

Summary

Proposed Action

The City of Los Angeles (City) and the California Department of Transportation (Caltrans) propose to undertake the seismic improvement of the 6th Street Viaduct over the Los Angeles River (Bridge No. 53C-1880) and the 6th Street Overcrossing, which spans the US 101 Hollywood Freeway (Bridge No. 53-0595). These two bridges comprise a single structure – the 6th Street Viaduct. The proposed project would correct seismic deficiencies of this critical Los Angeles River crossing by either retrofitting the existing structure or replacing the 6th Street Viaduct entirely. Under the replacement alternative, the proposed project would also correct geometric design and structural detailing deficiencies of the existing viaduct by constructing the replacement to current standards set forth by American Association of State Highway and Transportation officials (AASHTO) and the City of Los Angeles Department of Transportation (LADOT).

The proposed project is subject to federal, as well as City and state environmental review requirements because the City proposes the use of federal funds managed by the Federal Highway Administration (FHWA). Therefore, the project requires an FHWA approval action. Environmental documentation has been prepared in compliance with both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (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 carried out by Caltrans under its assumption of responsibility pursuant to Section 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) codified at 23 United States Code (U.S.C.) 327(a)(2)(A).

Alternatives Considered

Three alternatives are being analyzed in this Environmental Impact Report/Environmental Impact Statement (EIR/EIS) as follows:

Alternative 1 – No Action

This alternative provides neither retrofit nor replacement of the seismically and functionally deficient 6th Street Viaduct. The Alkali Silica Reaction (ASR) deterioration of the structure would continue, and the seismic vulnerabilities would worsen as the concrete strength continues to degrade. The City would continue to provide ongoing inspection and maintenance on the viaduct to keep it open to traffic as long as possible, given the ongoing ASR deterioration and

seismic vulnerabilities. Furthermore, the 6th Street Viaduct would remain at its existing roadway width of 46 feet (ft), which accommodates 2 travel lanes in each direction with no outside shoulders or safety median. The substandard shoulder and sidewalk widths and unsafe railings would also not be corrected under this alternative.

Alternative 2 – Viaduct Retrofit

This alternative would seismically retrofit the viaduct's columns by encasing them with heavy steel, and infill walls would be constructed between selected columns. In addition, new foundations, grade beams, retrofitting of bent caps, and closure of some expansion joints in the superstructure would be constructed in combination with the column retrofits. The structure would be retrofitted to the minimal standard of “no collapse” for the design seismic event. Based on the cost estimates of \$226 million, Alternative 2 is a fully funded alternative¹.

Alternative 3 – Viaduct Replacement

This alternative is comprised of two elements: bridge type, designated by numeric labels; and alignment, designated by alpha labels. The replacement alternative would construct a new viaduct along one of three alignments under consideration. The main-span bridge type would be selected from one of five type alternatives under study, including (1) Replication; (2) Cast-in-Place (CIP) Box Girder with Steel Tied Arch Pedestrian Ways; (3) Steel Half-Through Arch with CIP Box Girder Approaches; (4) Extradosed (cable-supported) Concrete Box Girder with Dual Pylons; and (5) Extradosed Concrete Box Girder with Single Pylon. The new structure would have a cross section that meets secondary highway standards as required by LADOT. The new 70-ft-wide (curb-to-curb) roadway would consist of two 11-ft-wide lanes with an 8-ft-wide shoulder in each direction, and a 10-ft-wide median. The proposed cross section also allows for 10-ft-wide sidewalks. Based on the cost estimates from a low of \$304 million to a high of \$402 million, Alternative 3 variations are not fully funded². Sources or mechanisms of additional funds are being identified. Potential funding sources include Highway Bridge Program (HBP) funds, Proposition 1B Local Bridge Seismic Retrofit Account (LBSRA), and City Matching Funds.

Environmental Impacts

Environmental impacts associated with the two Build Alternatives and the No Action Alternative were fully analyzed, and the results are summarized in Table ES-1.

¹ The 6th Street Viaduct Seismic Improvement Project is included in the 2008 Regional Transportation Improvement Program (RTIP), which is programmed for \$245 million over a 6-year period (Fiscal Years 2008/9 to 2013/14).

² Ibid.

