6th Street Viaduct Seismic Improvement Project

LOS ANGELES COUNTY, CALIFORNIA
DISTRICT 7 – Bridge Nos. 53C-1880 and 53-0595
EA 251200
Federal Project Number 5006 (342)
SCH#2007081005

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

VOLUME I – MAIN TEXT

Prepared by

State of California Department of Transportation (NEPA Lead Agency)
and
City of Los Angeles (CEQA Lead Agency)

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.

October 2011
6TH STREET VIADUCT SEISMIC IMPROVEMENT PROJECT

FINAL
ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION

Submitted Pursuant to: (State) Division 13, Public Resources Code

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 the Department under its assumption of responsibility
pursuant to 23 U.S.C. 327.

STATE OF CALIFORNIA
Department of Transportation (NEPA Lead Agency)
and
City of Los Angeles (CEQA Lead Agency)

Date: 10/5/2011

Michael Miles
District Director, District 7
California Department of Transportation

Date: October 3, 2011

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

The following persons may be contacted for additional information concerning this document:

Carlos Montez
Branch Chief, Division of Environmental Planning
California Department of Transportation
100 S. Main Street
Los Angeles, CA 90012
Carlos.montez@dot.ca.gov

Linda Moore
Environmental Supervisor
City of Los Angeles
1149 South Broadway, Suite 750
Los Angeles, CA 90015
linda.moore@lacity.org

6th Street Viaduct Seismic Improvement Project  i  October 2011
**Abstract**

The 6th Street Viaduct was constructed in 1932 using then state-of-the-art concrete technology and an onsite mixing plant. Over the last 75 years, concrete elements of the viaduct have cracked and deteriorated as a result of an internal chemical reaction called Alkali Silica Reaction (ASR). The results of seismic vulnerability studies, completed in 2004, concluded that the viaduct, in its current state of material deterioration and lack of structural strength, has a high vulnerability to failure as a result of a major earthquake. In addition to its vulnerability to collapse under predictable seismic forces, the 6th Street Viaduct also has geometric design and safety deficiencies.

This joint Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) documents potential environmental impacts associated with two build alternatives and a No Action Alternative. Notable impacts that have been identified consist of:

- Use of an historic site protected under Section 4(f) of the U.S. Department of Transportation Act of 1966, an adverse effect under Section 106 of the National Historic Preservation Act of 1966, and a significant impact under CEQA
- Displacement and relocation of active industrial and commercial activities
- Air pollutant emissions during the construction period
- Traffic disruption during the construction period
- Emergency response delay during the construction period

The preferred alternative chosen is replacement of the existing viaduct on Alignment 3B using the principles of Bridge Concept 4.
# Table of Contents

## VOLUME I – MAIN TEXT

Summary ........................................................................................................................................... xiii  

### Chapter 1  Proposed Project ........................................................................................................ 1-1  
1.1 Introduction .............................................................................................................................. 1-1  
1.2 Project Location and Setting .................................................................................................... 1-3  
1.3 Project Funding ....................................................................................................................... 1-7  
1.4 Project Purpose ........................................................................................................................ 1-8  
1.5 Project Need ................................................................................................................................ 1-9  
1.5.1 Need to Preserve Viability of 6th Street Transportation Corridor ........................................ 1-9  
1.5.2 Need to Reduce Vulnerability to Seismic Collapse .............................................................. 1-10  
1.5.3 Need to Resolve Design Deficiencies .................................................................................. 1-15  
1.6 Independent Utility and Logical Termini ................................................................................. 1-16  

### Chapter 2  Project Alternatives .................................................................................................. 2-1  
2.1 Introduction .............................................................................................................................. 2-1  
2.2 Project Description .................................................................................................................. 2-1  
2.2.1 Proposed Action .................................................................................................................. 2-1  
2.2.2 Description of Existing Viaduct .......................................................................................... 2-1  
2.3 Description of Evaluated Project Alternatives ......................................................................... 2-3  
2.3.1 Alternative 1 – No Action ................................................................................................. 2-3  
2.3.2 Alternative 2 – Viaduct Retrofit ....................................................................................... 2-4  
2.3.3 Alternative 3 – Viaduct Replacement .................................................................................. 2-11  
2.4 Preferred Alternative Identification ......................................................................................... 2-30  
2.5 Alternatives Considered but Eliminated from Further Discussion ......................................... 2-31  
2.6 Permits and Approvals Needed ............................................................................................... 2-44  

### Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures .................................................................................. 3-1  
3.1 Introduction .............................................................................................................................. 3-1  
3.2 Land Use and Planning ............................................................................................................ 3-5  
3.3 Community Impacts – Community Character and Cohesion ............................................... 3-24  
3.4 Community Impacts – Relocations and Business Disruption ............................................... 3-39  
3.5 Community Impacts – Environmental Justice ....................................................................... 3-61  
3.6 Utilities and Emergency Services ............................................................................................. 3-70  
3.7 Traffic and Transportation/Pedestrian and Bicycle Facilities ............................................... 3-84  
3.8 Visual/Aesthetics ..................................................................................................................... 3-113  

---

6th Street Viaduct Seismic Improvement Project  
iii  
October 2011
Table of Contents

3.9 Cultural Resources ................................................................. 3-150
3.10 Hydrology and Floodplains .................................................... 3-167
3.11 Water Quality and Stormwater Runoff .................................... 3-180
3.12 Geology/Soils/Seismicity ....................................................... 3-191
3.13 Paleontology ................................................................. 3-196
3.14 Hazardous Waste/Materials .................................................... 3-200
3.15 Air Quality ............................................................................ 3-213
3.16 Noise ................................................................................... 3-253
3.17 Energy ................................................................................. 3-274
3.18 Natural Communities ............................................................ 3-278
3.19 Wetlands and Other Waters .................................................... 3-278
3.20 Plant Species ......................................................................... 3-285
3.21 Animal Species ...................................................................... 3-286
3.22 Threatened and Endangered Species ....................................... 3-289
3.23 Invasive Species ................................................................. 3-294
3.24 Any Irreversible and Irretrievable Commitments of Resources that would be
Involved in the Proposed Action .................................................. 3-296
3.25 The Relationship between Local Short-Term Uses of the Human Environment
and the Maintenance and Enhancement of Long-Term Productivity ....... 3-297
3.26 Cumulative Impacts ............................................................... 3-298

Chapter 4 California Environmental Quality Act Evaluation .................. 4-1
4.1 Determining Significance under CEQA ................................... 4-1
4.2 Resources Considered Not Relevant or Resulting in No Impacts .......... 4-2
4.3 Less than Significant Effects of the Proposed Project .................. 4-2
4.4 Significant Environmental Effects of the Proposed Project .......... 4-6
4.5 Unavoidable Significant Environmental Effects ...................... 4-19
4.6 Significant Irreversible Environmental Changes ....................... 4-23
4.7 Growth-Inducing Impacts ..................................................... 4-23
4.8 Global Climate Change ........................................................... 4-23
4.9 Mitigation Measures for Significant Impacts under CEQA .......... 4-34

Chapter 5 Comments and Coordination ......................................... 5-1
5.1 Introduction ........................................................................... 5-1
5.2 Pre-Scoping Activities ......................................................... 5-2
5.3 Scoping Process ....................................................................... 5-5
5.4 Public Participation .............................................................. 5-9
5.5 Business Survey ................................................................. 5-10
5.6 Comments and Responding to Comments ................................ 5-11
5.7 Public Review of Draft EIR/EIS ........................................................................................................ 5-11

**Chapter 6**

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Lead Agency Staff</td>
</tr>
<tr>
<td>6.2</td>
<td>Report Preparers</td>
</tr>
<tr>
<td>6.1-1</td>
<td>List of Preparers</td>
</tr>
</tbody>
</table>

**Chapter 7**

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>Draft EIR/EIS</td>
</tr>
<tr>
<td>7.2</td>
<td>Final EIR/EIS</td>
</tr>
<tr>
<td>7.1-1</td>
<td>Distribution List</td>
</tr>
</tbody>
</table>

**VOLUME II – APPENDICES**

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>CEQA Checklist</td>
</tr>
<tr>
<td>B1</td>
<td>Resources Evaluated Relative to Section 4(f)</td>
</tr>
<tr>
<td>B2</td>
<td>Section 4(f) Evaluation</td>
</tr>
<tr>
<td>C</td>
<td>Title VI Policy Statement</td>
</tr>
<tr>
<td>D</td>
<td>Summary of Relocation Benefits</td>
</tr>
<tr>
<td>E</td>
<td>Glossary of Technical Terms</td>
</tr>
<tr>
<td>F</td>
<td>Mitigation Monitoring and Reporting Program</td>
</tr>
<tr>
<td>G</td>
<td>List of Acronyms and Abbreviations</td>
</tr>
<tr>
<td>H</td>
<td>References</td>
</tr>
<tr>
<td>I</td>
<td>List of Technical Studies</td>
</tr>
<tr>
<td>J</td>
<td>Section 6002 Coordination Plan</td>
</tr>
<tr>
<td>K</td>
<td>Letter from US Fish and Wildlife Service</td>
</tr>
<tr>
<td>L</td>
<td>Notices of Availability of Draft EIR/EIS</td>
</tr>
<tr>
<td>M</td>
<td>Written Comments and Responses on Draft EIR/EIS</td>
</tr>
<tr>
<td>N</td>
<td>Alternative Development Process</td>
</tr>
<tr>
<td>O</td>
<td>Memorandum of Agreement (pursuant to Section 106 of the National Historic Preservation Act of 1966)</td>
</tr>
<tr>
<td>P</td>
<td>Air Quality Conformity Concurrence by FHWA</td>
</tr>
</tbody>
</table>
## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1-1</td>
<td>Project Location and Vicinity Maps ..................................................</td>
<td>1-2</td>
</tr>
<tr>
<td>Figure 1-2</td>
<td>Aerial View of the Proposed Project Vicinity .........................................</td>
<td>1-4</td>
</tr>
<tr>
<td>Figure 1-3</td>
<td>Existing River Access Tunnel ...................................................................</td>
<td>1-5</td>
</tr>
<tr>
<td>Figure 1-4</td>
<td>Railroad Corridors along East River Bank Looking North ...........................</td>
<td>1-6</td>
</tr>
<tr>
<td>Figure 1-5</td>
<td>High-Voltage Transmission Towers in the Vicinity of the Viaduct ...............</td>
<td>1-6</td>
</tr>
<tr>
<td>Figure 1-6</td>
<td>Cracks due to ASR ..................................................................................</td>
<td>1-12</td>
</tr>
<tr>
<td>Figure 1-7</td>
<td>Concrete Core Sample Showing Damage Caused by ASR ..................................</td>
<td>1-12</td>
</tr>
<tr>
<td>Figure 1-8</td>
<td>Level of Damage in Various Elements of the 6th Street Viaduct due to ASR ..........</td>
<td>1-13</td>
</tr>
<tr>
<td>Figure 2-1</td>
<td>Steel Encasement of Columns ..................................................................</td>
<td>2-5</td>
</tr>
<tr>
<td>Figure 2-2</td>
<td>Conceptual Drawing Alternative 2 – Retrofit .............................................</td>
<td>2-6</td>
</tr>
<tr>
<td>Figure 2-3</td>
<td>Retrofitting of Bent Caps by Concrete Bolsters .........................................</td>
<td>2-7</td>
</tr>
<tr>
<td>Figure 2-4</td>
<td>Bent Cap Retrofit at Expansion Joints (one simply supported span).............</td>
<td>2-7</td>
</tr>
<tr>
<td>Figure 2-5</td>
<td>Bent Cap Retrofit at Expansion Joints (two simply supported spans)..........</td>
<td>2-8</td>
</tr>
<tr>
<td>Figure 2-6</td>
<td>Alignment Alternatives Selected for Further Study ....................................</td>
<td>2-12</td>
</tr>
<tr>
<td>Figure 2-7</td>
<td>Computer Model of Bridge Concept 1 .......................................................</td>
<td>2-15</td>
</tr>
<tr>
<td>Figure 2-8</td>
<td>Computer Model of Bridge Concept 2 .......................................................</td>
<td>2-16</td>
</tr>
<tr>
<td>Figure 2-9</td>
<td>Computer Model of Bridge Concept 3 .......................................................</td>
<td>2-18</td>
</tr>
<tr>
<td>Figure 2-10</td>
<td>Computer Model of Bridge Concept 4 .......................................................</td>
<td>2-19</td>
</tr>
<tr>
<td>Figure 2-11</td>
<td>Computer Model of Bridge Concept 4A .....................................................</td>
<td>2-20</td>
</tr>
<tr>
<td>Figure 2-12</td>
<td>Computer Model of Bridge Concept 5 .......................................................</td>
<td>2-21</td>
</tr>
<tr>
<td>Figure 2-13</td>
<td>West End Transition Configuration .........................................................</td>
<td>2-22</td>
</tr>
<tr>
<td>Figure 2-14</td>
<td>East End Transition Configuration ............................................................</td>
<td>2-22</td>
</tr>
<tr>
<td>Figure 2-15</td>
<td>Substructure Replacement Concept ...........................................................</td>
<td>2-35</td>
</tr>
<tr>
<td>Figure 2-16</td>
<td>Replacement Alternative Alignment .........................................................</td>
<td>2-40 and 2-41</td>
</tr>
<tr>
<td>Figure 2-17</td>
<td>Bridge Concepts Developed at the Initial Phase of Project ........................</td>
<td>2-43</td>
</tr>
<tr>
<td>Figure 3.2-1</td>
<td>Community Planning Area Land Use Map ..................................................</td>
<td>3-7</td>
</tr>
<tr>
<td>Figure 3.2-2</td>
<td>Zoning Designation Map ............................................................................</td>
<td>3-8</td>
</tr>
<tr>
<td>Figure 3.2-3</td>
<td>Central Industrial Redevelopment Project Area ..........................................</td>
<td>3-16</td>
</tr>
<tr>
<td>Figure 3.2-4</td>
<td>Adelante Eastside Redevelopment Project Area ..........................................</td>
<td>3-17</td>
</tr>
<tr>
<td>Figure 3.2-5</td>
<td>Proposed Downtown Industrial Opportunity Area .......................................</td>
<td>3-19</td>
</tr>
<tr>
<td>Figure 3.3-1</td>
<td>Census Tracts in the Vicinity of the 6th Street Viaduct Seismic Improvement Project</td>
<td>3-28</td>
</tr>
</tbody>
</table>
Table of Contents

