clearinghouse No. 2006091076
California Department of Transportation District 7 – Bridge No. 53C-0859
EA 931701
BHLS 5006(219)
STPL 5006(563)

Final Environmental Impact Report/ Environmental Assessment and Section 4(f) Evaluation

Prepared by

City of Los Angeles

and

State of California Department of Transportation

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.

May 2010

GENERAL INFORMATION ABOUT THIS DOCUMENT

What's in this document:

The City of Los Angeles, as the lead agency for compliance with the California Environmental Quality Act (CEQA), and the California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), in compliance with the National Environmental Policy Act (NEPA), have prepared this Final Environmental Impact Report/Environmental Assessment (EIR/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed project, located in the City of Los Angeles (City), California. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, potential impacts from each of the alternatives, and the proposed avoidance, minimization and/or mitigation measures for those impacts.

Written comments on the Draft EIR/EA were invited and received. Written comments provided by individuals and public agencies have been evaluated, and written responses have been prepared for comments received during the designated 45-day comment period. Comments on the Draft EIR/EA are published in this Final EIR/EA and written responses to each substantial comment are provided in Chapter 10, Responses to Comments. Where appropriate, non-substantial changes have been made to the Draft EIR/EA in the sections noted in the Responses to Comments and are shown in underline.

These corrections and additions are provided to clarify, refine, and provide supplemental information to that provided in the Draft EIR/EA. Changes may be corrections or clarifications to the text of the Draft EIR/EA. Other changes to the Draft EIR/EA text clarify the analysis in the Draft EIR/EA based upon the information and concerns raised by persons during the public comment period.

Where to obtain the Final EIR/EA:

- The Final EIR/EA is available for review at the following locations:
- Lincoln Heights Branch Library, 2530 Workman Street, Los Angeles, CA 90031
- Chinatown Branch Library, 639 N. Hill Street, Los Angeles, CA 90012
- Council District 1 Information Desk, 200 North Spring Street, Room 410, Los Angeles, CA, 90012; and Lincoln Heights Field Office, 163 South Avenue 24, Room 202, Los Angeles, CA 90031
- City of Los Angeles Department of Public Works Bureau of Engineering, Bridge Improvement Group, 221 North Figueroa Street, Suite 350, Los Angeles, CA 90012
- City of Los Angeles Bureau of Engineering website:
  http://eng.lacity.org/techdocs/emg/north_spring_street.htm

For individuals with sensory disabilities, this document can be made available in Braille, large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to the Department of Transportation, Attn: Tami Saghafi, Environmental Planning, 100 South Main Street, Los Angeles, CA 90012; (213) 897-3656; or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735, 2929 (Voice), or 711.

SCH#2006091076

EA 931701

BHLS 5006(219)

STPL 5006(563)

NORTH SPRING STREET VIADUCT WIDENING & REHABILITATION PROJECT

FINAL ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL ASSESSMENT and Section 4(f) Evaluation

Prepared Pursuant to: Division 13, California Public Resources Code,
42 USC 4332(2)(C,) 49 U.S.C. 303, AND 23 U.S.C. 327

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

City of Los Angeles (Local Lead Agency)
and
STATE OF CALIFORNIA
Department of Transportation (Federal Lead Agency)

May 13, 2010
Date

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

May 17, 2010
Date

Ronald Kosinski
Ronald Kosinski, Deputy District Director
Division of Environmental Planning
California Department of Transportation

SUMMARY

Overview of the Project Area

The City of Los Angeles (City), in cooperation with the California Department of Transportation (Caltrans), proposes improvements and rehabilitation to the existing North Spring Street Viaduct (Viaduct) and its adjoining roadways.

The proposed project area is situated northeast of downtown Los Angeles in an area that includes residential, commercial, industrial and open space (park) land uses. The proposed project area straddles portions of the Central City North and Northeast Los Angeles Community Planning areas. Regional transportation facilities in the area include Interstate 110 (I-110), Interstate 5 (I-5), and State Route 101 (SR-101).

Other projects in close proximity to the proposed project area include the Los Angeles State Historic Park[1], Cornfield Arroyo Seco Specific Plan[2], Albion Park Project[3], California High Speed Rail Project[4], Los Angeles River Revitalization Project[5].