**Table ES-1
Summary of Potential Impacts from Alternatives**

Area of Impact	Alternative 1 No Action	Alternative 2 Retrofit	Alternative 3 Replacement Alignment 3A	Alternative 3 Replacement Alignment 3B	Alternative 3 Replacement Alignment 3C
Land Use and Planning	None	<ul style="list-style-type: none"> City of Los Angeles Maintenance Facility and one privately owned business would need to be relocated. These right-of-way (ROW) displacements would be inconsistent with the City of Los Angeles Community Plan objective of preserving the industrial area and employment. Would not provide the City with an opportunity to designate 6th Street along the 6th Street Viaduct as a bikeway. Would provide less redevelopment opportunity for the area in the immediate vicinity of the viaduct. Would provide a seismically safe bridge, with a 30-year design life, between Boyle Heights and Downtown Los Angeles to support the objectives of various adopted plans and policies. 	<ul style="list-style-type: none"> Several industrial buildings in the designated “industrial preservation and employment protection zone” would be acquired for ROW. The proposed action would be inconsistent with the Community Plan. Would have a bikeway and standard sidewalk on both sides of the viaduct. Would provide a seismically safe bridge, with a 75-year design life, between Boyle Heights and Downtown Los Angeles to support the objectives of various adopted plans and policies. Would provide redevelopment opportunities for the vacated area in the immediate vicinity of the viaduct. 	<ul style="list-style-type: none"> Would have greater ROW impacts compared to Alignment 3A. Inconsistent with industrial preservation objective. Would provide more vacated land around the 6th Street Viaduct for redevelopment opportunities compared to Alignment 3A. Would have a bikeway and standard sidewalk on both sides of the viaduct. Would provide a seismically safe link, with a 75-year design life, between Boyle Heights and Downtown Los Angeles to support the objectives of various adopted plans and policies. Would provide redevelopment opportunities for the vacated area in the immediate vicinity of the viaduct. 	<ul style="list-style-type: none"> Would have less ROW impacts compared to Alignment 3A. Inconsistent with industrial preservation objective. Would provide less vacated land around the 6th Street Viaduct for redevelopment opportunities compared to Alignment 3A. Would have a bikeway and standard sidewalk on both sides of the viaduct. Would provide a seismically safe bridge, with a 75-year design life, between Boyle Heights and Downtown Los Angeles to support the objectives of various adopted plans and policies. Would provide redevelopment opportunities for the vacated area in the immediate vicinity of the viaduct.
Community Impacts: Community Character and Cohesion	None	<ul style="list-style-type: none"> Community disconnection could occur on a temporary basis during construction. 	<ul style="list-style-type: none"> Community disconnection could occur on a long-term (4-year) basis during construction. Loss of historic resource and community landmark to which many residents are attached. 	Same as Alignment 3A.	Same as Alignment 3A.

**Table ES-1
Summary of Potential Impacts from Alternatives**

Area of Impact	Alternative 1 No Action	Alternative 2 Retrofit	Alternative 3 Replacement Alignment 3A	Alternative 3 Replacement Alignment 3B	Alternative 3 Replacement Alignment 3C
Community Impacts: Relocation and Business Disruption	None	<ul style="list-style-type: none"> • Construction would require a partial lane closure on the 6th Street Viaduct. Temporary blockage of roadways would occur during construction due to the required partial traffic lane closure and construction equipment movement. • A City of Los Angeles Maintenance Facility and one privately owned business would need to be relocated. • Minimal employment impacts. 	<ul style="list-style-type: none"> • The viaduct and all acquired buildings would be first removed. Roadway blockage to the remaining businesses would temporarily occur during the demolition and construction activities. • A City Maintenance Office would need to be relocated, and up to 11 businesses (33 parcels) would be either partially or fully impacted by ROW acquisition. • Potential job loss affecting approximately 200 employees due to business relocation. (Actual job loss cannot be accurately estimated at this stage of the project.) 	<ul style="list-style-type: none"> • The viaduct and all acquired buildings would be first removed. Roadway blockage to the remaining businesses would temporarily occur during the demolition and construction activities. • A City Maintenance Office would need to be relocated, and up to 13 businesses (36 parcels) would be either partially or fully impacted by ROW acquisition. • Potential job loss due to business relocation at larger extent than Alignment 3A. 	<ul style="list-style-type: none"> • The viaduct and all acquired buildings would be first removed. Roadway blockage to the remaining businesses would temporarily occur during the demolition and construction activities. • A City Maintenance Office would need to be relocated, and up to 7 businesses (40 parcels) would be either partially or fully impacted by ROW acquisition. • Potential job loss due to business relocation at lesser extent than Alignments 3A and 3B.