Figure 3.4-1  Business Survey Form ................................................................. 3-41
Figure 3.4-2  Potentially Affected Properties, Alignments 3A, 3B, 3C,
Except as Noted ................................................................. 3-43
Figure 3.4-3  Retrofit Alternative Acquisition and Easements ........................................ 3-45
Figure 3.4-4  Replacement Alternatives Acquisition and Easements ........................................ 3-55
Figure 3.7-1  Traffic Study Intersections and Existing Lane Configurations ................... 3-85
Figure 3.7-2  Existing Level of Service (2007) .......................................................... 3-93
Figure 3.7-3  2038 Traffic Volumes and Level of Service ........................................ 3-96
Figure 3.7-4  Parking within 6th Street Viaduct Construction Limits ................................ 3-97
Figure 3.7-5  Traffic Diversion Distribution – AM/PM Peak Hour
(from East to West of LA River) .................................................. 3-101
Figure 3.7-6  Traffic Diversion Distribution – AM/PM Peak Hour
(from West to East of LA River) ................................................... 3-102
Figure 3.7-7  Impacted Intersections during Project Construction (2018) ...................... 3-106
Figure 3.8-1  Key Viewpoint Locations ............................................................... 3-117
Figure 3.8-2  Artist Rendering of Viaduct Retrofit ..................................................... 3-123
Figure 3.8-3  Bridge Concept 1: Main Span Replication ............................................. 3-127
Figure 3.8-4  Bridge Concept 2: Haunched Box Girder with Parallel Steel Tied Arches 3-128
Figure 3.8-5  Bridge Concept 3: Steel Half-Through Arch ........................................ 3-129
Figure 3.8-6  Bridge Concept 4: Extradosed Concrete Box with Dual Pylons
(Two-Span Cable-Stay Bridge) ................................................. 3-130
Figure 3.8-7  Bridge Concept 4A: Extradosed Concrete Box Girder
with Three Dual Pylons (Three-Span Cable-Stay Bridge) .................. 3-131
Figure 3.8-8  Bridge Concept 5: Extradosed Concrete Box Girder with Single Pylon
(Cable-Stay Bridge with Seven Spans) ........................................ 3-132
Figure 3.8-9  Viewpoint 1: Bridge Concept 1 – Replication on Alignment ‘B’
Looking Southeast ............................................................... 3-139
Figure 3.8-10 Viewpoint 2: Bridge Concept 1 – Replication on Alignment ‘B’
Looking Southwest .............................................................. 3-140
Figure 3.8-11 Viewpoint 4: Bridge Concept 1 – Replication ......................................... 3-143
Figure 3.8-12 Viewpoint 4: Bridge Concept 2 – Parallel Steel Tied Arches .................... 3-144
Figure 3.8-13 Viewpoint 4: Bridge Concept 4A – Extradosed with Dual Pylons ................ 3-145
Figure 3.8-14 Viewpoint 4: Bridge Concept 5 – Extradosed with Single Pylon ............... 3-146
Figure 3.10-1  Watershed Map – Hydrologic Subarea 405.15 ...................................... 3-168
Figure 3.10-2  Subarea Map and Local Storm Drain Systems ................................... 3-170
Figure 3.10-3  Floodplain Map ................................................................................. 3-172
Figure 3.10-4  Main Span of Center River Pier ......................................................... 3-173
<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.10-5</td>
<td>Water Surface Profile near 6\textsuperscript{th} Street Viaduct</td>
<td>3-177</td>
</tr>
<tr>
<td>3.13-1</td>
<td>Surficial Geologic Map Showing Paleontologic Importance of Rock Units Underlying 6\textsuperscript{th} Street Viaduct</td>
<td>3-198</td>
</tr>
<tr>
<td>3.14-1</td>
<td>Location of Identified REC</td>
<td>3-203</td>
</tr>
<tr>
<td>3.14-2</td>
<td>Sampling Locations</td>
<td>3-207</td>
</tr>
<tr>
<td>3.15-1</td>
<td>Sensitive Receptors and Monitoring Station Locations</td>
<td>3-220</td>
</tr>
<tr>
<td>3.15-2</td>
<td>Outline of Construction Schedule for Replacement Alternative</td>
<td>3-236</td>
</tr>
<tr>
<td>3.16-1</td>
<td>Noise Levels of Common Activities</td>
<td>3-254</td>
</tr>
<tr>
<td>3.16-2</td>
<td>Noise Measurement Locations</td>
<td>3-260</td>
</tr>
<tr>
<td>3.19-1</td>
<td>Riverine Wetlands Designation within the Project Study Area</td>
<td>3-281</td>
</tr>
<tr>
<td>3.19-2</td>
<td>Area of Disturbance within the Los Angeles River from the Proposed Project</td>
<td>3-282</td>
</tr>
<tr>
<td>3.26-1</td>
<td>Los Angeles River Revitalization Master Plan:</td>
<td>3-322</td>
</tr>
<tr>
<td></td>
<td>Connections with the Project Area</td>
<td></td>
</tr>
<tr>
<td>4-1</td>
<td>California Greenhouse Gas Composition by Type of Gas in 2004</td>
<td>4-27</td>
</tr>
<tr>
<td>4-2</td>
<td>California Greenhouse Gas Inventory</td>
<td>4-27</td>
</tr>
<tr>
<td>4-3</td>
<td>Sources of California GHG Emissions by End-Use Sector (2004)</td>
<td>4-28</td>
</tr>
<tr>
<td>4-4</td>
<td>Outcome of Strategic Growth Plan</td>
<td>4-33</td>
</tr>
<tr>
<td>4-5</td>
<td>City of Los Angeles Near-Term Action Plan</td>
<td>4-35</td>
</tr>
</tbody>
</table>
List of Tables

Table S-1  Summary of Environmental Evaluation .......................................................... xxi
Table S-2  Proposed Specific Mitigation Measures ............................................................ xxxiv

Table 2-1  Summary of 6th Street Viaduct Design Features ............................................ 2-2
Table 2-2  Debris Quantity and Management Method ....................................................... 2-24
Table 2-3  Viaduct Replacement Estimate Costs ............................................................... 2-25

Table 3.3-1  Study Census Tract Population Demographics ............................................. 3-29
Table 3.3-2  Racial Composition of Population in the Study Census Tracts ......................... 3-29
Table 3.3-3  Study Area Socioeconomic Characteristics .................................................... 3-30
Table 3.3-4  Study Area Employment Data, Location of Work, and Means of Transportation to Work .......................................................... 3-32
Table 3.3-5  Labor Force Data in Los Angeles County as of November 2010 ...................... 3-33
Table 3.3-6  Study Census Tract Housing Demographics .................................................. 3-33
Table 3.4-1  Summary of Potentially Affected Properties ................................................. 3-42
Table 3.4-2  Survey Information on Potentially Affected Nonresidential Properties in the Vicinity of the Project Area .......................................................... 3-47
Table 3.6-1  Emergency Response Providers in the Project Study Area ............................. 3-74
Table 3.6-2  Potential Impacts to Railroads under Retrofit Alternative ............................. 3-75
Table 3.6-3  Potential Impacts to Railroads under Replacement Alternative ....................... 3-78
Table 3.7-1  Studied Intersections ....................................................................................... 3-88
Table 3.7-2  Existing Average Daily Traffic Volumes and Vehicle Classifications .............. 3-89
Table 3.7-3  Intersection Level of Service (LOS) Definitions ............................................. 3-91
Table 3.7-4  Existing Levels of Service of Study Intersections .......................................... 3-92
Table 3.7-5  Existing Parking Enforcement in the Project Area ........................................ 3-98
Table 3.7-6  Summary of Level of Service and Significant Impact Parameters .................. 3-104
Table 3.7-7  Summary of Impacted Intersections ............................................................... 3-105
Table 3.7-8  Potential Mitigation Measures at Impacted Intersections ............................... 3-111
Table 3.8-1  Summary of Visual Quality Change by Landscape Unit .................................. 3-134
Table 3.10-1  Existing Storm Drain Flow Summary ............................................................ 3-170
Table 3.10-2  Result of River Hydraulic Analysis ............................................................... 3-177
Table 3.11-1  Los Angeles River Reach 3 Pollutants of Concern ......................................... 3-186
Table 3.11-2  Proposed Temporary BMPs ........................................................................ 3-187
Table 3.14-1  Summary of Environmental Database Search Results ............................... 3-202
Table 3.14-2  Summary of Locations and Sampling Depths ............................................. 3-206
Table of Contents

Table 3.15-1 Criteria Air Pollutants Data Summary (North Main Street Monitoring Station) .......................................................... 3-217
Table 3.15-2 Ambient Air Quality Standards .................................................. 3-225
Table 3.15-3 Health Effects Summary of Criteria Air Pollutants ..................... 3-226
Table 3.15-4 South Coast Air Basin Attainment Status ................................... 3-228
Table 3.15-5 Peak-Hour Traffic Conditions along Local Roadway Segments for Existing Year, Opening Year, Detour Years, and Horizon Year .......... 3-230
Table 3.15-6 SCAQMD CEQA Air Quality Significance Thresholds ................. 3-233
Table 3.15-7 Estimate of Regional Direct Construction Emissions .................. 3-237
Table 3.15-8 Project Indirect Construction (Detour) Emissions during Detour Years (lbs/day) ........................................................................ 3-239
Table 3.15-9 Estimated Total Regional Construction Emissions of (lbs/day) ....... 3-240
Table 3.15-10 Estimate of Unmitigated Peak Daily Localized Construction Emissions – Direct Construction Emissions .................................. 3-242
Table 3.15-11 Intersections Impacted by Traffic Diversion during Construction Years .. 3-243
Table 3.15-12 Detour Years Localized Carbon Monoxide Concentrations (Indirect Construction Emissions) .................................................. 3-244
Table 3.15-13 Estimate of Unmitigated Local Construction Impacts ................. 3-245
Table 3.16-1 Noise Abatement Criteria .................................................................. 3-254
Table 3.16-2 City of Los Angeles Noise Standards ........................................... 3-256
Table 3.16-3 Land Use Compatibility Guidelines for Community Noise ............. 3-257
Table 3.16-4 Noise Measurement Results .......................................................... 3-261
Table 3.16-5 Estimated Construction Noise Levels (in dBA) ......................... 3-263
Table 3.16-6 Traffic Noise Modeling Results – Year 2007 (Existing Condition) .... 3-267
Table 3.16-7 Traffic Noise Modeling Results – Year 2018 (Viaduct Open and Closed Conditions) .......................................................... 3-268
Table 3.16-8 Traffic Noise Modeling Results – Year 2038 (Viaduct Open) ......... 3-269
Table 3.16-9 Typical Construction Equipment Vibration Levels ...................... 3-271
Table 3.19-1 Impacts to Los Angeles River under Various Bridge Concepts ....... 3-283
Table 3.22-1 Special-Status Species with Potential to Occur in the 6th Street Viaduct Project Area .......................................................... 3-291
Table 3.26-1 Active Bridge Projects under Bridge Improvement Program .......... 3-304

Table 4-1 Summary of Replacement Alternative Operational Regional Emissions (lbs/day) ........................................................................ 4-14
Table 4-2 Estimate of PM$_{10}$ and PM$_{2.5}$ along Local Roadways during Post-Construction Years (Opening and Horizon Years) .......... 4-16
Table of Contents

Table 4-3  Estimate of Priority MSAT Emissions for the Local Roadways within Project Study Area (grams/day) ........................................... 4-18
Table 4-4  Estimate of Mitigated Regional Construction Emissions (lbs/day) .................. 4-21
Table 4-5  Annual GHG Emissions Associated with Proposed Alternative 3 Implementation ........................................................................ 4-31

Table 5-1  Participating Agency List ........................................................................ 5-8
Table 5-2  Comments/Questions and Responses Provided at the Public Hearings....... 5-13
Table 5-3  Summary of Written Comments Received on Draft EIR/EIS ..................... 5-17
This page intentionally left blank.
Summary

Project Overview
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 viaduct was determined eligible for listing in the National Register of Historic Places (NRHP) for its association with the Los Angeles River bridge program and its extraordinary Streamline Moderne steel and reinforced concrete design. Because the viaduct has been determined eligible for listing in the NRHP, it is also listed in the California Register of Historical Resources (CRHR). It was also determined eligible as one of a thematic group of 118 “Historic Highway Arch and Other Bridges in California” as part of the Caltrans Statewide Bridge Inventory in 1987. In addition, the 6th Street Viaduct is designated as City of Los Angeles Historic-Cultural Monument (HCM) #905. Based on its NRHP eligibility, the 6th Street Viaduct is also a historic site protected under Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code [U.S.C.] 303. The 6th Street Viaduct was also determined to be one of 29 City of Los Angeles “monumental bridges” based on an update to the 1987 statewide historic bridge survey commissioned by Caltrans in 2004 (City of Los Angeles Monumental Bridges, 1990-1950, prepared by JRP Historic Consulting). However, the study concluded that the bridges in Los Angeles that are significant for their association with the Bureau of Engineering’s bridge program in the early to mid-twentieth century do not constitute a historic district, as defined by National Park Service guidelines for applying the NRHP criteria.

Caltrans submitted the study findings to the State Historic Preservation Officer (SHPO).

The 6th Street Viaduct Seismic Improvement Project is included in the Final 2008 Regional Transportation Improvement Program (RTIP) and Federal Transportation Improvement Program (FTIP), in which the project is programmed for $245 million over a 6-year period, Fiscal Years 2008/9 to 2013/14. The RTIP is currently being amended to include the total project cost of $401.2 million. A Financial Plan has been prepared in accordance with the Federal Highway Administration (FHWA) guidance to identify additional funding sources to undertake the project.

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 project is subject to both federal and state environmental review requirements because the City proposes the use of federal funds managed by the Federal Highway Administration (FHWA). This 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 U.S.C. 327(a)(2)(A). The City is responsible for compliance with CEQA.

The Draft EIR/EIS was circulated for public review and comment between June 16, 2009 and August 24, 2009. The Notice of Availability (NOA) was published in the Los Angeles Times on June 11, 2009, and was filed with the County Clerk on June 18, 2009, and the Federal Register on July 10, 2009 (Volume 73, Number 131 EIS No. 20090226). Three public hearings were conducted. During the 70-day public review period ending August 24, 2009, 26 written comment letters and e-mails pertaining to the Draft EIR/EIS were received. Responses to all written comments are included in Appendix M of this Final EIR/EIS.

**Purpose and Need**

The 3,500–foot (ft) long 6th Street Viaduct was constructed in 1932 using state-of-the-art concrete technology at that time. Over the last 75 years, concrete elements of the viaduct have cracked and deteriorated as a result of an internal chemical reaction called Alkali Silica Reaction (ASR), which is caused by the reactive aggregate used in the concrete. Because of this ongoing and irreversible chemical action, the 6th Street Viaduct’s concrete has lost significant strength, and the structure is subject to failure under predictable seismic energy releases. The viaduct also has design deficiencies consisting of cracking and
condition of deck, superstructure, and superstructure elements; inadequate roadway width; out of specification bridge and approach railing, and approach rail ends; poor roadway alignment; and out-of-specification geometric and seismic detail design.

As an outcome of these needs, the purpose of the project is threefold:

- Preserve 6th Street as a viable east-west link between Boyle Heights and Downtown Los Angeles
- Reduce vulnerability of the 6th Street Viaduct in major earthquake events
- Resolve design deficiencies of the 6th Street Viaduct

**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 sidewalk widths and railings, and the lack of shoulders, would also not be corrected under this alternative.

The Final EIR/EIS also addresses the impacts of no action in the event the viaduct was rendered unserviceable due to advanced ASR deterioration or a major seismic event in the future, neither of which can be predicted. Under such an event, the City would seek emergency funding sources to replace it. It is estimated that the time to identify funding, complete design, acquire right-of-way (ROW), and construct a new viaduct would range between 5 and 7 years from the time it was placed out of service.