Purpose and Need

The purpose of the proposed project is to:

- Eliminate existing and geometrical design deficiencies associated with the Viaduct and its adjoining approach roadways;
- Correct existing seismic vulnerability issues specific to the viaduct; and
- Create and improve pedestrian and bicycle travel through the proposed project's study area and connections with regional bicycle routes and mass-transit facilities.

Correcting existing geometrical and design deficiencies and addressing seismic vulnerability issues would achieve the City's goal of removing the North Spring Street Viaduct from the Highway Bridge Program (HBP) Eligible Bridge List (EBL). The North Spring Street Viaduct was placed on the EBL as the result of an inspection of the North Spring Street Viaduct conducted by both the City and Caltrans in July 2000 using FHWA's bridge inspection criteria, that determined the Viaduct to have a sufficiency rating (SR) of 74.2. Bridges returning SRs lower than 80.0 are eligible for placement on the Highway Bridge Program (HBP) Eligible

[1] Information available at: http://www.parks.ca.gov/default.asp?page_id=22272
[2] Information available at: http://sites.google.com/site/cornfieldsla/index
[3] Information available at: http://www.albionparkproject.com/Albionpark/Update.html
[4] Information available at: http://www.cahighspeedrail.ca.gov/
[5] Information available at: http://www.lariver.org/#

Bridge List (EBL) for federal funding assistance. Specific Viaduct deficiencies include the following:

- Inadequate lane width;
- Lack of shoulders;
- Loose cable restrainers; and
- Inadeqate vertical railroad clearance.

Related roadway and street deficiencies include:

- Deterioration of pavement and sidewalks on Aurora Street;
- Comprised sight line issues at Aurora Street and North Spring Street intersection; and
- Unsafe merge of Baker Street outlet to North Spring Street.

Implementation of the proposed project would resolve related roadway, street, and Viaduct deficiencies, except the issue of vertical clearance over the railroad. The proposed project would also improve connection with regional bicycle routes and mass-transit facilities. (refer to Section 2.5.2.5 for information regarding bicycle routes nearest the proposed project), create a new outlet from Baker Street to North Spring Street, and close the existing non-standard outlet of Baker Street to North Spring Street.

Proposed Action and Proposed Project

The proposed federal action is for Caltrans, in cooperation with the City of Los Angeles, to undertake a construction project designed to correct the deficiencies outlined above. The proposed project for the City of Los Angeles is to support this action, which would:

- Widen the existing 50-foot-wide viaduct by approximately 20 feet on each side, resulting in a 90-foot-wide by 700-foot-long viaduct extending northeasterly from Aurora Street on the southwest to approximately 500 feet southwest of Avenue 18 on the northeast;
- Install a striped bicycle lane on each (north/south) side of the Viaduct;
- Provide wider sidewalks on both sides of the Viaduct;
- Structurally retrofit the existing Viaduct to meet current seismic standards;
- Repair approach roadways to address pavement cracking and differential settlement issues at the Viaduct;
- Provide improved Viaduct railings and approach and transition guardrails to restore, to the extent feasible, the architectural character and appearance of the original structure;
- Create a variable-width (10-foot maximum) striped median on the Viaduct from approximately 90 feet west of the Viaduct to a point approximately 700 feet west of the intersection of North Spring Street and Avenue 18;

- Close the existing unsafe intersection of Aurora Street and North Spring Street;
- Eliminate the existing unsafe triangular merge of Baker Street into North Spring Street; and
- Extend Wilhardt Street northernly through a new intersection with North Spring Street to the realigned Baker Street.

The proposed project would also provide a pedestrian walkway connecting the northern portion of the Downey Recreation Center with its southern portion.

Project Alternatives

The proposed project includes improvements for both the Viaduct structure and its connecting roadways. The general public and interested regulatory and permitting agencies were afforded opportunities to provide input on the development and selection of alternatives through the scoping process. Several project component (viaduct and roadway) strategies were screened to assemble the most appropriate compilations into alternative project configurations. Based on the results of the screening, four "build" alternatives (Alternatives 1, 2, 3, and 4) were selected. Together with the No-Build Alternative, they were carried forward for full environmental impact assessment. The four build alternatives are:

1. Build Alternative 1 – Seismic-Retrofit Only
2. Build Alternative 2 – Widened Viaduct – Skewed Wilhardt Street Extension
3. Build Alternative 3 – Widened Viaduct – Tangential Wilhardt Street Extension
4. Build Alternative 4 – Widened Viaduct – Baker Street/Mesnager Street Extension

Build Alternative 1

Build Alternative 1 consists of seismic retrofit construction only. This would not change the outside shape of the existing structure or dramatically reconfigure the Viaduct's existing piers in the Los Angeles River; however, since engineering plans have not been finalized, changes to the Viaduct's historical features may still occur. The proposed retrofit work would eliminate potential structural collapse that could occur under a designated seismic event. The construction period for this alternative is expected to require approximately 12 months.