**Table ES-1
Summary of Potential Impacts from Alternatives**

Area of Impact	Alternative 1 No Action	Alternative 2 Retrofit	Alternative 3 Replacement Alignment 3A	Alternative 3 Replacement Alignment 3B	Alternative 3 Replacement Alignment 3C
Community Impacts: Environmental Justice	None	<ul style="list-style-type: none"> The project study area contains predominantly minority and low-income populations compared to the larger area within the city and county of Los Angeles. Construction would require partial lane closures on the 6th Street Viaduct. Construction of Alternative 2 would cause disproportionately high adverse effects on minority and/or low-income populations living closer to the construction zone as per Executive Order 12898 regarding environmental justice. 	<ul style="list-style-type: none"> Construction would require full closure of the 6th Street Viaduct. Construction of the Replacement Alternative would cause disproportionately high adverse effects on minority and/or low-income populations who live closer to the viaduct and the proposed detour routes as per Executive Order 12898 regarding environmental justice No adverse impact pertaining to environmental justice relative to business owners is anticipated; however, low-income and minority workers employed by the potentially affected businesses could experience the permanent loss of jobs if business owners decide to relocate their business elsewhere. Residents in the area adjacent to the viaduct would receive higher benefit from the opportunity to redevelop the area as a result of the proposed project. 	Same as Alignment 3A.	Same as Alignment 3A.

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Utilities and Emergency Services	None	<ul style="list-style-type: none"> • Temporary or permanent relocation of some utility services may be required. • Disruption to railroad operations during construction. • Permanently reduce horizontal clearance between the center of existing tracks and the retrofitted columns of the viaduct by approximately 1 ft. • Partial lane closure on the 6th Street Viaduct during the 2.5-year construction period would delay emergency response services. 	<ul style="list-style-type: none"> • Temporary or permanent relocation of some utility services would be required. • Potential disruption to railroad operations to a larger extent than with Alternative 2. • Full closure of the 6th Street Viaduct during the 4-year construction period would delay emergency response services. • Beneficial effects from providing the median and shoulders for emergency use. 	Same as Alignment 3A.	Same as Alignment 3A.

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Area of Impact	Alternative 1 No Action	Alternative 2 Retrofit	Alternative 3 Replacement Alignment 3A	Alternative 3 Replacement Alignment 3B	Alternative 3 Replacement Alignment 3C
Traffic, Transportation, Pedestrian Facilities	None	<ul style="list-style-type: none"> • Construction would cause localized, temporary traffic disruption, sidewalk blockage, and parking space obstruction. • Possible loss of some currently public parking spaces underneath and along the local streets near the viaduct, creating inconvenience to area residents and businesses. • Minor disruption to public transit operations due to possible partial lane closures on the 6th Street Viaduct. 	<ul style="list-style-type: none"> • Construction would require full closure of the 6th Street Viaduct for up to 4 years, resulting in traffic detours along the street network east and west of the river. Traffic analysis revealed up to 13 out of 31 intersections under study would be impacted by detouring traffic. In addition, the 6th Street frontage roads on both sides of the viaduct would need to be vacated, causing obstruction to the operations of adjacent businesses that are not subject to relocation and depend on the frontage roadways for access. Sidewalk closure requiring rerouting of pedestrians, and the loss of approximately 50 public parking spaces around the viaduct would also occur during the construction phase. • Loss of public parking spaces underneath and along the local streets near the viaduct would create inconvenience to area residents and businesses. • Travel delays of 5 to 10 minutes on public transit would occur from traffic detours. 	Same as Alignment 3A.	Same as Alignment 3A.

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Area of Impact	Alternative 1 No Action	Alternative 2 Retrofit	Alternative 3 Replacement Alignment 3A	Alternative 3 Replacement Alignment 3B	Alternative 3 Replacement Alignment 3C
Visual/Aesthetic	None	<ul style="list-style-type: none"> Retrofit would encase most of the existing columns with heavy steel covered by architectural mortar creating a more massive column configuration. In addition, construction of sheer walls between many of the columns would limit many of the views under the viaduct. The view restriction under the viaduct deck could affect activities such as filming. 	<ul style="list-style-type: none"> Replacement of the viaduct and the subsequent loss of the historic landmark would impact the views to the structure. The various bridge replacement concepts would be expected to alter the existing views to varying degrees. The most notable visual impact would be from replacement of the historic structure with a new structure of contemporary design (i.e., the cable-supported design); however, each of the designs analyzed would maintain the vividness/memorability, unity, and visual intactness experienced with the current viaduct structure. 	Same as Alignment 3A.	Same as Alignment 3A.