**Alternative 2 – Viaduct Retrofit**

This alternative would reduce vulnerability of the 6th Street Viaduct, seismically retrofitting the viaduct’s columns by encasing them with heavy steel, and constructing infill walls between selected columns. In addition, new foundations, grade beams, retrofitting of bent caps, and

---

1 A magnitude of 7.3 for this structure.
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 major earthquake (design seismic event). Based on the cost estimates of $197 million, Alternative 2 is a fully funded alternative².

**Alternative 3 – Viaduct Replacement**
This alternative is comprised of two elements: alignment and bridge type (or concept). The replacement alternative would construct a new viaduct along one of three alignments under consideration, including 3A, 3B, and 3C. The main-span bridge type would be selected from one of five concepts under study, including (1) Main Span 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 with Concept 4A as one of the design expression examples; and (5) Extradosed Concrete Box Girder with Single Pylon. The new structure would have a cross section that meets modified secondary highway standards as required by LADOT. The new roadway would have a maximum width of 70 ft (curb-to-curb) within the City ROW and 74 ft (curb-to-curb) on the State ROW. The proposed cross section would also allow for sidewalks with a maximum width of 10 ft within City ROW and transition to 8 ft within the State ROW. Bridge rails located on the outside edges of the structure would have a maximum width of 2 ft. The typical width to the outside of the bridge rails would therefore be 94 ft maximum for spans that are not supported on cables. The cross section within Caltrans’ ROW (over US 101) would be slightly different. In this section, the viaduct roadway would be 74 ft, curb to curb, consisting of two 12-ft-wide lanes in each direction, a 10-ft-wide median, and 8-ft-wide shoulders. The proposed cross section also allows for 8-ft-wide sidewalks on both sides of the structure.

**Project Funding**
The Project Financial Plan for the 6th Street Viaduct Seismic Improvement Project has been prepared, in accordance with the FHWA guidance, using the average cost of $401.2 million to cover the costs of preliminary design and preparation of the Project Report and EIR/EIS; preparation of plans, specifications, and estimate, as well as ROW and construction costs. The funding sources identified in the Financial Plan include Federal Highway Bridge Program (HBP) funds of $364.1 million, State Proposition 1B “Local Bridge Seismic Retrofit Account” (LBSRA) of $29.7 million, other State Funds of $0.2 million, City Matching Funds of $5.2 million, and Bond Financing (HBP/Prop 1B) Funds to pay for the interest costs as a result of the needed cash flow. The City will receive Caltrans programming approval for the state and federal

---

² 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).
funds listed above once Caltrans approves the project’s Financial Plan, prior to the EIR/EIS Record of Decision (ROD).

Identification of Preferred Alternative
After comparing and weighing the benefits and impacts of all of the feasible alternatives, as summarized in Summary Table ES-1 and described in detail in Chapter 3, the Project Development Team (PDT) has identified the Replacement Alternative (Alternative 3) with Alignment 3B and the design principle of Bridge Concept 4, with Concept 4A as one of the design expression examples, as the Preferred Alternative for the 6th Street Viaduct Seismic Improvement Project. The City and Caltrans have made the final determination of the project’s impact on the environment based on the comments and concerns expressed during the public review period and the results of the engineering and environmental technical analysis. The Preferred Alternative would attain the purpose of the project.

![Existing Viaduct Proposed Alignment 3B NO SCALE](image)

The City will go through a process to refine the final design for the bridge replacement to ensure that both an architecturally distinctive and cost-effective design expression is selected for construction. Design details of the preferred cable-supported bridge type could evolve into different engineering and architectural expressions of this concept, in terms of tower and cable connection form for example, in addition to aesthetic elements of colors, textures, lighting, railings, and gateway elements.
Section 4(f) Evaluation
Both build alternatives of the 6th Street Viaduct Seismic Improvement Project involve the use of one Section 4(f) property, the NRHP-eligible 6th Street Viaduct. A Section 4(f) Evaluation was prepared to identify the Section 4(f) resources in the project area, describe the nature and extent of the use of these properties, evaluate alternatives that would avoid the use of Section 4(f) resources, and describe measures to minimize harm to the affected resources.

To meet the overall project purposes of preserving the 6th Street Viaduct as a viable east-west link between Boyle Heights and Downtown Los Angeles, reducing vulnerability of the 6th Street Viaduct in major earthquake events, and resolving design deficiencies of the viaduct, this historic viaduct requires retrofitting or replacing. Only two alternatives considered would completely avoid the Section 4(f) property: the No Build Alternative and Replacement Alternative (Alignment Alternatives 8 and 9 out of the 10 alignments studied during the initial screening phase, as shown on Figure 2-16, in Section 2.5 of this Final EIR/EIS). The No Build Alternative does not meet the project purpose and need. Alignment Alternatives 8 and 9 are not prudent avoidance alternatives because they would result in substantially greater ROW impacts, require major alteration of the viaduct adversely affecting the resource while not alleviating the seismic safety problem because the ASR would continue, and the construction costs of these alternatives would be so high as to be considered of an extraordinary magnitude. Therefore, it is not prudent and feasible to avoid the Section 4(f) property with any of the build alternatives that meet the purpose and need of the project, including those alternatives already eliminated from further consideration.

Specific measures to minimize harm to the historic property, as well as agency consultation requirements, are stipulated in the Memorandum of Agreement (MOA) developed for this project under Section 106 of the National Historic Preservation Act (NHPA). The MOA was executed by Caltrans and the SHPO, with the City of Los Angeles as a concurring party, on May 10, 2010.

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 S-1.

Areas of Public 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 NHPA. Alternative 2 proposes work that would alter the character-defining features of the viaduct, potentially making the property ineligible for inclusion in the NRHP by compromising the historic integrity of the 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, designated as City of Los Angeles HCM #905, 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 usable space. 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. Six bridge types have been evaluated by the PDT 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:

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Army Corps of Engineers (USACE)</td>
<td>Section 404– Nationwide Permit for possible discharge of dredged or fill material into the Los Angeles River</td>
</tr>
<tr>
<td>State Historic Preservation Officer (SHPO)</td>
<td>Section 106 consultation and agreement document to resolve the adverse effect to the historic 6th Street Viaduct</td>
</tr>
<tr>
<td>Los Angeles Regional Water Quality Control Board (RWQCB)</td>
<td>Construction General Permit and Project Registration Documents.</td>
</tr>
<tr>
<td>RWQCB</td>
<td>National Pollutant Discharge Elimination System (NPDES) Permit</td>
</tr>
<tr>
<td>RWQCB</td>
<td>Groundwater Dewatering Permit for discharges of groundwater from construction and project dewatering to surface waters in the watersheds of Los Angeles</td>
</tr>
<tr>
<td>California Department of Fish and Game (CDFG)</td>
<td>Section 1602 Agreement for Streambed Alteration</td>
</tr>
<tr>
<td>California Public Utilities Commission (PUC) Rail Crossing Engineering Section (RCES)</td>
<td>Rail crossing construction or alteration authorization</td>
</tr>
<tr>
<td>Caltrans</td>
<td>Encroachment Permit</td>
</tr>
<tr>
<td>All railroad agencies owning and operating railroad tracks along both sides of the Los Angeles River</td>
<td>Railroad Maintenance Agreement for work within railroad ROW</td>
</tr>
</tbody>
</table>

CEQA EIR Certification and NEPA EIS Record of Decision

After the public circulation period, all comments were considered, and the City of Los Angeles and Caltrans have identified Alternative 3 – Alignment B with the principles of Bridge Concept 4 (cable-supported) – as the preferred alternative. Prior to approving the proposed project, the City Council must certify the EIR and adopt the mitigation monitoring and reporting plan and a statement of overriding considerations. With respect to NEPA, Caltrans, as assigned by FHWA, will document and explain its decision regarding the preferred alternative, project impacts, and mitigation measures in a ROD in accordance with NEPA.
### Table S-1
**Summary of Environmental Evaluation**

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
<th>Alternative 3 Replacement Alignment 3B</th>
<th>Alternative 3 Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Use and Planning</td>
<td>Would not provide the City with an opportunity to designate 6th Street Viaduct as a bikeway. If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3, but the period the viaduct would be out of service for replacement could be up to 7 years.</td>
<td>• Up to 19 businesses would be affected, 2 of which would be subject to relocation. These right-of-way (ROW) displacements would be inconsistent with the City of Los Angeles Industrial Land Use Policy objective of preserving the industrial area and employment. In addition, the ROW displacement would be inconsistent with the objective of the two redevelopment projects administered by the Community Redevelopment Agency of the City of Los Angeles. • Would not provide the City with an opportunity to designate 6th Street along the 6th Street Viaduct as a bikeway. • 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. • Would provide less redevelopment opportunity for the area in the immediate vicinity of the viaduct.</td>
<td>• Up to 30 businesses would be affected, 11 of which would be subject to relocation. These businesses are located in the designated “industrial preservation and employment protection zone.” The proposed action would be inconsistent with the City of Los Angeles Industrial Land Use Policy objective of preserving the industrial area and employment. In addition, the ROW displacement would be inconsistent with the objective of the two redevelopment projects administered by the Community Redevelopment Agency of the City of Los Angeles. • 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 unused portion of the acquired land in the immediate vicinity of the viaduct. • Impact level would be the same for any bridge concept.</td>
<td>• Up to 33 businesses would be affected, 11 of which would be subject to relocation under Alignment 3B. These businesses are located in the designated “industrial preservation and employment protection zone.” Inconsistent with the City of Los Angeles Industrial Land Use Policy objective of preserving the industrial area and employment. In addition, the ROW displacement would be inconsistent with the objective of the two redevelopment projects administered by the Community Redevelopment Agency of the City of Los Angeles. • 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 unused portion of the acquired land in the immediate vicinity of the viaduct. • Impact level would be the same for any bridge concept.</td>
<td>• Up to 30 businesses would be affected, 8 of which would be subject to relocation. These businesses are located in the designated “industrial preservation and employment protection zone.” Inconsistent with the City of Los Angeles Industrial Land Use Policy objective of preserving the industrial area and employment. In addition, the ROW displacement would be inconsistent with the objective of the two redevelopment projects administered by the Community Redevelopment Agency of the City of Los Angeles. • 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 unused portion of the acquired land in the immediate vicinity of the viaduct. • Impact level would be the same for any bridge concept.</td>
</tr>
</tbody>
</table>
### Table S-1
Summary of Environmental Evaluation

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
<th>Alternative 3 Replacement Alignment 3B</th>
<th>Alternative 3 Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Character and Cohesion</td>
<td>None as long as viaduct remains in service.</td>
<td>• Community disconnection could occur on a temporary basis during construction.</td>
<td>• Community disconnection could occur on a temporary basis during construction.</td>
<td>Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Loss of historic resource and community landmark to which many residents are attached.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Based on some input from the public, Bridge Concept 1 (main span replication) would likely be</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>perceived as keeping the old community icon, whereas Concepts 4, 4A, and 5 (modern cable-supported</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>bridge) would be viewed as a new community icon.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relocation and Business</td>
<td>None as long as viaduct remains in service.</td>
<td>• Construction would require a partial lane closure on the 6th Street Viaduct. Temporary</td>
<td>• The viaduct and all acquired buildings would be first removed. Roadway blockage to the remaining</td>
<td>• The viaduct and all acquired buildings would be first removed. Roadway blockage to the remaining</td>
<td>• Although many buildings adjacent to the bridge would not have to relocate, roadway blockage to these</td>
</tr>
<tr>
<td>Disruption</td>
<td></td>
<td>lane closure and construction due to the required partial traffic lane closure and construction</td>
<td>businesses would temporarily occur during the demolition and construction activities.</td>
<td>businesses would temporarily occur during the demolition and construction activities.</td>
<td>businesses would cause operational disruption during the 4-year demolition and construction period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>equipment movement.</td>
<td>• Up to 30 businesses would be affected, 11 of which would be subject to relocation.</td>
<td>• Up to 33 businesses would be affected, 11 of which would be subject to relocation under Alignment 3B.</td>
<td>• Up to 30 businesses would be affected, 8 of which would be subject to relocation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Approximate 200 employees may experience temporary job loss. Long-term job loss is not</td>
<td>• Approximately 200 employees may experience temporary job loss. Long-term job loss is not</td>
<td>• Approximately 200 employees may experience temporary job loss. Long-term job loss is not</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>anticipated because most of the affected businesses have expressed interest in staying in Downtown</td>
<td>anticipated because most of the affected businesses have expressed interest in staying in Downtown</td>
<td>anticipated because most of the affected businesses have expressed interest in staying in Downtown</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Los Angeles.</td>
<td>Los Angeles.</td>
<td>Los Angeles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Impact level would be the same for any bridge concept.</td>
<td>• Impact level would be the same for any bridge concept.</td>
<td>• Impact level would be the same for any bridge concept.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

October 2011  xxii  6th Street Viaduct Seismic Improvement Project
### Table S-1
**Summary of Environmental Evaluation**

<table>
<thead>
<tr>
<th><strong>Area of Impact</strong></th>
<th><strong>Alternative 1</strong> No Action</th>
<th><strong>Alternative 2</strong> Retrofit</th>
<th><strong>Alternative 3</strong> Replacement Alignment 3A</th>
<th><strong>Alternative 3</strong> Replacement Alignment 3B</th>
<th><strong>Alternative 3</strong> Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Justice</td>
<td>None as long as viaduct remains in service. If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3, but the period the viaduct would be out of service for replacement could be up to 7 years.</td>
<td>• 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.</td>
<td>• 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. • 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. • Impact level would be the same for any bridge concept.</td>
<td>Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
</tr>
<tr>
<td>Utilities and Emergency Services</td>
<td>None as long as viaduct remains in service. If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3, but the period the viaduct would be out of service for replacement could be up to 7 years.</td>
<td>• 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.</td>
<td>• Temporary or permanent relocation of some utility services would be required. • Disruption to railroad operations during construction. • 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. • Impact level would be the same for any bridge concept.</td>
<td>Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
</tr>
</tbody>
</table>
### Table S-1

#### Summary of Environmental Evaluation

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic, Transportation,</td>
<td>None as long as viaduct remains in service.</td>
<td>Construction would cause localized, temporary traffic disruption, sidewalk blockage, and parking space obstruction.</td>
<td>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. Temporary access restriction would occur around the construction zone. 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.</td>
</tr>
<tr>
<td>Pedestrian Facilities</td>
<td>If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3, but the period the viaduct would be out of service for replacement could be up to 7 years.</td>
<td>Possible loss of some currently public parking spaces underneath and along the local streets near the viaduct, creating inconvenience to area residents and businesses.</td>
<td>Loss of public parking spaces underneath and along the local streets near the viaduct would create inconvenience to area residents and businesses.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minor disruption to public transit operations due to possible partial lane closures on the 6th Street Viaduct.</td>
<td>Travel delays of 5 to 10 minutes on public transit would occur from traffic detours.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Impact level would be the same for any bridge concept.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual/Aesthetic</td>
<td>None as long as viaduct remains in service.</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3.</td>
<td></td>
<td>new</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual/Aesthetic</td>
<td>None as long as viaduct remains in service.</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3.</td>
<td></td>
<td>new</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual/Aesthetic</td>
<td>None as long as viaduct remains in service.</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3.</td>
<td></td>
<td>new</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual/Aesthetic</td>
<td>None as long as viaduct remains in service.</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3.</td>
<td></td>
<td>new</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual/Aesthetic</td>
<td>None as long as viaduct remains in service.</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3.</td>
<td></td>
<td>new</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual/Aesthetic</td>
<td>None as long as viaduct remains in service.</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3.</td>
<td></td>
<td>new</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual/Aesthetic</td>
<td>None as long as viaduct remains in service.</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3.</td>
<td></td>
<td>new</td>
</tr>
</tbody>
</table>
### Summary of Environmental Evaluation