Build Alternatives 2, 3, and 4

Build Alternatives 2, 3, and 4 (which all involve Viaduct widening, and which all include the same seismic retrofit activities as Build Alternative 1) would be constructed in two Phases. Phase 1 would include closure of Aurora Street at the existing intersection with North Spring Street and closure of north and south marginal roads adjacent to the Viaduct northeast of Aurora Street. Phase 2 would involve reconfiguration of the Baker Street outlet to North Spring Street. Under Build Alternative 2, Wilhardt Street would be extended north on a skew through a new intersection with North Spring Street to Baker Street; Baker Street would be striped at this

intersection. Under Build Alternative 3, Wilhardt Street would be extended north on a direct tangent in a traditional "T" intersection through a new intersection with North Spring Street to Baker Street; Baker Street would be permanently closed. Under Build Alternative 4, Baker Street would be extended through the Los Angeles State Historic Park to connect to Mesnager Street at its current intersection with North Spring Street. Construction of Phase1 and Phase 2 is expected to occur sequentially with about 12 months needed for each phase.

Although analyses relating to Build Alternative 4 are provided in this EIR/EA, this alternative has since been dropped from further consideration due to its severe and unavoidable impacts to the Los Angeles State Historic Park.

Joint CEQA/NEPA Document

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 the project requires FHWA approval. Therefore, this joint Environmental Impact Report (EIR)/Environmental Assessment (EA) has been prepared to comply with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The City 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 applicable federal laws for this project is being, or has been, carried out by the California Department of Transporation (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 of the USDOT Secretary's responsibilities under NEPA. The assignment applies to all projects on the State Highway System (SHS) and all Local Assistance Projects off the SHS within the State of California with the exception of the responsibilities concerning certain categorical exclusions. Refer to Chapter 38 of the Caltrans Standanrd Environmental Reference (SER) for more information.

Environmental effects expected from the project are summarized in Table S-1. The significance of these impacts under CEQA is discussed in Chapter 3 California Environmental Quality Act Evaluation. Impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA since different criteria apply to these two acts. Measures proposed to avoid, minimize, and mitigate these impacts are listed in Table S-2. Mitigation measures under the California Environmental Quality Act are marked with a prefix "MM" in Table S-2 and minimization measures under the National Environmental Policy Act are marked with a "•".

Following receipt of public and agency comments on the Draft EIR/EA and circulation of the Final EIR/EA, which provides responses to those comments, the lead agencies will take actions regarding the environmental document and the proposed project. The City will determine

whether to certify the adequacy and accuracy of the EIR and whether to approve the proposed project, and Caltrans will decide whether to issue a Finding of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS).

Areas of Known Controversy

Under all build alternatives for this project, the proposed undertaking would have an adverse effect on the North Spring Street Viaduct by removal of historic material sufficient to compromise its eligibility for listing by the National Register of Historic Places, the California Register of Historic Resources, and as a designated Los Angeles Historic Cultural Monument (HCM #900).

Other areas of controversy that have been brought forward by members of the community include the potential displacement and relocation of industrial buildings and businesses; potential demolition of the City of Los Angeles Historical Cultural Monument (HCM) No. 872 Raphael Junction Block Building; and partial acquisition of the Los Angeles State Historic Park. Issues relating to HCM No. 872 would be resolved by implementation of Build Alternative 2. Issues relating to the Los Angeles State Historic Park have been resolved by discontinuing consideration of Build Alternative 4.

Issues to be Resolved

There are various issues regarding the proposed project that need to be resolved by the decision-making body. These include:

- Potential displacement and relocation of nonresidential businesses;
- Potential temporary displacement of community service organizations (i.e., The Metabolic Studio, Farmlab, Under Spring);
- Temporary impacts to utility lines located next to and on the project site, including water, natural gas, electricity, telephone, and cable television lines;
- Impacts to Wilhardt Street which would require extension/reconfiguration of this street;
- Temporary construction noise/air-quality impacts to surrounding communities from Viaduct widening and rehabilitation activities; and
- Impacts from removal of street trees on both sides of the Viaduct.