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Area of Impact	Alternative 1 No Action	Alternative 2 Retrofit	Alternative 3 Replacement Alignment 3A	Alternative 3 Replacement Alignment 3B	Alternative 3 Replacement Alignment 3C
Cultural Resources	None	<ul style="list-style-type: none"> The project area has the potential for buried archaeological materials to be encountered during ground disturbance. Retrofitting would alter and/or destroy the historic materials, features, and spatial relationships that characterize the viaduct, resulting in an adverse effect to a designated historic resource. 	<ul style="list-style-type: none"> The project area has the potential for buried archaeological materials to be encountered during ground disturbance. Replacement of the viaduct would remove the 6th Street Viaduct, resulting in an adverse effect to a designated historic resource. The viaduct would be removed from the city-wide inventory of historic bridges over the Los Angeles River, impacting the City's remaining monumental resources on a cumulative basis. 	Same as Alignment 3A.	Same as Alignment 3A.
Hydrology and Floodplains	None	None	None	None	None
Water Quality and Stormwater Runoff	<ul style="list-style-type: none"> All stormwater runoff from the viaduct would continue to be discharged to the Los Angeles River without prior treatment 	<ul style="list-style-type: none"> No permanent treatment best management practice (BMP) devices would be installed with this alternative; all stormwater runoff from the viaduct would continue to be discharged to the Los Angeles River without prior treatment. 	<ul style="list-style-type: none"> Stormwater from the new viaduct would be treated before discharging to the Los Angeles River. 	Same as Alignment 3A.	Same as Alignment 3A.

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Area of Impact	Alternative 1 No Action	Alternative 2 Retrofit	Alternative 3 Replacement Alignment 3A	Alternative 3 Replacement Alignment 3B	Alternative 3 Replacement Alignment 3C
Geology, Soils, Seismicity	None, but the viaduct would continue to deteriorate from Alkali Silica Reaction (ASR) weakening the concrete elements.	<ul style="list-style-type: none"> Alternative 2 would design the retrofitted features to prevent collapse under a design seismic event. Due to access restrictions near the railroad, Bent 12 would not be retrofitted. The design life expectancy to prevent seismic collapse under this alternative is approximately 30 years. The viaduct would have to be replaced if it collapses during a major earthquake or the ASR deterioration renders it unsafe. 	<ul style="list-style-type: none"> Would have a beneficial effect because Alternative 3 would replace the existing severely damaged viaduct with a new viaduct that is designed to meet current seismic safety standards required by Caltrans. 	Same as Alignment 3A.	Same as Alignment 3A.
Paleontology	None	<ul style="list-style-type: none"> No previously recorded paleontological sites were identified during the records search; however, there is the potential to uncover fossil remains as a result of earth-moving activities. 	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.
Hazardous Waste/Materials	None	<ul style="list-style-type: none"> Based on the results of a site investigation conducted along the existing viaduct corridor, soil and groundwater at the project site have the potential to be contaminated with volatile organic compounds (VOCs) and petroleum hydrocarbons; this could impact workers and the environment. 	<ul style="list-style-type: none"> Based on the results of a site investigation conducted along the existing viaduct corridor, soil and groundwater at the project site have the potential to be contaminated with VOCs and petroleum hydrocarbons; this could impact workers and the environment. 	Same as Alignment 3A.	Same as Alignment 3A.

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Area of Impact	Alternative 1 No Action	Alternative 2 Retrofit	Alternative 3 Replacement Alignment 3A	Alternative 3 Replacement Alignment 3B	Alternative 3 Replacement Alignment 3C
Hazardous Waste/Materials		<ul style="list-style-type: none"> Buildings to be demolished may have asbestos-containing materials (ACM) in the form of coatings, insulation, and/or expansion joint compounds and lead-based paint (LBP) coatings, which could cause health effects to workers. Costs associated with hazardous waste remediation and disposal under Retrofit Alternative 3 are estimated at \$6 million. 	<ul style="list-style-type: none"> Soils near US 101 may contain aerially deposited lead (ADL) generated by motor vehicle exhaust, which could cause health effects to workers. The viaduct and buildings to be demolished may have ACM in the form of coatings, insulation, and/or expansion joint compounds and LBP coatings, which could cause health effects to workers. Costs associated with hazardous waste remediation and disposal under Replacement Alternative are estimated at \$4.7 million. 	Same as Alignment 3A.	Same as Alignment 3A.
Air Quality	None	<ul style="list-style-type: none"> Under the worst-case day of the construction period (i.e., viaduct closed and traffic detour in effect), the regional emissions of nitrogen oxides (NO_x) would exceed the daily significance threshold set forth by South Coast Air Quality Management District (SCAQMD). 	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.