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
<th>Alternative 3 Replacement Alignment 3B</th>
<th>Alternative 3 Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Resources</td>
<td>None as long as viaduct remains in service. If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3, but the period the viaduct would be out of service for replacement could be up to 7 years.</td>
<td>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.</td>
<td>The project area has the potential for buried archaeological materials to be encountered during ground disturbance.</td>
<td>Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
</tr>
<tr>
<td>Hydrology and Floodplains</td>
<td>None as long as viaduct remains in service. If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts</td>
<td>None</td>
<td>Construction of Bridge Concept 1 would adversely affect the river hydraulics upstream of the viaduct due to the larger pier size. Construction of other bridge types (2, 3, 4, 4A, 5) would have either negligible or beneficial impacts to the river hydraulics.</td>
<td>Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
</tr>
<tr>
<td>Area of Impact</td>
<td>Alternative 1: No Action</td>
<td>Alternative 2: Retrofit</td>
<td>Alternative 3 Replacement Alignment 3A</td>
<td>Alternative 3 Replacement Alignment 3B</td>
<td>Alternative 3 Replacement Alignment 3C</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------</td>
</tr>
</tbody>
</table>
|                                | under Alternative 3, but the period the viaduct would be out of service for replacement could be up to 7 years. | • 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. | • Stormwater from the new viaduct would be treated before discharging to the Los Angeles River.  
• Implementation of Bridge Concept 1 would result in a net increase of the placement of fill area in the Los Angeles River.  
Other bridge concepts would result in a net decrease of the placement of fill area in the river. | Same as Alignment 3A. | Same as Alignment 3A. |
| Water Quality and Stormwater Runoff | All stormwater runoff from the viaduct would continue to be discharged to the Los Angeles River without prior treatment.  
If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3, but the period the viaduct would be out of service for replacement could be up to 7 years. | Same as Alignment 3A. | Same as Alignment 3A. |  |
| Geology, Soils, Seismicity    | None, but the viaduct would continue to deteriorate from Alkali Silica Reaction (ASR) weakening the concrete elements.  
If the viaduct was determined to be unserviceable,  
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 was determined to be unserviceable. | • 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.  
• Impact level would be the same for any bridge concept. | Same as Alignment 3A. | Same as Alignment 3A. |
### Table S-1
#### Summary of Environmental Evaluation

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
<th>Alternative 3 Replacement Alignment 3B</th>
<th>Alternative 3 Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paleontology</strong></td>
<td>None as long as viaduct remains in service. If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3, but the period the viaduct would be out of service for replacement could be up to 7 years.</td>
<td>collapses during a major earthquake or the ASR deterioration renders it unsafe.</td>
<td>Same as Alternative 2 for all bridge concepts</td>
<td>Same as Alternative 2.</td>
<td>Same as Alternative 2.</td>
</tr>
<tr>
<td><strong>Hazardous Waste/Materials</strong></td>
<td>None as long as viaduct remains in service. If the viaduct was determined to be unserviceable, indirect impacts would be the same as direct impacts under Alternative 3, but the period the viaduct would be out of service for replacement could be up to 7 years.</td>
<td>• 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.</td>
<td>• 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.</td>
<td>Same as Alternative 2.</td>
<td>Same as Alternative 2.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Bridge elements and buildings to be demolished may have ACM in the form of coatings, insulation, and/or expansion joint</td>
<td>• Bridge elements and buildings to be demolished may have ACM in the form of coatings, insulation, and/or expansion joint</td>
<td>Same as Alternative 2.</td>
<td>Same as Alternative 2.</td>
</tr>
</tbody>
</table>
### Table S-1

#### Summary of Environmental Evaluation

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement 3A</th>
<th>Alternative 3 Replacement Alignment 3B</th>
<th>Alternative 3 Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement could be up to 7 years.</td>
<td>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.</td>
<td>compounds and LBP coatings, which could cause health effects to workers.</td>
<td>Soils near US 101 may contain aerially deposited lead (ADL) generated by motor vehicle exhaust, which could cause health effects to workers.</td>
<td>Costs associated with hazardous waste remediation and disposal under Retrofit Alternative are estimated at $6 million.</td>
<td>Costs associated with hazardous waste remediation and disposal under Replacement Alternative are estimated at $4.7 million.</td>
</tr>
<tr>
<td>Air Quality</td>
<td>None as long as viaduct remains in service.</td>
<td>• 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\textsubscript{x}) would exceed the daily significance threshold set forth by South Coast Air Quality Management District (SCAQMD).</td>
<td>Same as Alternative 2 for every bridge concept.</td>
<td>Same as Alternative 2 for every bridge concept.</td>
<td>Same as Alternative 2 for every bridge concept.</td>
</tr>
<tr>
<td>Noise and Vibration</td>
<td>None as long as viaduct remains in service.</td>
<td>• 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</td>
<td>Same as Alternative 2 for every bridge concept.</td>
<td>Same as Alternative 2 for every bridge concept.</td>
<td>Same as Alternative 2 for every bridge concept.</td>
</tr>
</tbody>
</table>

October 2011

6th Street Viaduct Seismic Improvement Project
Table S-1
Summary of Environmental Evaluation

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
<th>Alternative 3 Replacement Alignment 3B</th>
<th>Alternative 3 Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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.</td>
<td>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. Cliff swallows or roosting bats may</td>
<td>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</td>
<td>Same as Alignment 3A for every bridge concept.</td>
<td>Same as Alignment 3A for every bridge concept.</td>
</tr>
<tr>
<td></td>
<td>would be the same as direct impacts under Alternative 3, but the period the viaduct would be out of service for replacement could be up to 7 years.</td>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological Resources</td>
<td>None as long as viaduct remains in service. If the viaduct was determined to be unserviceable, indirect impacts would be the same</td>
<td>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. Cliff swallows or roosting bats may</td>
<td>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</td>
<td>same as alignment 3A for every bridge concept.</td>
<td>same as alignment 3A for every bridge concept.</td>
</tr>
</tbody>
</table>
### Table S-1
**Summary of Environmental Evaluation**

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 - No Action</th>
<th>Alternative 2 - Retrofit</th>
<th>Alternative 3 - Replacement Alignment 3A</th>
<th>Alternative 3 - Replacement Alignment 3B</th>
<th>Alternative 3 - Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>as direct impacts under Alternatives 2 and 3, but the period the viaduct would be out of service for replacement could be up to 7 years.</td>
<td>establish new nests or roosts under the viaduct deck. 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.</td>
<td>construction activities. Cliff swallows and roosting bats may establish new nests under the viaduct deck. 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.</td>
<td>• Impact level would be the same for any bridge concept.</td>
<td>Same as Alignment 3A for every bridge concept.</td>
</tr>
<tr>
<td>Cumulative Effect: Land Use</td>
<td>None as long as viaduct remains in service. Cumulative impacts in the event the viaduct was determined unserviceable cannot be accurately determined due the unpredictable timing. In addition, other projects contributing to cumulative effects might be different at the time of occurrence.</td>
<td>• No substantial cumulative effect with current land use policy. • Would potentially be in conflict with future High-Speed Rail Project and the Westside Subway Extension Project.</td>
<td>• More business relocation could occur within the vicinity of the proposed project because there are foreseeable projects proposed to be constructed within the same locality of the proposed project.</td>
<td>Same as Alignment 3A for every bridge concept.</td>
<td>Same as Alignment 3A for every bridge concept.</td>
</tr>
<tr>
<td>Cumulative Effect: Community Impacts</td>
<td>None as long as viaduct remains in service. Cumulative impacts in the event the</td>
<td>• Cumulative community impacts could occur to area residents and businesses because there are foreseeable projects scheduled to be constructed in nearby</td>
<td>• Cumulative community impacts could occur to area residents and businesses because there are foreseeable projects scheduled to be constructed in nearby vicinity during the same period as the</td>
<td>Same as Alignment 3A for every bridge concept.</td>
<td>Same as Alignment 3A for every bridge concept.</td>
</tr>
</tbody>
</table>
### Table S-1
Summary of Environmental Evaluation

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
<th>Alternative 3 Replacement Alignment 3B</th>
<th>Alternative 3 Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td>viaduct was determined unserviceable cannot be accurately determined due the unpredictable timing. In addition, other projects contributing to cumulative effects might be different at the time of occurrence.</td>
<td>vicinity during the same period as the proposed project. • Low-income and/or minority populations living close to the viaduct would be subject to disproportionately higher impacts from concurrent construction activities. • More business relocations within the project vicinity could occur with implementation of other foreseeable projects; thus, impacting local businesses on a cumulative basis. • Impact level would be the same for any bridge concept.</td>
<td>proposed project. • Cumulative traffic impacts could occur during the 2.5-year project construction if other projects within the same locality are scheduled for construction during the same timeframe and utilize the same hauling routes.</td>
<td>Cumulative traffic impacts would be larger than Alternative 2 due to the required closure of the 6th Street Viaduct during the 4-year construction period. Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
</tr>
<tr>
<td>Cumulative Effect: Traffic and Circulation</td>
<td>None as long as viaduct remains in service. Cumulative impacts in the event the viaduct was determined unserviceable cannot be accurately determined due the unpredictable timing. In addition, other projects contributing to cumulative effects might be different at the time of occurrence.</td>
<td>• Alteration of the historic fabric of the 6th Street Viaduct would not result in</td>
<td>• The new viaduct could have iconic value to the community and City. Given the highly urban Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
</tr>
<tr>
<td>Cumulative Effect: Visual and</td>
<td>None as long as viaduct remains in service.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Table S-1
### Summary of Environmental Evaluation

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
<th>Alternative 3 Replacement Alignment 3B</th>
<th>Alternative 3 Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetics</td>
<td>Cumulative impacts in the event the viaduct was determined unserviceable cannot be accurately determined due to the unpredictable timing. In addition, other projects contributing to cumulative effects might be different at the time of occurrence.</td>
<td>Cumulative impacts to visual and aesthetic resources within the landscape units surrounding the 6th Street Viaduct.</td>
<td>and industrial nature of the development within and adjacent to the project area, implementation of the future foreseeable projects along with the Replacement Alternative for this project would not appreciably change the existing character of the area.</td>
<td>Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
</tr>
<tr>
<td>Cumulative Effect: Cultural Resources</td>
<td>None as long as viaduct remains in service. Cumulative impacts in the event the viaduct was determined unserviceable cannot be accurately determined due to the unpredictable timing. In addition, other projects contributing to cumulative effects might be different at the time of occurrence.</td>
<td>• Implementation of the Retrofit Alternative would not contribute to cumulative effects on archeological resources within the APE or citywide. • Alteration of the historic fabric of the 6th Street Viaduct under Retrofit Alternative would not constitute cumulative impacts to historic resources within the APE or citywide when considered together with other foreseeable projects. • The 6th Street Viaduct is designated City of Los Angeles HCM #905, as one of 11 historic Los Angeles River bridges (HCM #900 – #910). The 6th Street Viaduct contributes to City historic</td>
<td>• Implementation of the Replacement Alternative would not contribute to cumulative effects on archeological resources within the APE or citywide. • Cumulative impacts on the loss of historic resources within the APE or Citywide cannot be determined since there is no known information about the loss of other historic resources as a result of other foreseeable projects. • Removal of the 6th Street Viaduct under the Replacement Alternative would impact the City’s historic-cultural monument bridges on a cumulative basis.</td>
<td>Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
</tr>
</tbody>
</table>
### Table S-1
Summary of Environmental Evaluation

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Retrofit</th>
<th>Alternative 3 Replacement Alignment 3A</th>
<th>Alternative 3 Replacement Alignment 3B</th>
<th>Alternative 3 Replacement Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative Effect: Air Quality</td>
<td>None as long as viaduct remains in service. Cumulative impacts in the event the viaduct was determined unserviceable cannot be accurately determined due the unpredictable timing. In addition, other projects contributing to cumulative effects might be different at the time of occurrence.</td>
<td>• Cumulative air pollutant emissions could occur if several projects within the vicinity of the viaduct are under construction at the same time during the 2.5-year construction duration.</td>
<td>• Cumulative air pollutant emissions could occur because there are foreseeable projects scheduled to be constructed in the vicinity during the same period as the proposed project. Impact level would be the same for any bridge concept.</td>
<td>Same as Alignment 3A for every bridge concept.</td>
<td>Same as Alignment 3A for every bridge concept.</td>
</tr>
<tr>
<td>Section 4(f) Resources</td>
<td>None</td>
<td>• Would have a permanent, adverse impact on historic 6th Street Viaduct.</td>
<td>• Would have a permanent, adverse impact on historic 6th Street Viaduct.</td>
<td>Same as Alignment 3A.</td>
<td>Same as Alignment 3A.</td>
</tr>
</tbody>
</table>
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. Several measures outlined in this document are the requirements of applicable laws, regulations, ordinances, and formally adopted City standards (e.g., Los Angeles Municipal Code and Bureau of Engineering Standard Plans), which govern the City and its contractors. Moreover, many measures are part of the requirements of the uniform practices established by the Southern California Chapter of the American Public Works Association (e.g., Standard Specifications for Public Works Construction and the Work Area Traffic Control Handbook) (WATCH Manual) as specifically adopted by the City of Los Angeles (e.g., The City of Los Angeles Department of Public Works Additions and Amendments to the Standard Specifications For Public Works Construction [aka "The Brown Book," formerly Standard Plan S-610]).

Table S-2 summarizes proposed specific mitigation measures to minimize impacts under Alternatives 2 and 3 implementation.