Measures have been proposed to minimize the effects of these activities and impacts.

This page intentionally left blank.

Table S-1 Summary of Environmental Effects†

Environmental Factor	Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build Alternative
Land Use	**Consistency with Applicable Plans and Policies**	No impacts.	General Plan designation for one parcel that would be acquired conflict with proposed uses. A General Plan Amendment and zoning change would be required.	General Plan designation for two parcels that would be acquired conflict with proposed uses. A General Plan Amendment and zoning change would be required.	The extension of Baker Street through the Los Angeles State Historic Park would conflict with applicable plans and policies.	No impacts.
	Right-of-Way Reclamation and Acquisition	No impacts	Acquisition of one parcel.	Acquisition of two parcels.	Acquisition of a portion of the Los Angeles State Historic Park.	No impacts.
	Park and Recreation	No impacts.	Temporary, slight noise impacts to Downey Recreation Center during construction.		Loss of a portion of the Los Angeles State Historic Park.	No impacts.
			Slight loss of open space and loss of a small portion of the Downey Recreation Center. Loss of trees, landscaping, and retaining walls.			No impacts.
Community Impacts	**Community Character and Cohesion**	Not A Cornfield, Under Spring, and Farmlab would be displaced temporarily during construction.				No impacts.
		Continued adverse impacts due to lack of path under the Viaduct to connect the northern and southern portions of the Downey Recreation Center.	Beneficial impacts by constructing an improved path under the Viaduct to connect the northern and southern portions of the Downey Recreation Center, and enhancing bicycle and pedestrian linkages to adjoining communities.			Continued adverse impacts due to lack of path under the Viaduct to connect the northern and southern portions of the Downey Recreation Center.
	Relocations	No impacts.	Displacement/ relocation of one business.	Displacement/ relocation of 2 businesses.	No impacts.	No impacts.
	Environmental Justice	No impacts.				No impacts.

Table S-1 Summary of Environmental Effects†

Environmental Factor	Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build Alternative
Utilities and Emergency Services	**Utilities**	No impacts.				
	Emergency Services	No impacts.	Law enforcement and fire protection emergency response services would benefit from improved operational paths through the study area provided by widened curb lanes, a median lane, and extension of Wilhardt Street through North Spring Street to Baker Street.			No impacts.
Traffic and Transportation	**Roadway Traffic Level of Service (LOS)**	Continued adverse impacts due to deterioration in Level of Service; operational deficiencies and traffic safety issues at the Viaduct and the surrounding roadways not addressed.	Minor to moderate temporary traffic delays during construction. After construction is complete, no adverse impacts. Beneficial impacts due to overall improvement in the LOS and flow of traffic and traffic safety at the Viaduct and the surrounding roadways.			Deterioration in Level of Service; operational deficiencies and traffic safety issues at the Viaduct and the surrounding roadways not addressed.
	Parking	No impacts.	Permanent loss of approximately 10 on-street public parking spaces.			No impacts.
	Bicycle and Pedestrian Facilities	No impacts.	Beneficial impacts due to enhanced bicycle and pedestrian facilities; improvement in safety for bicyclists and pedestrians. Temporary construction impacts could occur by disruption to pedestrian access to walkway on bridge.			No impacts.
Visual/Aesthetics	**Aesthetics and Views**	Many project features of Viaduct viewable from key views would be slightly altered.				No impacts.
		No impacts.	Trees and landscaping would be replaced.			No impacts.
	Nighttime Illumination	No impacts.	No impacts.		Street lighting along Baker Street would have moderate to high impacts on lighting levels at Los Angeles State Historic Park.	No impacts.
	Construction Impacts	Temporary aesthetic impacts may occur during construction; however, it is anticipated that the visual character and quality of the site and surroundings would remain consistent with existing viewsheds overall.				No impacts.