<p align="center">Table ES-1 Summary of Potential Impacts from Alternatives</p>					
Area of Impact	Alternative 1 No Action	Alternative 2 Retrofit	Alternative 3 Replacement Alignment 3A	Alternative 3 Replacement Alignment 3B	Alternative 3 Replacement Alignment 3C
Noise and Vibration	None	<ul style="list-style-type: none"> Noise impacts from retrofit activities would be confined to a relatively narrow corridor extending along both sides of the viaduct and corresponding to the construction sequence. The commercial/industrial areas adjacent to the viaduct are not identified as “frequent human outdoor-use” locations; therefore, no adverse construction noise impacts to commercial/manufacturing uses along the 6th Street corridor are anticipated. The closest residences to the viaduct are located 600 ft away; no adverse noise impact would occur. During construction, the highest vibration levels would be caused by the impact pile driver. Buildings located adjacent to the pile driving location could temporarily experience the vibration effect. Since no fragile buildings or historic buildings are located within 50 ft of the proposed construction site, no adverse impacts from construction vibration to adjacent buildings are expected to occur. 	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.

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Area of Impact	Alternative 1 No Action	Alternative 2 Retrofit	Alternative 3 Replacement Alignment 3A	Alternative 3 Replacement Alignment 3B	Alternative 3 Replacement Alignment 3C
Biological Resources	None	<ul style="list-style-type: none"> Limited biological resources exist within the viaduct footprint where construction activities would occur. No mature trees would be removed; hence, no adverse impacts to plant species are anticipated. Although no cliff swallows or roosting bats were apparent underneath the 6th Street Viaduct during the survey, they may establish new nests or roosts under the viaduct deck at any time. A preconstruction survey would be conducted to confirm the absence or presence of any nesting birds or roosting bats. If found, steps would be taken to remove them and prevent establishment of new nests or roosts prior to the beginning of the nesting season. 	<ul style="list-style-type: none"> Ornamental trees within the survey area have a limited potential to support nesting birds, which are protected by the Migratory Bird Treaty Act. A preconstruction survey would be conducted to identify any mature trees subject to removal prior to the commencement of construction activities. Although no cliff swallows or roosting bats were apparent underneath the 6th Street Viaduct during the survey, they may establish new nests under the viaduct deck at any time. A preconstruction survey would be conducted to confirm the absence or presence of any nesting birds or roosting bats. If found, steps would be taken to remove them and prevent establishment of new nests or roosts prior to the beginning of the nesting season. 	Same as Alignment 3A.	Same as Alignment 3A.

Avoidance, Minimization, and Mitigation Measures

The proposed project alternatives have been designed to avoid or minimize potential environmental impacts. Mitigation measures are proposed when avoidance and minimization attempts could not fully resolve the impacts. The following tables present standard measures and provisions based on applicable laws, regulations, ordinances and formally adopted City standards to minimize project effects (Table ES-2), and specific mitigation measures (Table ES-3).

**Table ES-2
Standard Measures under Applicable Laws, Regulations, and Adopted City
Standards to be Incorporated into Bid and Specification Package**

No.	Standard Measures	Impacted Resources
1	Continue the outreach program to keep residents, businesses, and any service providers within the area informed, and to inform surrounding communities about the project construction schedule, relocation plans and assistance programs, traffic-impacted areas and the Transportation Management Plan (TMP), and other relevant project information.	Community Impacts
2	Compensate the private parking owners for the loss of any private parking spaces through the right-of-way (ROW) acquisitional process.	Community Impacts
3	Provide assistance to the local businesses within the project limits to the extent allowed by laws and regulations in the event permanent property acquisition or temporary business closures result from project construction.	Community Impacts
4	Coordinate closely with the railroad owners or their representatives during the design phase of the project to ensure that the final designs are reviewed and approved by respective railroad authorities.	Utility Impacts
5	Obtain a construction license agreement with respective railroad authorities for construction within the railroad ROW prior to start of construction. Coordinate with railroad representatives during the construction phase to minimize interruption to railroad operations.	Utility Impacts
6	Prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) and Monitoring program. The SWPPP would include erosion and sediment control; non-stormwater management; post-construction stormwater management; waste management and disposal; maintenance, inspection, and repair of Best Management Practices (BMPs); employee training to perform inspections of the BMPs at the construction site; and a sampling and analysis plan for contaminated storm runoff. The SWPPP would describe both structural and nonstructural BMPs to minimize or eliminate the potential for spills and leakage of construction materials and erosion of disturbed areas by water and wind.	Water Quality
7	Require the construction contractor to conduct soil profiling (in particular, but not limited to, metals and aerially deposited lead [ADL]) while handling soil at the project site during construction. If the soil contains contaminant concentrations that meet the definition of hazardous materials, then the contractor will be required to adhere to City Standard Specifications (known as the Greenbook), which address the management of various hazardous materials and wastes and that is consistent with the federal and state of California requirements pertaining to hazardous materials and wastes management.	Hazards and Hazardous Materials
8.	Require the construction contractor to conduct a survey to screen for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition activities. If ACM is found, then the contractor shall comply with South Coast Air Quality Management District (SCAQMD) Rule 1403 notification and removal processes.	Hazards and Hazardous Materials
9	Require the construction contractor to dispose of any hazardous materials or wastes encountered during demolition and construction according to current regulatory guidelines.	Hazards and Hazardous Materials
10	Require the construction contractor to obtain an NPDES permit for wastewater discharge if there is a potential for dewatering activities at the project site during construction.	Hazards and Hazardous Materials
11	Require the construction contractor to implement PM ₁₀ control by applying measures contained in Tables 1 and 2 of SCAQMD Rule 403.	Air Quality