Table S-2
Proposed Specific Mitigation Measures

<table>
<thead>
<tr>
<th>Environmental Factor</th>
<th>Alternative 2 – Retrofit</th>
<th>Alternative 3 – Replacement</th>
</tr>
</thead>
</table>
| Community Impacts and Environmental Justice | • Develop a construction staging plan and Traffic Management Plan (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 shall 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.  
• Inform key event organizers in the Boyle Heights and Downtown Arts District communities of the construction schedule to avoid conflict on the use of areas near the 6th Street Viaduct for any festive events.  
• If homeless people were found within the construction site, the Los Angeles Homeless Services Authority (LAHSA) will be contacted to provide services to any homeless people found within the project area prior to construction. | • Conduct a public outreach program to keep residents, businesses, utility service providers, emergency service providers (including Fire and Police Departments) within the project area informed of the project construction schedule, demolition plan, material hauling plan, relocation plans and assistance programs, traffic-impacted areas, and the TMP and other relevant project information.  
• Require the construction contractor to submit the means and methods for demolition for LABOE review and approval. During the demolition period, construction inspectors shall ensure the contractors adhere to the approved plan.  
• Participate in ongoing meetings with the LABOE Los Angeles River Project Office (LARPO) to implement elements of the Los Angeles River Revitalization Master Plan (LARRMP) related to Greening Concept objectives to improve the area near the 6th Street Viaduct and provide potential future connections to the river corridor from the viaduct. In addition to LARPO, meetings will include, but are not limited to, the Planning Department, the Recreation and Parks Department, and the Community Redevelopment Agency.  
• Provide improvements to enhance the aesthetics and pedestrian safety of 11 out of 13 affected... |
### Table S-2
### Proposed Specific Mitigation Measures

<table>
<thead>
<tr>
<th>Environmental Factor</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Alternative 2 – Retrofit</strong></td>
</tr>
<tr>
<td></td>
<td>intersections along the proposed detour routes that could not be mitigated (see Traffic Impacts Section). Types of improvements would be developed with public input and using context-sensitive design solutions, and may include but not be limited to decorative crosswalk with community theme and raised median with hardscape treatment where space allows.</td>
</tr>
<tr>
<td></td>
<td>• 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 shall also identify and provide alternate traffic detour routes, construction materials hauling routes, bus stops, transit routes and operation hours, pedestrian and bicycle routes, and residential and commercial access routes to be used during the construction period.</td>
</tr>
<tr>
<td></td>
<td>• Inform key event organizers in the Boyle Heights and Downtown Arts District communities of the construction schedule to avoid conflict on the use of areas near 6th Street Viaduct for any festive events.</td>
</tr>
<tr>
<td></td>
<td>• If homeless people were found within the construction site, the LAHSA will be contacted to provide services to any homeless people found within the project area prior to construction.</td>
</tr>
<tr>
<td>Utilities and Emergency Services</td>
<td>• 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.</td>
</tr>
<tr>
<td></td>
<td>• Coordinate with emergency service providers throughout the construction period to notify them of any changes in construction schedule, roadway closures, and detour routes.</td>
</tr>
<tr>
<td></td>
<td>• Conduct a public outreach program to keep residents, businesses, utility service providers, emergency service providers (including Fire and Police Departments) within the project area informed of the project construction schedule, demolition plan, material hauling plan, relocation plans and assistance programs, traffic-impacted areas, and the TMP and other relevant project information.</td>
</tr>
<tr>
<td>Traffic, Transportation and Pedestrian Facilities</td>
<td>No specific mitigation is required.</td>
</tr>
<tr>
<td></td>
<td>• Require the construction contractor to install new traffic signals at the intersection of 4th Street and US 101 SB On- and Off-Ramps, and connect to Los Angeles City ATSAC system.</td>
</tr>
<tr>
<td></td>
<td>• Require the construction contractor to restripe to add an eastbound right-turn lane at the intersection of 4th Street and Soto Street.</td>
</tr>
<tr>
<td>Aesthetics and Visual Resources</td>
<td>None is required.</td>
</tr>
<tr>
<td></td>
<td>• Establish an Aesthetics Advisory Committee (AAC) to provide input and advice throughout the design period of the project, including input on bridge aesthetics for the new structure and associated roadways under improvement within the scope of this project. The AAC will participate in design review meetings and provide input on selected...</td>
</tr>
</tbody>
</table>
Table S-2
Proposed Specific Mitigation Measures

<table>
<thead>
<tr>
<th>Environmental Factor</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Alternative 2 – Retrofit</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Alternative 3 – Replacement</strong></td>
</tr>
<tr>
<td>Cultural/ Historical Resources</td>
<td>design elements including, but not limited to, colors, textures, lighting, railings, and community/City gateway monumental elements.</td>
</tr>
<tr>
<td></td>
<td>• Participate in ongoing meetings with the LABOE and LARPO to implement elements of the LARRMP related to Greening Concept objectives to improve the area near the 6th Street Viaduct and provide potential future connections to the river corridor from the viaduct. In addition to LARPO, meetings will include, but are not limited to, the Planning Department, the Recreation and Parks Department, and the Community Redevelopment Agency.</td>
</tr>
<tr>
<td></td>
<td>• Provide improvements to enhance the aesthetics and pedestrian safety of 11 out of 13 affected intersections along the proposed detour routes that could not be mitigated (see Traffic Impacts Section). Types of improvements would be developed with public input and using context-sensitive design solutions, and may include but not be limited to decorative crosswalk with community theme and raised median with hardscape treatment where space allows.</td>
</tr>
<tr>
<td></td>
<td>• Prior to the start of any work that could adversely affect any characteristics that qualify the 6th Street Viaduct (Bridge No. 53C-1880 and 53-0595) as a historic property, contact the NPS in Oakland, California, to determine if additional recordation is required for the historic property beyond that provided in “Historic American Engineering Record, 6th Street Bridge, HAER No. CA-176,” dated May 7, 1996. The City shall provide NPS 30 calendar days to respond to their additional recordation determination request. If additional documentation is required, the City shall ensure that the additional documentation is completed and accepted by NPS before the Viaduct is altered and/or demolished. The City shall prepare draft and final reports to be reviewed by NPS.</td>
</tr>
<tr>
<td></td>
<td>• Upon completion, copies of the documentation prescribed in the above measure, consisting of an acid-free xerographic copy of the report, prepared on standard 8.5-inch by 11-inch paper, shall be retained by Caltrans District 7, deposited in the Caltrans Transportation History Library in Sacramento, and offered by the City to, at a minimum, the Los Angeles Public Library, Los Angeles Conservancy, Los Angeles City Historical Society, Historical Society of Southern California, City of Los Angeles Office of Historical Resources, and the California Office of Historic Preservation.</td>
</tr>
<tr>
<td></td>
<td>• Work with the Los Angeles Public Library to place the historical information from the HABS/HAER report on a City Web site with a link to a public library Web site, such as the Los Angeles Public Library.</td>
</tr>
<tr>
<td></td>
<td>• Incorporate all applicable Secretary of Interior’s Standards for the Treatment of Historic Properties (36 CFR Part 68) into the design of retrofitting components.</td>
</tr>
<tr>
<td></td>
<td>• Prior to any viaduct alteration or construction activities, contact the National Park Service Western Region Office (NPS) in Oakland, California, to determine the degree of additional recordation required for the property beyond that provided in 1996 (Historic American Engineering Record [HAER] No. CA-176). Unless otherwise agreed to by the NPS HABS/HAER, Caltrans and the City shall ensure that all documentation is completed and accepted by HABS/HAER before the viaduct is altered or demolished.</td>
</tr>
<tr>
<td></td>
<td>• Install two new freestanding informative permanent metal plaques or signage at both ends of the bridge at public locations that provide a brief history of the bridge, its engineering features and characteristics, and the reasons it was replaced.</td>
</tr>
<tr>
<td></td>
<td>• Establish an Environmentally 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.</td>
</tr>
<tr>
<td></td>
<td>• Prior to the start of any work that could adversely affect any characteristics that qualify the 6th Street Viaduct (Bridge No. 53C-1880 and 53-0595) as a historic property, contact the NPS in Oakland, California, to determine if additional recordation is required for the historic property beyond that provided in “Historic American Engineering Record, 6th Street Bridge, HAER No. CA-176,” dated May 7, 1996. The City shall provide NPS 30 calendar days to respond to their additional recordation determination request. If additional documentation is required, the City shall ensure that the additional documentation is completed and accepted by NPS before the Viaduct is altered and/or demolished. The City shall prepare draft and final reports to be reviewed by NPS.</td>
</tr>
<tr>
<td></td>
<td>• Upon completion, copies of the documentation prescribed in the above measure, consisting of an acid-free xerographic copy of the report, prepared on standard 8.5-inch by 11-inch paper, shall be retained by Caltrans District 7, deposited in the Caltrans Transportation History Library in Sacramento, and offered by the City to, at a minimum, the Los Angeles Public Library, Los Angeles Conservancy, Los Angeles City Historical Society, Historical Society of Southern California, City of Los Angeles Office of Historical Resources, and the California Office of Historic Preservation.</td>
</tr>
<tr>
<td></td>
<td>• Work with the Los Angeles Public Library to place the historical information from the HABS/HAER report on a City Web site with a link to a public library Web site, such as the Los Angeles Public Library.</td>
</tr>
</tbody>
</table>
### Table S-2

**Proposed Specific Mitigation Measures**

<table>
<thead>
<tr>
<th>Environmental Factor</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alternative 2 – Retrofit</td>
</tr>
<tr>
<td></td>
<td>Library Web site, available to the public for a minimum period of 3 years. The information link will also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on their Web site.</td>
</tr>
<tr>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td></td>
<td>• 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 Caltrans (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. City shall post an electronic version of the booklet on a City Web site 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. City shall maintain the camera-ready master booklet and produce additional copies if there is demand.</td>
</tr>
<tr>
<td></td>
<td>• Install two new freestanding informative permanent metal plaques or signage at both ends of the bridge at public locations that provide a brief history of the bridge, its engineering features and characteristics, and the reasons it was replaced.</td>
</tr>
<tr>
<td></td>
<td>• Offer artifacts removed from the viaduct during demolition to local museums or other suitable facilities to be determined by the City. The accepting institutions shall arrange their own transportation to deliver the artifacts to designated locations.</td>
</tr>
<tr>
<td></td>
<td>• Establish an 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.</td>
</tr>
<tr>
<td>Environmental Factor</td>
<td>Mitigation Measures</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Paleontology</td>
<td>Retain a qualified paleontologist to develop and implement a Paleontological Monitoring Plan. Conduct paleontological monitoring onsite 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.</td>
</tr>
</tbody>
</table>
| Air Quality          | Implement fugitive dust source controls by requiring the contractor to:  
- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to active and inactive sites during workdays, weekends, holidays, and windy conditions.  
- Install wind fencing and phase grading operations, where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.  
- Implement mobile and stationary source controls by requiring the contractor to:  
  - Reduce use, trips, and unnecessary idling from heavy equipment.  
  - Maintain and tune engines per manufacturer’s specifications to perform at U.S. Environmental Protection Agency (EPA) certification levels, where applicable, and at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. | Same as Alternative 2. | |
| Air Quality          | - Prohibit any tampering with engines and adhere to manufacturer’s recommendation.  
- Lease new and clean equipment meeting the most stringent of applicable federal and state standards, if practicable.  
- Utilize EPA-registered particulate traps and other appropriate controls, where suitable, to reduce emissions of particulate matter and other pollutants at the construction site.  
- Implement administrative controls by requiring its staff to:  
  - Require the contractor to prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of | Same as Alternative 2. | |
### Table S-2
**Proposed Specific Mitigation Measures**

<table>
<thead>
<tr>
<th>Environmental Factor</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alternative 2 – Retrofit</td>
</tr>
<tr>
<td></td>
<td>equipment before groundbreaking. (Suitability of control devices is based on whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.)</td>
</tr>
<tr>
<td></td>
<td>– Where appropriate, use alternative fuels such as natural gas and electric.</td>
</tr>
<tr>
<td></td>
<td>Develop a construction traffic and parking management plan that minimizes interference and maintains traffic flow as part of the TMP.</td>
</tr>
<tr>
<td>Biological Resources</td>
<td>• 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 active nests of migratory species occur within the construction area, then a temporary exclusion fence 50 ft in diameter shall be assembled around the nest. The biologist shall then monitor the site of active nests during the construction activities. Once the biologist determines that chicks have fledged or parents have abandoned the nest, the temporary fence can be removed and construction in such areas can proceed. If bats are found, bat proofing (exclusion) should be conducted outside of the breeding season (October 30 through March 1) after juvenile bats have learned to fly; exclusion should be staged to ensure that roosting sites in areas not currently under construction would be available at all times during the project to minimize the potential effects on bats.</td>
</tr>
<tr>
<td>Cumulative Effects</td>
<td>With implementation of the proposed mitigation measures under each individual resource; no additional mitigation measures would be required.</td>
</tr>
</tbody>
</table>
This page intentionally left blank.
Chapter 1
Proposed Project
Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) and the City of Los Angeles (City) propose to undertake the improvement of the 6th Street Viaduct over the Los Angeles River (Bridge No. 53C-1880) and the 6th Street Overcrossing, which includes the US 101 Hollywood Freeway (Bridge No. 53-0595). The structure is located in a highly urbanized area just east of Downtown Los Angeles in the County of Los Angeles, California, as shown in Figure 1-1.

On September 11, 2007, Caltrans entered into the cooperative agreement, in which the City of Los Angeles is designated as the California Environmental Quality Act (CEQA) lead agency for the whole project, which covers both the City (3,264 feet [ft]) and state (235 ft) portion of the viaduct. The City has accepted CEQA responsibility.

This Final Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) has been prepared in accordance with the Guidelines for CEQA (California Code of Regulations, Title 14 Sections 15000-15387), the Council on Environmental Quality (CEQ) Regulations implementing the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] 1500-1508), and the Federal Highway Administration (FHWA) Environmental Regulations (23 CFR 771) to inform the public and decision makers of the environmental effects of the 6th Street Viaduct Seismic Improvement Project. This document has been prepared jointly by Caltrans, the federal lead agency for NEPA, functioning as a designee of FHWA, and by the City of Los Angeles, who is the lead agency for CEQA.

Caltrans first published a Notice of Intent (NOI), in accordance with NEPA, in the Federal Register, and the City simultaneously published a Notice of Preparation (NOP), in accordance with CEQA, to announce preparation of an EIR/EIS for the 6th Street Viaduct Seismic Improvement Project. The NOI was published in the Federal Register on August 31, 2007, and the NOP was filed on August 1, 2007, with the Governor’s Office of Planning and Research Statewide Clearinghouse. The NOP was also published in newspapers of general circulation and ethnic publications corresponding to the demographic profile of the communities subject to impact. The NOP and invitations to attend a scoping meeting were also mailed to government agencies, business groups, neighborhood associations, property owners, and additional stakeholders. Three separate scoping meetings (two on August 24, 2007, and one on August 26, 2007) were held to receive recommendations for the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed in the EIR/EIS.
Caltrans and the City circulated the Draft EIR/EIS for public review between June 16, 2009, and August 24, 2009. The Notice of Availability (NOA) was published in the *Los Angeles Times* on June 11, 2009, and was filed with the County Clerk on June 18, 2009, and the *Federal Register* on July 10, 2009 (Volume 73, Number 131 *EIS No. 20090226*). The Draft EIR/EIS was mailed to elected officials, government agencies, and interested parties. Advertisements announcing the Draft EIR/EIS public hearings were placed in the *Los Angeles Times*, *La Opinión*, *Eastside Sun*, and *Los Angeles Downtown News* newspapers. In addition, public notices written in English and Spanish were mailed to occupants located within a 2,000-foot (ft) radius of the 6th Street Viaduct.
Three Draft EIR/EIS public hearings were held. The first public hearing was held at the Caltrans District 7 Headquarters at 100 S. Main Street in Los Angeles, on July 14, 2009, from 2:00 p.m. to 4:00 p.m. The second public hearing was held on the east side of the project area at the Boyle Heights Senior Center at 2839 East 3rd Street in Los Angeles, on July 14, 2009, from 6:00 p.m. to 8:30 p.m. The third and final public hearing was held on the west side of the project area at the Inner City Arts Building at 720 Kohler Street in Los Angeles, on July 21, 2009, from 5:00 p.m. to 7:00 p.m. The agenda for all of the hearings included an open house viewing of project displays, introduction of project team members, a project presentation, and a public comment session with court reporters. The project display boards included aerial photographs, engineering drawings, photo simulations, and bridge concept models for attendees to view while interacting with project representatives. A total of 73 people attended the meetings.