Table S-1 Summary of Environmental Effects†

Environmental Factor	Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build Alternative
Cultural Resources	Historical Resources	No impacts.		Adverse impacts to HCM No. 872 Raphael Junction Block Building.	No impacts.	No impacts.
		Adverse impacts to North Spring Street Viaduct HCM No. 900.				
	Archaeological Resources	No impacts.			Likely to impact previously undiscovered archaeological sites. Potential impact to HCM No. 82 Los Angeles State Historic State Park.	No impacts.
Hydrology, Floodplain, and Water Quality	Drainage	No impacts.	Small increase in impervious area. As most of the area impacted by the widening of the Viaduct is already impervious (except area reclaimed from the Downey Recreation Center), Build Alternatives 2 and 3 would not result in a substantial overall change in the amount of impervious surface area.		Increase in impervious surface area with the extension of Baker Street through the Los Angeles State Historic Park. However, the existing drainage system would be maintained with some minor modifications to storm drain inlets and catch basins, and is expected to adequately convey additional runoff from the widened Viaduct, as well as the Baker Street and Wilhardt Street extensions.	No impacts.
	Pollutant Control	No impacts.				No impacts.
	Trash Increase	No impacts.	Additional pedestrian and cyclist traffic on the Viaduct could result in a minor increase in trash released into the Los Angeles River. Trash receptacles along the pedestrian walkway would reduce littering.			No impacts.
	~~100-year Flood~~	~~A small portion of the build alternatives is located in the 100-year floodplain; however, current~~				~~No impacts.~~

Table S-1 Summary of Environmental Effects†

Environmental Factor	Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build Alternative
	Area Hazard	drainage patterns would be maintained.				
	Construction	Work within and near the Los Angeles River could increase the potential for transport of pollutants to the river.				No impacts.
Geology/Soils/Seismic		The Viaduct could be impacted by ground motion, liquefaction, and differential seismic settlement.				
Hazardous Waste/Materials		No impacts.	Lead-based paint and asbestos-containing materials may be encountered in structures demolition or street/municipal markings. Recognized Environmental Conditions associated with the project area may be present in several locations. Accidental spills during on-site fueling of construction equipment or upset conditions could result in a release of fuels or oils. However, storage of large quantities of these materials at the construction sites is not anticipated.		In addition to impacts under Build Alternative 2 and 3, construction at the Los Angeles State Historic Park may encounter residual contaminants in the soil and groundwater resulting from the long-term use as a rail yard. The site is not presently listed on the State's Cortese List (Government Code Section 65962.5), but is listed on the Spills, Leaks, Investigations, and Cleanup (SLIC) site, Voluntary Cleanup Program (VCP) site, and an EnviroStor site (a state and federal database).	No impacts.
Air Quality		Construction activities could result in emissions of asbestos containing material, lead based paint, fugitive dust, particulates (PM_{10} and $PM_{2.5}$), and other pollutants. However, these impacts would be short-tern due to the temporary nature of the construction activities.				No impacts.
Noise and Vibration		Traffic noise would not exceed Caltrans' criteria for substantial noise increases at any of the 12 locations studied. However, five of the 12 representative modeled receivers would exceed Caltrans/Federal Highway Administration Noise Abatement Criteria for Activity Category B (picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals) land uses without abatement. Noise impacts from construction would be short-term due to the linear nature of the project.				No impacts.

Table S-1 Summary of Environmental Effects†

Environmental Factor	Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build Alternative
Biological Resources		No impacts.	Some street trees on both sides of North Spring Street would be removed at the northeast end of the project area.			No impacts.
Section 4(f) Resources		Adverse impacts to the North Spring Street Viaduct.	Adverse impacts to the North Spring Street Viaduct and the Downey Recreation Center.		Adverse impacts to the North Spring Street Viaduct, Downey Recreation Center, and the Los Angeles State Historic Park.	No impacts.

† Impacts listed in this table that are considered significant under CEQA are discussed in Chapter 3.

This page intentionally left blank.