Table ES-2
Standard Measures under Applicable Laws, Regulations, and Adopted City
Standards to be Incorporated into Bid and Specification Package

No.	Standard Measures	Impacted Resources
12	<p>Require the construction contractor to implement the following measures, when feasible, to reduce PM₁₀ and NO_x emissions generated by construction equipment:</p> <ul style="list-style-type: none"> a Water the construction site three times daily, or apply nontoxic soil stabilizers, as needed, to reduce offsite transport of fugitive dust from all unpaved staging areas and unpaved road surfaces. b Properly tune and maintain construction equipment in accordance with manufacturer's specifications. c Keep trucks and vehicles in loading/unloading queues with their engines off when not in use to reduce vehicle emissions. The contractor shall phase construction activities to avoid emissions peaks, where feasible, and discontinue work during second-stage smog alerts. d To the extent possible, use construction equipment that is powered by aqueous diesel or alternative fuel sources (e.g., methanol, natural gas, propane). e Where feasible, use diesel oxidation catalyst for heavy-duty construction equipment. 	Air Quality
13	<p>Incorporate the following requirements in the construction specifications:</p> <ul style="list-style-type: none"> a. Use newer equipment with improved noise muffling and ensure that all equipment has the manufacturers' recommended noise abatement measures, such as mufflers, engine enclosures, and engine vibration isolators intact and operational. Newer equipment will generally be quieter in operation than older equipment. All construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers and shrouding). b. Utilize construction methods or equipment that will provide the lowest level of noise and ground vibration impact, such as alternative low-noise pile installation methods. c. Turn off idling equipment. d. Implement a construction noise and/or vibration monitoring program to limit the impacts. e. Comply with all appropriate provisions of the City Noise Ordinance including, but not limited to, the restrictions on hours of construction and mechanical equipment noise levels. f. Limit construction activities to daytime hours. If nighttime construction is necessary, then the proper permits and variances shall be obtained. g. Comply with the TMP on construction routes to avoid or minimize impacts on noise-sensitive receptors located in areas of close proximity to the project site. h. Keep noise levels relatively uniform and avoid impulsive noises. i. Keep area residents and businesses informed of the schedule, duration, and progress of the construction to minimize public objections of unavoidable noise. Notify communities in advance of the construction and of the expected temporary noise impacts during the construction period. 	Noise

**Table ES-3
Proposed Specific Mitigation Measures**

Environmental Factor	Mitigation Measures	
	Alternative 2 – Retrofit	Alternative 3 – Replacement
Community Impacts and Environmental Justice	<ul style="list-style-type: none"> The City of Los Angeles would develop a construction staging plan and TMP in close coordination with the members of the Downtown Construction Traffic Management Committee and with agencies or developers responsible for other planned projects in the immediate vicinity of the proposed project to minimize direct and cumulative construction impacts on the community. The TMP should also identify and provide alternate traffic detour routes, construction materials hauling routes, bus stops, transit routes and operation hours, pedestrian routes, and residential and commercial access routes to be used during the construction period. 	<ul style="list-style-type: none"> The City of Los Angeles would actively participate in the community planning exercise process to redevelop the vacated area around the 6th Street Viaduct to provide recreational, retail, and cultural, or other amenities. The City of Los Angeles would provide landscape and streetscape improvements to enhance the aesthetics of the affected intersections along the proposed detour routes that could not be mitigated to the less than significant level. The City of Los Angeles would actively participate in implementation of the Los Angeles River Revitalization Master Plan (LARRMP) to improve the area near the 6th Street Viaduct that is compatible within accordance with the Greening Concept features objectives set forth in the Master Plan. The City of Los Angeles would develop a construction staging plan and TMP in close coordination with members of the Downtown Construction Traffic Management Committee and with agencies or developers responsible for other planned projects in the immediate vicinity of the proposed project to minimize direct and cumulative construction impacts on the community. The TMP should also identify and provide alternate traffic detour routes, construction materials hauling routes, bus stops, transit routes and operation hours, pedestrian routes, and residential and commercial access routes to be used during the construction period.
Traffic, Transportation and Pedestrian Facilities	No specific mitigation is required.	<ul style="list-style-type: none"> The City of Los Angeles would install new traffic signals, and connect to Los Angeles City ATSAC system at the intersection of 4th Street and I-5 SB On-/Off-Ramps/Gertrude Street. The City of Los Angeles would restripe to add an eastbound right-turn lane at the intersection of 4th Street and Soto Street. The City of Los Angeles would provide alternative pedestrian access within the vicinity of the 6th Street Viaduct during the construction period.