1.2 Project Location and Setting

The 6th Street Viaduct (Bridge No. 53C-1880) and 6th Street Overcrossing (Bridge No. 53-0595) comprise a single structure that spans a portion of the Hollywood Freeway (US 101), the Los Angeles River, city streets, and several railroad tracks (Figure 1-2). The structure is located in a highly urbanized area just east of Downtown Los Angeles and connects Downtown Los Angeles on the west side of the river with the Boyle Heights community on the east side of the river. The 66-ft-wide viaduct (from outside edge to outside edge) is approximately 3,500 ft long, with a 46-ft-wide (curb-to-curb) four-lane roadway having 11-ft-wide interior and 12-ft-wide exterior traffic lanes, no shoulders, and variable-width sidewalks extending along both sides. An approximate 3,264-ft-long segment of the viaduct is owned by the City, and a 235-ft-long segment which crosses over the US 101 freeway is owned by Caltrans.

The proposed project is located within a fully developed, mixed-use urban setting. The project limits would extend along 6th Street from west of southbound (SB) Interstate 5 (I-5) on the east side of the Los Angeles River to Mill Street on the west side of the river (see Figure 1-2). The project is located at the boundary of the City of Los Angeles’ Central City North and Boyle Heights General Plan areas. Sixth Street is one of the primary thoroughfares connecting Downtown Los Angeles and Boyle Heights.
Figure 1-2 Aerial View of the Proposed Project Vicinity
The 6th Street Viaduct crosses the Los Angeles River along an east-west alignment. Land uses along the north and south sides of the viaduct are predominantly industrial and commercial. A City Department of Public Works maintenance office is located within the area underneath the viaduct on the west side of the river. Some homeless people occasionally present under the viaduct on both sides of the river. A tunnel, owned by the City of Los Angeles, which is located under the viaduct on the west side of the river, provides access to the river from Santa Fe Avenue near the frontage road on the south side of the viaduct (Figure 1-3).

**Figure 1-3 Existing River Access Tunnel**

Railroad corridors exist along the east and west banks of the river. On the west bank of the river, the two tracks closest to the river are owned by the Metropolitan Transportation Authority (MTA) and used by the Southern California Regional Rail Authority (SCRRRA) to operate Metrolink trains. The five tracks west of the MTA tracks are owned by Burlington Northern Santa Fe (BNSF), and the rest of the tracks are owned by MTA and used for the Metro Red Line. Amtrak and BNSF also operate trains on MTA’s two tracks on the west bank. On the east bank, the two tracks closest to the river are owned by MTA, and the Union Pacific Railroad (UPRR) owns the rest of the tracks. UPRR also operates trains on MTA’s tracks on the east side of the river (See Figure 1-4).

The Los Angeles River, which passes beneath the viaduct in a north-south direction, is contained within a trapezoidal concrete-lined channel. The Los Angeles River is a flood control channel that receives stormwater runoff from its 834-square-mile watershed, treated effluent from two wastewater treatment plants, and some rising groundwater in the Glendale Narrows area. The river discharges to an estuary in Queensway Bay in the Long Beach Harbor.
Within the immediate project area, three high-voltage transmission lines, which are operated by the Los Angeles Department of Water and Power (LADWP), are located along and cross the river – one line on each bank with wires overhanging the viaduct and one crossing on the south side of the viaduct (see Figure 1-5).

Figure 1-4 Railroad Corridors Along East River Bank Looking North

Figure 1-5 High-Voltage Transmission Towers in the Vicinity of the Viaduct
1.3 Project Funding

The 6th Street Viaduct Seismic Improvement Project is included in the Final 2008 Regional Transportation Improvement Program (RTIP), page 48, on the Los Angeles Local Highway Projects, under the conformity category “exempt,” and Federal Transportation Improvement Program (FTIP), in which the project is programmed for $245 million over a 6-year period, Fiscal Years 2008/9 to 2013/14. The RTIP is currently being amended to include the total project cost of $401.2 million. The actual cash flow for the project extends through Fiscal Year 2017/18.

On December 8, 2005, FHWA issued a Memorandum “Project Financial Plan Requirements under SAFETEA-LU,” which directs every state Department of Transportation (DOT) to prepare Project Financial Plans for projects between $100 and $500 million in accordance with the FHWA Financial Plan Guidance issued May 2000 and updated December 2005.

The Project Financial Plan for the 6th Street Viaduct Seismic Improvement Project has been prepared in accordance with the FHWA guidance. Cost estimates for various project alternatives, as outlined in Chapter 3, range from $197 million for the Retrofit Alternative to $409 million for the most costly bridge concept under the Replacement Alternative. The Project Financial Plan is developed using the average cost of $401.2 million, which would include:

- Preliminary design and preparation of Project Report and Environmental Document.
- Preparation of plans, specifications, and estimate, as well as Caltrans services to secure required right-of-way (ROW).
- Construction services, including Caltrans construction contract administration and inspection, and City of Los Angeles/consultant team involvement during construction.
- Capital costs to secure parcels that require easements.
- Costs for demolition and reconstruction of the viaduct
- Financing cost (to be reimbursed by Highway Bridge Program [HBP] fund).

The funding sources identified for this project include:

- **Highway Bridge Program (HBP) funds** – These are federal funds that are apportioned by formula to the states. Caltrans then programs these funds to the various bridge projects in the state. The City of Los Angeles has received programmed approval from Caltrans for $364.1 million in HBP funds, which includes $7.4 million in financing costs.

- **Proposition 1B Local Bridge Seismic Retrofit Account (LBSRA)** – These funds are part of the $20 billion Proposition 1B passed by California voters in November 2006. The LBSRA account provides $125 million for the 11.5 percent required match for the federal HBP Fund
for the Local Seismic Bridge Retrofit Program projects. The City of Los Angeles 6th Street Viaduct Seismic Improvement Project is eligible for these funds.

The California Transportation Commission (CTC) approved the Caltrans March 9, 2007 list of eligible Proposition 1B LBSRA projects, and the 6th Street project was included on that list. The Proposition 1B LBSRA funds are used to match the federal HBP matching requirement, except for the ROW phase. For the ROW phase, Caltrans has approved the use of toll credits for that match, which increases the federal HBP funds to 100 percent.

The resulting total of Proposition 1B LBSRA funds for this project is $29.7 million, which includes $0.970 million in financing costs.

- **Other State Funds** – Previous funding included $200,000 of state funds (primarily state gas tax funds).

- **City Matching Funds** – These funds, totaling $5.2 million, are composed of Proposition C 25-percent Local Return funds, which are a component of the Los Angeles County Proposition C half-cent sales tax measure allocated by formula to the cities within Los Angeles County. The other City matching fund source is Proposition G, the City of Los Angeles’ seismic bond funds.

- **Financing** – The City of Los Angeles will issue bonds or request Caltrans to issue Grant Anticipation Revenue Vehicles bonds to cover the needed cash flow, principally because the reimbursement of HBP and/or Proposition 1B funds may be delayed. Per Section 122 of Title 23 United States Code (U.S.C.), the principle and financing costs would be reimbursed by the HBP funds. Until those costs are reimbursed, the City may use Measure R funds to pay the interest costs. Measure R is the ½ cent sales tax enacted in November 2008 for the Los Angeles County area. A portion of the Measure R funds are sent to each City and the County, including the City of Los Angeles, based on a formula called Local Return.

### 1.4 Project Purpose

The purpose of the proposed project is to:

- Preserve 6th Street as a viable east-west link between Boyle Heights and Downtown Los Angeles
- Reduce vulnerability of the 6th Street Viaduct in major earthquake events
- Resolve design deficiencies of the 6th Street Viaduct
1.5 Project Need

The 3,500–ft-long 6th Street Viaduct was constructed in 1932 using state-of-the-art concrete technology at that time. Over the last 75 years, concrete elements of the viaduct have cracked and deteriorated as a result of an internal chemical reaction called Alkali Silica Reaction (ASR), which is caused by the reactive aggregate used in the concrete. Because of this ongoing and irreversible chemical action, the 6th Street Viaduct’s concrete has lost significant strength, and the structure is subject to failure under predictable seismic energy releases. The viaduct also has design deficiencies consisting of inadequate roadway width; out-of-specification bridge, approach railing, and approach rail ends; poor roadway alignment; and out-of-specification geometric and seismic design detail.

The following subsections discuss the present conditions of the existing 6th Street Viaduct that constitute the need for the proposed improvements.

1.5.1 Need to Preserve Viability of 6th Street Transportation Corridor

The 6th Street Viaduct is an important link between east Los Angeles communities, such as the Boyle Heights Community and Downtown Los Angeles. The viaduct carries more than 13,000 vehicle trips per day compared to 12,690 along the 1st Street Viaduct and 17,680 along the 4th Street Viaduct, which are two other important links between east Los Angeles and the downtown area (refer to Table 3.7-2 in Chapter 3). With known development projects currently underway and under planning within the project vicinity, the 6th Street transportation corridor will become increasingly important to local communities east and west of the viaduct and to the regional transportation network. Improvement of the 6th Street Viaduct is therefore required to preserve this important link between the Boyle Heights Community and Downtown Los Angeles.

In addition to being an important link between East Los Angeles and Downtown Los Angeles, many Boyle Heights residents view the viaduct as a community landmark and an iconic emblem of the City of Los Angeles as a whole. Residents in the Arts District also view the viaduct as an iconic symbol of the City. The 6th Street Viaduct used to be the venue for Festival de la Gente, which is an annual festival celebrating the traditional Latino holiday Día de los Muertos, the Day of the Dead. The festival, which is a major community event celebrating Latino culture, first
started in 1999. In recent years, the festival has been sponsored by the Los Angeles City Council member of the 14th Council District in conjunction with the Speaker of the California Assembly, and Los Angeles City Mayor, with additional support by private corporate sponsors. The festival is the nation’s largest *Día de los Muertos* celebration and features local Hispanic artists and entertainers, and various food and crafts booths. It is held annually during the last week of October, one or two days before the Day of the Dead. In 2006, more than 70,000 people attended the celebration.

The Los Angeles River Revitalization Master Plan (LARRMP) designated the area covering the 6th Street Viaduct and its surrounding area as the “Downtown Industrial Opportunity Area,” one of the five demonstration areas of the LARRMP. There are currently two alternatives for the development of the opportunity area: the DI-A and DI-B concepts. Both concepts designate 6th Street in the proposed project area as a Primary Arterial Green Street. The alternatives also propose an expanded multi-use and bicycle trail on the western bank of the Los Angeles River, and a promenade along the eastern bank of the river, each having its own underpass under the 6th Street Viaduct. In addition, both alternatives provide pedestrian bridge access ramps from the west side of 6th Street north to the proposed expanded trail. Alternative DI-A designates the area east of the river north of 6th Street as a Neighborhood Gateway, while Alternative DI-B establishes this area as a Regional Gateway. See more detailed discussion on the LARRMP in Section 3.2 of this EIR/EIS.

### 1.5.2 Need to Reduce Vulnerability to Seismic Collapse

The 6th Street Viaduct is classified as a Category I structure by Caltrans, and mandatory seismic retrofit is required. As stated earlier, the concrete elements of the viaduct have cracked and deteriorated as a result of the ASR. Because of this ongoing and irreversible chemical action, the 6th Street Viaduct’s concrete has lost significant strength, and the structure is subject to failure under predictable seismic energy releases.

Damage of concrete due to ASR was first recognized in the United States during the 1940s. Alkali Silica Reaction is a chemical reaction in the concrete matrix that occurs between the alkaline pore solution of the cement paste and silica in the aggregate particles. The ASR deterioration of the mortar and concrete is due to the swelling of gel formed by the reaction of alkali in the cement with reactive silica in aggregates in the presence of moisture. The expansion of the gel generates tensile stresses in the concrete element, resulting in expansion and cracking.

---

3 A Category I structure is a highway structure that has been classified by Caltrans to be vulnerable to collapse during a design-level earthquake. This classification of structure requires mandatory seismic retrofit.
The most common manifestations of ASR are surface cracking. In the advanced stages, a clear to milky gel (i.e., silica gel) will sometimes extrude from cracks in the concrete.

In the late 1980s, the deck of the 6th Street Viaduct was stripped of asphalt and a waterproof coating applied to the underlying concrete in an attempt to minimize moisture infiltration, which is a necessary component for ASR. In addition, the City has repeatedly patched the viaduct using epoxy injection – a process that has left stains and discoloration and necessitated the application of cementitious coatings to hide the unsightly honeycomb effect of these repairs and to further seal the surface from moisture. Cracking is evident throughout the viaduct, with large cracks and spalling evident on its outer columns. Core samples show more severe cracking within the concrete matrix than on the outer surface.

While the deteriorated surface appearance of the viaduct is an issue, its underlying structural integrity is of much greater concern. In 1989, the Whittier Narrows earthquake caused damage to shear keys and a column crack at Bent 33. The structure has since been classified by Caltrans as a Category I structure and placed on the mandatory seismic retrofit list.

In the mid 1990s, Caltrans conducted an evaluation of Bridge No. 53-0595, which is the portion of the viaduct owned by Caltrans that crosses US 101. This evaluation determined that seismic retrofit was warranted, and in 1995 Caltrans undertook a retrofit construction project for that portion of the 6th Street Viaduct. The Caltrans seismic retrofit project placed infill walls between existing columns at the bents adjacent to the mainline roadbed, from Bent 37 to the east abutment. While this improvement was consistent with the Category I seismic retrofit program by eliminating potential collapse vulnerabilities, it did not resolve the long-term ASR problem and only improved the state-owned 235-ft-long portion of the 3,500-ft-long viaduct. The City elected to not move forward with a retrofit design similar to the one employed by Caltrans because of concerns that such a strategy would not address the ongoing degradation of the viaduct concrete due to ASR. The ASR deterioration continues to weaken the concrete strength, which results in greater seismic vulnerability over time.

In late 2000, the City engaged a consultant to determine the strength of the existing concrete and the overall condition of the structure through a materials testing program. This extensive investigation, completed in January 2002, confirmed the presence of severe cracking and low concrete strength throughout the viaduct and identified its root cause to be ASR\(^4\). Figure 1-6 shows cracks due to ASR, and Figure 1-7 shows a concrete core sample exhibiting the damage caused by ASR. Figure 1-8 graphically summarizes findings of the materials testing program at

---

various elements of the 6th Street Viaduct due to ASR. As can be seen, the areas closest to the river show the most damage.