Table S-2 Summary of Avoidance, Minimization, and Mitigation Measures*				
Environmental Factor	**Build Alternative 1**	**Build Alternative 2**	**Build Alternative 3**	**Build Alternative 4**
Land Use	No mitigation required.	• Trees and landscaping removed to accommodate the proposed Viaduct widening would be replaced in accordance with City of Los Angeles guidelines.		
Community Impacts	No mitigation required.			
Utilities and Emergency Services	No mitigation required.			
Traffic and Transportation	**MM TRA-1**: Prior to construction, the contractor shall prepare a construction staging plan that shall ensure that a walkway on either the north or south side of the viaduct shall be open to pedestrians at all times.			
Visual/Aesthetics	No mitigation required.	**MM AES-1**: Historic features or character-defining features (as defined by the historic resource evaluation) removed as a result of the street-and viaduct-widening project shall be replaced with like features. **MM AES-2**: Existing trees and/or landscaping that are to be removed shall be replaced with similar plantings and/or landscaping, as agreed upon by the City's Street Services Bureau, Street Tree Division, in conjunction with Recreation and Park Architecture.		
				MM AES-3: Baker Street extension roadway design shall shield and direct street lighting downward to prevent off-roadway illumination. Lighting shall be minimum required to ensure safe visibility.
Historical Resources	• The following shall be completed in accordance with the January 1, 2004, Programmatic Agreement Among the Federal Highway Administration (FHWA), the Advisory Council on Historic Preservation (ACHP), the California State Historic Preservation Officer (SHPO) and the California Department of Transportation (Caltrans) regarding compliance with Section 106 of the National Historic Preservation Act, as it pertains to the Administration of the Federal-Aid Highway Program in California , and in accordance with the MOA to be prepared between SHPO, Caltrans, and FHWA: Prior to any Viaduct construction activities, the City shall contact the National Park Service (NPS) Historic American Buildings Survey (HABS)/HAER program to determine if additional recordation is required for the North Spring Street Viaduct beyond that provided in 1996. Unless otherwise agreed to by the NPS HABS/HAER, the City shall ensure that all documentation is completed and accepted by HABS/HAER before the Viaduct is altered. All measures will be undertaken to the satisfaction of SHPO to reduce potential effects of the proposed project.			
			MM HIS-1: The City shall consult with Caltrans to	

Table S-2 Summary of Avoidance, Minimization, and Mitigation Measures*				
Environmental Factor	**Build Alternative 1**	**Build Alternative 2**	**Build Alternative 3**	**Build Alternative 4**
			undertake documentation of the HCM No. 872, Raphael Junction Block building to HABS/HAER standards prior to demolition of the structure.	
Archaeological Resources	No mitigation required.			**MM ARC-1**: The City shall arrange for a qualified professional archaeological monitor to be present during demolition, grading, trenching, and other excavation on the project site. In addition, all construction personnel shall be informed of the need to stop work on the project site in the event of a potential find(s), until a qualified archaeologist has been provided the opportunity to assess the significance of the find(s) and implement appropriate mitigation measures to protect or scientifically remove the find(s). Construction personnel would also be informed that unauthorized collection of cultural resources is prohibited. **MM ARC-2**: A cultural resource brochure or fact sheet would be provided and available to all construction crew members detailing the necessary procedures for the discovery of archaeological resources within the project site.
Hydrology, Floodplain, and Water Quality	• The proposed project would comply with the City of Los Angeles MS4 Permit, the General Construction Permit and the LARWQCB Dewatering Permit. Compliance with these permits should mitigate potential impacts to water quality. During the project's preliminary design phase, specific construction and post-construction BMPs would be selected to meet permit requirements.			