**Table ES-3
Proposed Specific Mitigation Measures**

Environmental Factor	Mitigation Measures	
	Alternative 2 – Retrofit	Alternative 3 – Replacement
Emergency Services	<ul style="list-style-type: none"> The City of Los Angeles would notify emergency service providers at least 2 weeks in advance of the project construction schedule. Provide detailed information on the construction schedule, roadway closures, traffic detour route maps, and expected congested intersections. The City of Los Angeles would coordinate with emergency service providers throughout the construction period to notify them of any changes in construction schedule, roadway closures, and detour routes. 	Same as Alternative 2.
Aesthetics and Visual Resources	<ul style="list-style-type: none"> During the preliminary design stage of the project, the City and Caltrans have been conducting ongoing design workshops with community representatives. 	<ul style="list-style-type: none"> During the preliminary design stage of the project, the City and Caltrans have been conducting ongoing design workshops with community representatives. Continue to work with the community during the Draft EIR/EIS circulation for public review for input through a formalized Context Sensitive Solutions process to develop Aesthetic and Urban Design Guidelines for the new structure. Evaluate the benefit to the community of preserving open space created by the project. Work with the community and other stakeholders, including City agencies, in developing the Greening Concept to include open space and park amenities within the community, including the viaduct design for future connections to the river corridor. Develop bridge architecture to create a Community/City Gateway – including possible bridge monuments with decorative lighting, parapet wall treatments, decorative fencing/railing and lighting, and abutment/wing walls – to increase the memorability and announce the presence of the bridge. Texturize and color slope paving and other smooth surfaces to deter graffiti and enhance the bridge aesthetics. Apply architectural detailing to the retaining walls, including textures, colors, and patterns. Include caps that will provide shadow lines.
Cultural/ Historical Resources	<ul style="list-style-type: none"> The City of Los Angeles would implement all stipulations and measures to resolve the adverse effect to be developed as part of the executed Memorandum of Agreement (MOA) between the State Historic Preservation Officer (SHPO), City of Los Angeles, and Caltrans. The City of Los Angeles would establish an Environmental Sensitive Area (ESA) Action Plan, which will include fencing of site no. 19-003683, archaeological and Native American monitoring during ground-disturbing activities, and training of construction workers. 	Same as Alternative 2.

**Table ES-3
Proposed Specific Mitigation Measures**

Environmental Factor	Mitigation Measures	
	Alternative 2 – Retrofit	Alternative 3 – Replacement
	<ul style="list-style-type: none"> • The City of Los Angeles would provide a qualified archaeological monitor to be present at the site during ground-disturbing activities. In the event buried cultural resources are encountered during construction, construction would be halted and the discovery area isolated and secured until the archaeologist finishes evaluating the nature and significance of the find. • The City of Los Angeles would provide a Native American monitor(s) to be present at the site during ground-disturbing activities • If human remains are discovered, then the City of Los Angeles would notify County coroner as soon as is reasonably possible. There would be no further site disturbance where the remains were found. If the remains are Native American, then the coroner is responsible for contacting the NAHC within 24 hours. The Commission would immediately notify those persons it believes to be the Most Likely Descendants (MLDs) of the human remains. Treatment of the remains would be dependent on the views of the MLD. 	
Paleontology	<ul style="list-style-type: none"> • The City of Los Angeles would retain a qualified paleontologist prior to the start of construction to develop and implement a Paleontological Mitigation Plan (PMP). The PMP would include obtaining a written storage agreement with a recognized museum repository; presenting preconstruction meeting instructions for construction personnel on environmental awareness; instructions on fossil remains handling requirements for archival archiving; archival requirements for remains prior to transfer to the repository for permanent storage and maintenance; instructions on fossil remains handling requirements; a discussion of bulk sample requirements of fine-grained sediment from fossiliferous or potentially fossiliferous strata; and preparation of a report summarizing the findings of the work conducted under the PMP. • The City of Los Angeles would provide a paleontological monitor onsite on a full-time basis to inspect new exposures created by earth-moving activities in areas underlain by the older alluvium and at depths greater than 5 ft below current grade for the younger alluvium. • If fossil remains are discovered, the City of Los Angeles would temporarily halt earth-moving activities at the fossil site to allow the monitor to recover the fossil remains. 	Same as Alternative 2.