Figure 1-6 Cracks due to ASR

Figure 1-7 Concrete Core Sample Showing Damage Caused by ASR
Figure 1-8 Level of Damage in Various Elements of the 6th Street Viaduct due to ASR
This page intentionally left blank.
The *Final Seismic Retrofit Strategy Report*, completed in 2004 following the extensive material testing program mentioned earlier, concluded that the viaduct, in its current state of material deterioration and lack of structural strength, is subject to collapse under loadings associated with a major earthquake. The probability that the viaduct will fail under major seismic events exceeds 70 percent in 50 years. This vulnerability level is extremely high compared to the normally accepted collapse probability of 10 percent or less over 50 years, as defined by the American Association of State Highway and Transportation Officials (AASHTO) and Caltrans. The high risk of collapse and continuing concrete deterioration indicates the need for timely corrective action to either seismically retrofit the viaduct or replace the viaduct.

### 1.5.3 Need to Resolve Design Deficiencies

The National Bridge Inspection Standards (23 CFR 650) apply to all structures defined as bridges located on public roads. Inspection records and bridge inventories are maintained in accordance with the standards through the Caltrans Structure Maintenance and Investigations *Bridge Inspection Records Information* report. Each bridge is to be inspected at regular intervals not to exceed 2 years.

Based upon the inspection records and bridge inventory data, a sufficiency rating is calculated for the particular bridge. The sufficiency rating is a method of evaluating highway bridge data by calculation of four separate factors to obtain a numeric value that is indicative of the adequacy of the bridge to remain in service. The result of this method is a percentage where 100 percent would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient (deficient) bridge. These factors include:

1. Structural adequacy and safety, up to 55 percent
2. Serviceability and functional obsolescence, up to 30 percent
3. Essentiality for public use, up to 15 percent
4. Special reductions, up to 13 percent

The City-owned viaduct (Bridge No. 53C-1880) has a sufficiency rating of 52.4. Bridges are deemed structurally deficient by the federal government if the deficiency rating is below 80, and therefore eligible for federal funding to correct the deficiency. The purpose of the rating system is to help the federal government determine which bridges need funding for repair or

---

replacement. The major factors contributing to the low sufficiency rating of the structure include:

- Cracking and condition of deck, superstructure, and substructure elements
- Inadequate roadway width
- Out of specification bridge and approach railing, and approach rail ends
- Poor roadway alignment
- Out of specification geometric and seismic detail design

While the Caltrans-owned bridge (Bridge No. 53-0595) was retrofitted in 1995, roadway width and railing deficiencies were not corrected, nor was the ASR condition resolved.

### 1.6 Independent Utility and Logical Termini

The 6th Street Viaduct Seismic Improvement Project demonstrates independent utility and logical termini. Independent utility means the project must be able to function on its own without further construction of an adjoining segment. Logical termini for project development considerations are generally defined as: 1.) rational end points for a transportation improvement; and 2.) rational end points for a review of the environmental impacts associated with a proposed improvement. The objective of the project is to preserve the 6th Street Viaduct as a viable east-west link between Boyle Heights and Downtown Los Angeles, to reduce vulnerability in major earthquake events, and to resolve design deficiencies to meet current codes set forth by AASHTO and LADOT. This project has independent utility because it would address the seismic vulnerability and design deficiencies associated with the viaduct without a need for additional improvements in the area. Furthermore, it would connect logical termini and is of a sufficient length to address all the environmental impacts associated with the project.
Chapter 2
Project Alternatives
Chapter 2  Project Alternatives

2.1  Introduction

This section describes the proposed action and the design alternatives that were developed by a multidisciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. Two Action Alternatives and a No Action Alternative are analyzed in this EIR/EIS.

2.2  Project Description

2.2.1  Proposed Action

The California Department of Transportation (Caltrans) and the City of Los Angeles (City) propose to undertake seismic improvement of the 6th Street Viaduct over the Los Angeles River (Bridge No. 53C-1880) and the 6th Street Overcrossing, which is a portion of the US 101 Hollywood Freeway (Bridge No. 53-0595), to correct structural deficiencies of this critical Los Angeles River crossing by either retrofitting the existing viaduct or replacing it 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 AASHTO and the LADOT.

2.2.2  Description of Existing Viaduct

The 6th Street Viaduct is comprised of 43 concrete spans and 2 large steel through arch truss spans over the Los Angeles River. Most of the structure sits on 58-ft-high columns supported by spread footings. The 6th Street Viaduct was determined eligible for inclusion in the National Register of Historic Places (NRHP) because of its association with the Los Angeles River bridge program and its extraordinary Streamline Moderne design rendered in steel and reinforced concrete. It was also determined eligible as one of a thematic group of 118 “Historic Highway Arch and Other Bridges in California” as part of the Caltrans Statewide Bridge Inventory in 1987. In addition, the 6th Street Viaduct is designated as City of Los Angeles Historic-Cultural Monument (HCM) #905. It also is a historical resource for purposes of CEQA, because it meets CEQA Guidelines §15064.5(a)(3)(A) and (C). Its period of significance is from 1933, when it was completed, until 1957 (50-year cutoff), and its significance is at the state level.

Most of the structure is supported by multiple column bents and spread footings. The viaduct can be divided into the following three segments: (1) approach spans west of the Los Angeles River, (2) steel through arch spans over the river (main spans), and (3) approach spans east of the river. Table 2-1 summarizes design features of the viaduct.
Table 2-1
Summary of 6th Street Viaduct Design Features

<table>
<thead>
<tr>
<th>Component</th>
<th>Design Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superstructure Type</td>
<td>Approach spans: cast-in-place concrete T-beams</td>
</tr>
<tr>
<td></td>
<td>Los Angeles River spans: half-through steel arch with suspended deck</td>
</tr>
<tr>
<td>Substructure</td>
<td>Tapered concrete columns on concrete pedestals</td>
</tr>
<tr>
<td>Foundation</td>
<td>Approach spans: spread footing, 15 ft to 20 ft plus or minus below ground</td>
</tr>
<tr>
<td></td>
<td>Los Angeles River spans: pile foundations (precast concrete piles)</td>
</tr>
<tr>
<td>Total Span Length</td>
<td>3,178 ft (West Abutment to East Abutment)</td>
</tr>
<tr>
<td>Number of Spans</td>
<td>45 (43 concrete spans plus 2 steel arch spans)</td>
</tr>
<tr>
<td>Spans within Caltrans Right-of-Way (ROW)</td>
<td>Bent 37 to East Abutment</td>
</tr>
<tr>
<td>Length within Caltrans ROW</td>
<td>235 ft</td>
</tr>
<tr>
<td>Average Span Length</td>
<td>71 ft</td>
</tr>
<tr>
<td>River Spans</td>
<td>2 Spans each approximately 163 ft</td>
</tr>
<tr>
<td>Width</td>
<td>46 ft curb-to-curb with 5-ft-wide raised walkways on both sides</td>
</tr>
<tr>
<td></td>
<td>Total outside-to-outside width = 55 ft 10 inches (River spans and East Approach)</td>
</tr>
<tr>
<td>Average Column Height</td>
<td>West Approach spans: 30 ft above ground</td>
</tr>
<tr>
<td></td>
<td>East Approach spans: 55 ft above ground</td>
</tr>
<tr>
<td></td>
<td>Los Angeles River spans: 61 ft above river</td>
</tr>
</tbody>
</table>


**West Approach Spans:** The west approach has 12 spans. The reinforced concrete deck, longitudinal T-beams, and diaphragm beams are supported on reinforced concrete bent caps. The viaduct superstructure is supported on a seat-type abutment on the west side. On the east end, the approach superstructure is supported on the west river pier. Expansion joints exist at nearly every third span of the superstructure, and the longitudinal T-beams of the superstructure are continuous between the expansion joints. All piers are supported on spread footings, except at Bent 11, where columns are supported on pile foundations.
**River Spans:** The middle segment of the viaduct consists of a dual, two-span continuous asymmetrical steel tied arch. The arch ribs consist of built-up sections with varying depth that form a compression arch that rises above the deck from the east and west river piers and then dives below the concrete deck just before reaching the center river pier, with the base of the arches supported at the center pier. Thus, the arch ribs are fixed to the center river pier while supported on segmental rockers on the west and east river piers.

**East Approach Spans:** The east approach is similar in construction to the west approach. It has 31 spans between the east river pier and the east abutment. The span lengths and skew angles to the bents vary to allow several local streets to pass underneath the viaduct. Columns of Bent 12 are supported on pile foundations, whereas columns in all other bents are supported on spread footings.

### 2.3 Description of Evaluated Project Alternatives

Several project alternatives were developed during the project development stage. Screening exercises were conducted to identify the most viable alternatives for evaluation in this EIR/EIS. Identification of a preferred alternative was based on consideration of the results of the environmental impact evaluation and public hearing comments on the Draft EIR/EIS. Based on the Draft EIR/EIS and public comments, Caltrans and the City have recommended replacement of the 6th Street Viaduct, and specifically Alignment 3B with the principle of Bridge Concept 4 as the preferred alternative (see Section 2.4 for details).

#### 2.3.1 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)-induced deterioration of the structure would continue, and the seismic vulnerabilities would worsen as the concrete strength continued to deteriorate. The City would 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. The 6th Street Viaduct would remain at its existing roadway width of 46 ft, which accommodates two travel lanes in each direction with no outside shoulders or safety median. None of the design deficiencies would be corrected under this alternative. Implementation of Alternative 1 would not meet the project purpose and need, as described in Sections 1.4 and 1.5.
Under this alternative, the viaduct may be determined to be unserviceable by the City of Los Angeles Bureau of Engineering and Caltrans due to advanced ASR deterioration or a major seismic event in the future, neither of which can be predicted. Under such an event, the City would take the viaduct out of service and seek emergency funding sources to replace it.

2.3.2 Alternative 2 – Viaduct Retrofit

Researches on various retrofit schemes were performed based on state-of-the-art design criteria including Caltrans “Seismic Design Criteria” and “Guidelines for Historic Bridge Rehabilitation and Replacement” by AASHTO. The AASHTO guidelines placed the 6th Street Viaduct geometrics and structural rating into Group VI (Superstructure/Substructure Condition, Geometry, and Load-Carrying Capacity Are Inadequate) - “Bridges in this group are severely deteriorated and severely deficient. When a bridge is deficient in all categories and those deficiencies cannot be corrected in a feasible and prudent manner, it is very unlikely to have rehabilitation potential.” Notwithstanding the AASHTO guidelines, structural retrofit alternatives used the Caltrans “Seismic Design Criteria” to develop designs so that environmental impacts and cost estimates could be determined.

Two retrofit schemes were initially identified for detailed study and evaluation in this EIR/EIS, including Infill Wall and Heavy Steel Casing, and Substructure Replacement; however, the Substructure Replacement scheme was later withdrawn from further evaluation as discussed in Section 2.5. This section provides a detailed description of the Infill Wall and Heavy Steel Casing Alternative.

Under this alternative, the viaduct’s columns would be retrofitted by encasing them with 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 a major earthquake (a magnitude 7.3 on the Richter Scale).

Column Retrofit

Under this retrofit alternative, 76 columns (out of a total of 114) would be encased, of which 26 would utilize 7/8-inch steel plates and 50 would utilize 5/8-inch steel plates. A 6-inch layer of architectural mortar would conceal the exposed plates, channels, and bars (Figure 2-1). All exterior columns with “Light” or “Moderate” damage ratings would also be encased to account for future concrete degradation due to ASR expansion. Encasing all exterior columns would also maintain visual balance and consistency for the retrofitted structure. The interior columns in Bents 1, 4, and 5 would be encased to enhance their shear strength. Bent 12 would be excluded
from retrofitting because of the lack of space available for construction of the column encasement due to proximity of railroad tracks.

**Infill Walls, New Foundations, Grade Beams, and Closure of Expansion Joints**

Infill shear walls would be constructed between the columns to reduce transverse seismic movements of the structure. Grade beams would be constructed below ground between the existing pile caps to reduce longitudinal seismic movement of the structure. Along the viaduct (non-river piers), new foundations would be constructed with the placement of new piles around the existing column foundations. To improve stability of the footings, uplift tie-downs (soil anchors) might be required at some columns where there are large uplift demands on the foundations that could result in rocking response and excessive displacements of the superstructure. Expansion joints in the superstructure would be reconstructed at Bents 27 and 33, connecting adjacent spans to reduce seismic longitudinal displacement demands for the East Approach Spans. Figure 2-2 presents a conceptual sketch of the proposed infill walls and column casings.

---

**Figure 2-1 Steel Encasement of Columns**

**Bent Caps Retrofit**

Retrofitting of bent caps would ensure that the expected seismic damage would take place in a controlled fashion. Retrofitting of bent caps for flexural strength enhancement is proposed at 16 bents (excluding Bents 27 and 33 where expansion joints would be closed). Bent cap retrofit would be achieved by means of concrete bolsters, which would be bonded to the bent caps by dowels that run through pre-drilled cores in the existing bent cap. Continuity of the concrete bolsters along the length of the bent cap would be achieved by post-tensioning of high-strength
bars that would run through pre-drilled cores in the superstructure girders (see Figure 2-3). The post-tensioning bars would be anchored at their ends by exterior steel plates; these exposed plates and the bars would also be concealed by mortar.

![Existing](image1.png)

![After Retrofit](image2.png)

**Figure 2-2 Conceptual Drawing Alternative 2 – Retrofit**

Bent caps at locations of expansion joints would be retrofitted as shown schematically in Figures 2-4 and 2-5. The positive flexural moment capacity would be enhanced by adding drop caps at the soffit of the existing bent caps. The new drop caps would be bonded to the existing bent cap by dowels. Steel plates would be placed along the sides of the bent caps and bonded to the concrete by means of high-strength bars inside core holes. The steel plates would enhance flexural capacity and resistance to horizontal shear.
Figure 2-3 Retrofiting of Bent Caps by Concrete Bolsters

Figure 2-4 Bent Cap Retrofit at Expansion Joints (one simply supported span)
River Piers Retrofit
The river piers would be retrofitted by placing infill walls between columns at the West and East River Piers. In addition, new pile foundations would be constructed around the existing foundations at the West and East River Piers to confine the poor lap-splices of the longitudinal column reinforcement and to allow column bases to develop their full plastic moment capacities.

New Expansion Joint Seals
Installation of new expansion joint seals is essential for long-term efficiency of the retrofit design because it helps protect the substructure from direct water flow onto concrete members. Additional moisture at the concrete surface can accelerate the ASR and subsequent concrete damage. Figures 2-4 and 2-5 show the proposed new expansion joint seals.

Design Life
The current design standard for seismic retrofit is to prevent failure (collapse) of the structure when it is subject to the maximum credible earthquake (MCE). The retrofit design life expectancy to prevent seismic collapse under the MCE event and loss of structural strength due to ASR deterioration is approximately 30 years. Based on AASHTO guidelines, design life is the period of time that a bridge is expected to be in operation. New bridge structures are designed to have a structural design life of 75 years. The actual life will depend on several factors, including exposed conditions of the structure to the environment, quality of materials, design and construction, and level of maintenance performed.
Design Standards
The viaduct’s roadway does not meet the City’s design standards for a Secondary Highway, and substantial physical changes to the superstructure would not be part of this alternative. Existing nonstandard viaduct features would continue to exist (i.e., inadequate sidewalk width, absence of safety median and shoulders; and inadequate stopping sight distances). The retrofit alternative would also not replace the existing barrier rails, which do not meet current crash-test standards. Consistent with Caltrans requirements, the retrofit design would only be for the prevention of collapse under the design seismic event, and the damaged bridge would have to be replaced after a major earthquake.