Table S-2 Summary of Avoidance, Minimization, and Mitigation Measures*

Environmental Factor	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Geology/Soils/Seismic	• The Viaduct design for the widening would be developed in accordance with City of Los Angeles and Caltrans Bridge specifications.			
Hazardous Waste/ Materials	**MM HAZ-1:** The contractor shall conduct a pre-construction survey of the proposed project sites and locations for the presence of actionable levels of hazardous materials and, if found, shall minimize potential effects on the public by implementing established regulatory procedures. **MM HAZ-2:** Prior to renovation, demolition, or any other activity that might cause a disturbance of any suspect lead-based paint, the contractor shall conduct sampling to determine lead content. If paint containing lead chromate is encountered, it shall be collected and disposed of, as necessary, in accordance with all applicable worker protection and hazardous materials management regulations. If hazardous materials (e.g., petroleum hydrocarbon-contaminated soils) or other regulated substances (e.g., pesticides or herbicides) are identified in the soil during construction, work shall cease at that location and soil containing such substances shall be collected, tested, and disposed of in accordance with applicable state and federal regulations. **MM HAZ-3:** Any affected lead-based roadway pavement markings shall be collected, tested, and disposed of according to applicable State and Federal regulations. If paint containing lead chromate is encountered, it shall be collected and disposed of in accordance with all applicable worker protection and hazardous materials management regulations. **MM HAZ-4:** Prior to construction, the contractor shall inspect the structures to be demolished and confirm presence of asbestos-containing materials. The contractor shall prepare an asbestos abatement and worker protection plan to be implemented prior to and during demolition of structures where the presence of asbestos has been confirmed. All asbestos-containing materials shall be removed and disposed of by a state-licensed abatement contractor in accordance with applicable state and federal laws.			
Air Quality	No mitigation required.	To reduce emissions of ACMs and LBP, prior to any partial or full demolition of any structure or building, the contractor shall conduct an investigation to determine the existence of ACMs and LBP. A licensed asbestos abatement contractor shall remove all friable asbestos using approved abatement methods. In addition, the licensed asbestos abatement contractor shall be responsible for compliance of all asbestos-related regulations of SCAQMD, in particular Rule 1403, Asbestos Emissions from Demolition/Renovation Activities. ACMs shall be disposed of properly at permitted landfills. Similar action items for any LBP identified during demolition activities. To reduce emissions of fugitive dust, the contractor would comply with regional rules, which would assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures (BACMs) so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 402 prohibits dust from creating a nuisance off site. To reduce exhaust emissions from PM10 and PM2.5 emissions generated by construction equipment, the contractor would implement improvement plans and specifications that may include the following measures when feasible: • The construction contractor shall comply with Caltrans' Standard Specifications Section 7-1.01F and Section 10 of Caltrans' Standard Specifications (1999). Section 7, "Legal Relations and Responsibility," addresses the contractor's responsibility on many items of concern, such as: air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; convenience of the public; and damage or injury to any person or property as a result of any construction operation. Section 10 is directed at controlling dust.		

Table S-2 Summary of Avoidance, Minimization, and Mitigation Measures*				
Environmental Factor	**Build Alternative 1**	**Build Alternative 2**	**Build Alternative 3**	**Build Alternative 4**
		• Use low-emission mobile construction equipment (i.e., Tier 1, 2, or 3 emission standards). • Maintain construction equipment engines by keeping them tuned to manufacturer's specifications. • Use low-sulfur fuel for stationary construction equipment. This is required by SCAQMD Rules 431.1 and 431.2. • Utilize existing power sources (i.e., power poles) when feasible. This measure would minimize the use of higher-polluting gas or diesel generators. • Configure construction parking to minimize traffic interference. • Minimize obstruction of through-traffic lanes. When feasible, construction should be planned so that lane closures on existing streets are kept to a minimum. • Schedule construction operations affecting traffic for off-peak hours; • Develop a Traffic Management Plan (TMP) to minimize traffic flow interference from construction activities; (the plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service). (See discussions of TMP in Section 3.5, Traffic, Transportation, and Pedestrian Facilities of this Final EA/EIR.). • Develop a "Diesel Fuel Reduction Plan" that identifies the actions to be taken to reduce diesel fuel emissions during construction activities (inclusive of grading and excavation activities). Reductions in diesel fuel emissions can be achieved by measures including, but not limited to, the following: a) use of alternative energy sources, such as compressed natural gas or liquefied petroleum gas, in mobile equipment and vehicles; b) use of "retrofit technology," including diesel particulate traps on existing diesel engines and vehicles; c) limit idling time to less than five minutes unless warranted; and d) other appropriate measures. Prior to the issuance of a grading permit, the Diesel Fuel Reduction Plan shall be filed with the City.		
Noise and Vibration	• Hold community meetings to explain to area residents the construction work, time involved, and control measures to be taken to reduce the impact of the construction work. • Limit noisy construction activities to between 7:00 am and 7:00 pm by scheduling the timing and duration of construction activities to minimize noise impacts at noise-sensitive locations • As practicable, use noise-attenuating "jackets" or portable noise screens to provide shielding for pavement breaking, jack-hammering or other similar activities when work is close to noise-sensitive areas.			
Biological Resources	No mitigation required.	• Replace all street trees to be removed. Types of trees and planting locations would be reviewed and approved by the City's Bureau of Street Services Street Tree Division. • Conduct a preconstruction survey for nesting cliff swallows and roosting bats. If the birds are found, employ methods to prevent the establishment of nests prior to the commencement of construction activities. If swallows or bats are found, the CDFG biologist would be consulted on how to relocate them to avoid any construction impacts.		

** Mitigation measures under the California Environmental Quality Act are marked with a prefix "MM" in the table above and minimizations measures under the National Environmental Policy Act are marked with a "•"*