**Table ES-3
Proposed Specific Mitigation Measures**

Environmental Factor	Mitigation Measures	
	Alternative 2 – Retrofit	Alternative 3 – Replacement
Biological Resources	<ul style="list-style-type: none"> If construction occurs between February 1 and August 31, conduct a preconstruction survey by a qualified biologist to identify any active nesting or roosting locations. If the biologist finds an active nest within the construction area and determines that it may be impacted, then the biologist would delineate an appropriate buffer zone around the nest depending on the species and the type of construction activity. Any active nests or roost observed during the survey would be mapped on an aerial photograph. The biologist would serve as a construction monitor during those periods when construction activities occur near active nest or roost areas to ensure that no inadvertent impacts on these nests occur. Results of the preconstruction survey and any subsequent monitoring would be provided to the California Department of Fish and Game (CDFG). 	<ul style="list-style-type: none"> To protect any possible migratory bird nesting activity, avoid removal of non-native ornamental vegetation between September 1 and January 31. If construction occurs between February 1 and August 31, conduct a preconstruction survey by a qualified biologist to identify any active nesting locations. If the biologist finds an active nest within the construction area, then the CDFG biologist would be consulted on how to relocate them to avoid any construction impacts.

Areas of Controversy

Under both build alternatives for this project, the proposed undertaking would have an adverse effect on the 6th Street Viaduct pursuant to provisions of the National Historic Preservation Act (NHPA). Alternative 2 – Retrofit proposes work that would alter the character-defining features of the viaduct, potentially making the property ineligible for inclusion in the National Register of Historic Places (NRHP) by compromising the integrity of the historic structure. Alternative 3 – proposes to replace the existing viaduct with the new structure, resulting in the removal of the historic structure. The 6th Street Viaduct is 1 of 12 historically significant bridges/viaducts that cross the Los Angeles River and are considered important both for their distinctive architecture and for the critical role they played in the development of Los Angeles as a world-class city. The 6th Street Viaduct is also a visual landmark that links the communities of Boyle Heights and Downtown Los Angeles. City preservationists are concerned about the loss of the historic viaduct, and citizens of both communities have expressed concern at public meetings about the importance of this landmark to the community and how modifications to the structure or its removal could have an adverse effect on community values.

In public and agency meetings held during project scoping, support was expressed for opportunities created by viaduct replacement to redevelop the area surrounding 6th Street Viaduct. This was viewed as an opportunity to enhance the quality of life of those living in the local community and the region. Examples of redevelopment and land use opportunities included adding more recreational area adjacent to the new viaduct; making the viaduct a landmark destination; development of retail and gallery space; provision of river access; and making the

area around the viaduct a defensible space to facilitate the elimination of crime and homeless occupation. While these opportunities are compatible with the objectives and plans of the Los Angeles River Revitalization Master Plan, redevelopment of this land for non-industrial uses would be inconsistent with the local community plans that aim to preserve the industrial land uses and protect employment within the community plan area.

Another area of public debate that arose during project meetings has been the wide-ranging preferences for replacement bridge types to be constructed for the main span over the Los Angeles River. Five bridge types have been evaluated by the Project Development Team members, the bridge experts, and the general public. The bridge types under consideration include a replication of the existing viaduct, variations of a contemporary arch structure, and ultra-modern “extradosed” (cable-supported) structures.

Agreements and Permits to be Obtained from other Agencies

The following permits, reviews, and approvals would be required for project construction:

Agency	Permit/Approval
U.S. Army Corps of Engineers (USACE)	Section 404 Permit for possible discharge of dredged or fill material into the Los Angeles River
State Historic Preservation Officer (SHPO)	Section 106 consultation and agreement document to resolve the adverse effect to the historic 6 th Street Viaduct
Los Angeles Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification for work in the Los Angeles River Channel
RWQCB	Groundwater Dewatering Permit for discharges of groundwater from construction and project dewatering to surface waters in the watersheds of Los Angeles
California Department of Fish and Game (CDFG)	Section 1602 Agreement for Streambed Alteration
All railroad agencies owning and operating railroad tracks along both sides of the Los Angeles River	Railroad License/Agreement for work within railroad ROW