Estimated Alternative Cost
The cost of Alternative 2 – Viaduct Retrofit using the infill wall and heavy steel casing method is estimated at $199 million (as of 4th quarter of 2010), as shown below. Note that the construction cost and ROW cost are used to compare the alternatives escalated to midyear of construction. The construction costs are those necessary to construct the project, whereas ROW costs are the costs to acquire land and for easements for the purpose of project construction. The design, administrative, and financial costs are not included in this cost estimate.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction cost</td>
<td>$154,665,000</td>
</tr>
<tr>
<td>ROW</td>
<td>$44,146,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$198,811,000*</td>
</tr>
</tbody>
</table>

*Note: Estimate as of 4th quarter, 2010

Construction Duration and Phasing
Construction of the retrofit alternative would be divided into the following phases:

1. Retrofit Foundations
2. Retrofit Columns
3. Retrofit River Piers
4. Construct In-fill Walls
5. Retrofit Bent Caps
6. Retrofit Expansion Joints

The 2.5-year construction period is assumed to start in 2014. At each bent location, the foundation excavation and reconstruction would take place first, followed by the column, in-fill wall, and bent cap reconstruction.
Traffic Staging
The general traffic staging to maintain circulation during construction of this retrofit scheme is presented below. If this alternative were selected, a detailed traffic staging plan would be developed during final design.

6th Street Viaduct between Mateo Street and Boyle Avenue
During retrofit of the deck expansion joints and possibly during bent cap retrofit, traffic lanes would be reduced to one lane in each direction.

Surface Streets under the 6th Street Viaduct
During retrofit of the bridge foundations and columns, temporary street closure and traffic detours would be necessary along the street network east and west of the river. It is anticipated that access to local businesses would be maintained. Construction activity would be sequenced by column bent number to minimize impacts to traffic, parking, and local business access. Parking under the viaduct would be prohibited and restricted in the immediate vicinity of the viaduct on the north and south sides during construction. It is anticipated that only foundation retrofit work would require frontage road closure. Anticipated traffic restrictions and management are summarized below (see Figure 1-8 for referenced bent locations).

- Bent 3: Construction would require temporary closure of the north and south frontage roads to through traffic between Mateo Street and Santa Fe Avenue to allow foundation modifications. Local business access would be maintained by allowing one-way traffic under the viaduct between Bents 1 and 2. Through traffic east of Bent 3 would be detoured through Santa Fe Avenue via Jesse Street and Willow Street. No parking would be allowed on frontage roads between Bents 1 and 4.

- Bents 4 and 5: Temporary closure of both curbside lanes on Santa Fe Avenue would be required under the viaduct. Parking would be restricted under the viaduct and on frontage roads between Bents 3 and 6. Frontage roads may be partially blocked.

- Bents 7 and 9: Temporary closure of the north and south frontage roads to through traffic would be required between Santa Fe Avenue and Mesquit Street to allow foundation modifications. Local business access would be maintained through Mesquit Street using alternate entrances to the businesses north and south of the viaduct. Through traffic would be detoured through Mesquit Street via Jesse Street and Santa Fe Avenue. Parking would be restricted on frontage roads and under the viaduct between Bents 6 and 10.

- Bents 1 and 2: Parking would be restricted under the viaduct and frontage roads between the west abutment and Bent 3. Frontage roads may be partially blocked.

- Bents 6 and 8: Parking would be prohibited under the bridge and restricted on the frontage roads between Bents 5 and 9. Frontage roads may be partially blocked.
• Bent 10: Parking would be restricted under the bridge and frontage roads between Bent 9 and the MTA right-of-way (ROW). No traffic restriction is expected east of Mesquit Street in this area. The east curb lane of Mesquit Street would be blocked under the viaduct.

• Bent 11: Temporary closure of the MTA electrified yard track would be required west of Bent 11 and Amtrak track east of Bent 11. Track closure may require alternate shoo-fly tracks for each closed track.

• River West Pier: Temporary closure of the SCRRRA (Metrolink) track would be required adjacent to the river west bank. Track closure may require alternate shoo-fly track for closed track.

• River East Pier: Temporary closure of the SCRRRA (Metrolink) track would be required adjacent to the river east bank. Track closure may require alternate shoo-fly track for closed track.

• Bent 13: Temporary closure of the Union Pacific Railroad (UPRR) industry track connection adjacent to the commercial building located west of Mission Road (Ventura Foods, Inc.) would be required.

• Bents 15 and 16: Both east and west curbside segments of Mission Road under the viaduct would be partially blocked. Parking would be prohibited under and restricted adjacent to the bridge at Mission Road.

• Bents 17 through 36: Both east and west curbside segments of Anderson Street (Bents 30 and 31) and Clarence Street (Bent 36) under the viaduct would be partially blocked. Parking would be prohibited under and restricted adjacent to the bridge between Mission Road and Clarence Street. Alleys under the viaduct would be closed to both traffic and parking.

Proposed Laydown Areas
A laydown area is an area where the contractor can store equipment and materials needed for the project. The laydown area for this retrofit scheme would likely be the area underneath the viaduct or adjacent vacant parcels. The precise location for the final laydown area would be identified by the construction contractor with close coordination with the City.

2.3.3 Alternative 3 – Viaduct Replacement
This alternative would construct a new viaduct along one of the three alignments with the selected bridge concept. The design life expectancy of Alternative 3 is 75 years.

2.3.3.1 Viaduct Alignments
Three viaduct replacement alignments (i.e., 3A, 3B, and 3C) out of ten that were evaluated (refer to Section 2.5 for information on all alternatives evaluated) were selected for design consideration, as shown in Figure 2-6. Further refinement of the preferred alignment (3B) to minimize ROW impacts will be undertaken during the final design.
Figure 2-6 Alignment Alternatives Selected for Further Study
Alignment 3A: The replacement structure would be built along a new horizontal alignment. The new structure within the City’s ROW would have a cross section that meets secondary highway standards as required by the City of Los Angeles Department of Transportation (LADOT). The new roadway would have a maximum width of 70 ft (curb-to-curb) and would consist of two 11-ft-wide lanes in each direction, a median with a maximum width of 10 ft, and outside shoulders with a maximum width of 8 ft, which would incorporate future bicycle lanes. The proposed cross section would also allow for sidewalks with a maximum width of 10 ft. Bridge rails located on the outside edges of the structure would have a width of 2 ft. The typical width to the outside of the bridge rails would therefore be 94 ft maximum.

The cross section within Caltrans’ ROW (over US 101) would be slightly different. In this section, the viaduct roadway would be 74 ft, curb-to-curb, consisting of two 12-ft-wide lanes in each direction, a 10-ft-wide median, and 8-ft-wide shoulders. The proposed cross section also allows for 8-ft-wide sidewalks on both sides of the structure.

The new viaduct structure would extend east from Mateo Street to just east of US 101. The new roadway design has a transition on the west side of the river from the existing street width at Mill Street to the ultimate width of the proposed 6th Street Viaduct Replacement Alternative at Mateo Street. Because of the wider viaduct replacement structure, the north side of the viaduct footprint would extend farther to the north, while the south side of the footprint would remain essentially at the same location except for the segment of the alignment over the Los Angeles River, which would be shifted slightly to the south to improve the horizontal curve radius and provide improved safety with better stopping sight distances.

Alignment 3B (Preferred Alternative): The new viaduct would be designed with the same cross section as Alignment 3A. This option proposes a horizontally curved alignment from Santa Fe Avenue to west of US 101. The curve in the alignment is more gradual than Alignment 3A. This alignment, similar to Alignment 3A, maintains its present location on the south side of the existing bridge from Mateo Street to Santa Fe Avenue, and the alignment shifts to the north from Santa Fe Avenue to the east as it crosses over the river. This alignment would swing to the north approximately 85 ft farther than the existing alignment on the east side of the river, which would upgrade the existing non-standard curve radius at the east end.

A modification to Alignment 3B was evaluated in an effort to reduce ROW impacts in response to the public input; however, the 3B modified design option uses smaller radius curves and is geometrically inferior to Alignment 3B. In addition, cost savings would be less than 1 percent of Alignment 3B, which is considered negligible. Therefore, the design option 3B modified was not carried forward for further consideration as a full alignment alternative for the purpose of environmental analysis in this EIR/EIS.
Alignment 3C: The new viaduct would be designed with the same cross section as Alignment 3A. To accommodate the wider viaduct, the footprint of the viaduct would be extended on the north and south sides, except for the area between Mateo Street and Mesquit Street, which would be wider to the north only. The segment that extends from the river to the east would be constructed so that the columns and foundations lie within existing ROW and the viaduct roadway deck extends beyond the existing ROW over adjacent private properties.

2.3.3.2 Bridge Concepts

Fifteen (15) bridge concepts (types) were developed during the initial phase of project studies (summer 2007), as described in Appendix N. Based on the Community Advisory Committee (CAC) and technical staff input, these were screened down to five bridge concepts (i.e., Concepts 1, 2, 3, 4, and 5) as viable designs for further consideration. In spring 2009, refinement of Bridge Concepts 1 and 4 were added as a result of public and agency input. Bridge Concepts 1A and 4A were developed for consideration during the public review period of the Draft EIR/EIS, and they were introduced at the CAC meeting in April 2009 and during the public hearings for the Draft EIR/EIS held in July 2009. Each bridge, including refined Concepts 1A and 4A, could be constructed on any of the viaduct replacement alignments (i.e., 3A, 3B, or 3C). The entire viaduct structure (including Bridge Nos. 53C-1880 and 53-0595) would be constructed using a Cast-in-Place Multiple Cell Post-Tensioned Box Girder. The City will refine final design of the bridge replacement as a means to ensure the selection of an architecturally distinctive and cost-effective design.

**Bridge Concept 1 – Main Span Replication**

The new replica bridge could capture the essence of the old landmark bridge with its decorative off-set corner elements, steel arches, “deco” detailing and off-set of planes at the pier walls, as well as the corners with decorative dentil detailing below the concrete barrier along the entire length of the viaduct. The structure could mimic the original design with complimentary dual arches. The new main center pylon with its belvederes would maintain the pedestrian viewing areas of the original 1932-designed belvederes. Also, the pylons, which historically extended above the bridge deck until being removed in the 1950s, could be replicated as original in the replacement structure of Concept 1 (Figure 2-7).

The lateral framing at the top of the center span’s new arches would be different than the steel lattice truss framing of the existing bridge. The new lateral steel tube framing is the result of current design standards that are required for new bridges. This new system of steel square tubes could resemble the forms of the steel arch members, thereby tying together the whole structure above the roadway as one cohesive aesthetic unit.
The new bridge handrails, projectile barriers, deck sections, and barrier railing could pick up the open-spaced vertical elements of the original 1932 barriers and handrails. New crash-tested barriers and handrails would comply with current Caltrans specifications. A solids and voids ratio, somewhat similar to the existing edge of deck forms, visually relates to the openings on the original details of the viaduct.

Along the viaduct, the handrails, projectile barriers, barrier railing, and light standards could maintain the proportions and vocabulary of the original design. The embankment piers at each end of the main span could keep a sectional profile and details that would be similar to the architectural vocabulary\(^7\) of the original piers. The new span’s steel deck profile matches the profile of the viaduct’s concrete girder, allowing a smooth transition and continuity throughout the roadway structure. The details of the new piers along the viaduct would also be consistent with the detailed surface indentations of the new center pier.

![Computer Model of Bridge Concept 1](image)

**Figure 2-7  Computer Model of Bridge Concept 1**

The spacing of the arch’s vertical suspenders (hangers) could set a modular dimension that the main sidewalk pattern follows along the whole bridge length. The vertical concrete members of the new auto barrier also follow this same modular dimension.

The abutment walls at each end of the viaduct would feature detailed surfaces that could pick up the vocabulary of the main pier’s decorative indentations.

---

\(^7\) Vocabulary in this context means to use the same shapes, materials, and mass sizing between different structural and architectural elements, using the same repeating patterns, to distinguish this from other structures within the area.
Bridge Concept 1A would be identical to Concept 1 between the riverbanks, mimicking the original design with complimentary dual arches and main center pylon with its belvederes maintaining the pedestrian viewing areas of the original 1932-designed belvederes. Unlike Concept 1, which employs long-span box girders with fewer columns east and west of the river similar to the other replacement concepts, refinement Concept 1A would replicate the short-span haunched girders with numerous support columns of the original structure from the riverbanks to the ends of the viaduct. However, the total project cost for Concept 1A was found to be significantly higher than other bridge concepts and was not considered a reasonable expenditure of public funds; therefore, Bridge Concept 1A was eliminated from further consideration.

**Bridge Concept 2 – Cast-in-place Box Girder with Steel Tied Arch Pedestrian Ways**

The bridge design of Concept 2 could employ a combination of some of the structural elements proposed for Concept 1 (Figure 2-8). The main span of the bridge would be a concrete box girder, with gateway monuments at each end. In addition, the pedestrian path would be separated from the bridge deck at the main span, allowing pedestrians to enjoy a different experience while crossing the bridge.

![Computer Model of Bridge Concept 2](image)

**Figure 2-8  Computer Model of Bridge Concept 2**

The main-span piers could act as entrance monuments and become an integral component in the massing and scale of the bridge. The arches on the main span would anchor themselves to these vertical piers, allowing them to act as a main-span gateway to the flow of traffic on the bridge. The pedestrian and driver could take a visual cue as to where the river edges begin and end.

The viewing belvederes could extend horizontally from the voids within the gateway pier monuments. They could act as an extension to the pedestrian’s experience, allowing them to distance themselves from the traffic on the bridge. Each belvedere could be held in place by vertical columns that mimic the structural member section of the arch.
The new bridge handrails, projectile barriers, deck sections, and barrier railing could pick up the open-spaced vertical elements of the original 1932 barriers and handrails. New crash-tested barriers and handrails would comply with current Caltrans specifications. A solids and voids ratio, somewhat similar to the existing edge of deck forms, would visually relate to the openings on the original details of the viaduct.

Along the viaduct, the handrails, projectile barriers, barrier railing, and light standards would maintain the proportions and vocabulary of the original design. The embankment piers at each end of the main span would keep a sectional profile and details that are similar to the architectural vocabulary of the original piers. The new span’s steel deck profile would match the profile of the viaduct’s concrete girder, allowing a smooth transition and continuity throughout the roadway structure. The details of the new piers along the viaduct could also be consistent with the detailed surface indentations of the new pier.

The spacing of the arch’s vertical suspenders (hangers) could set a modular dimension for the main sidewalk pattern along the whole bridge length. The vertical concrete members of the new auto barrier could also follow this same modular dimension.

Along each end of the viaduct, for design consistency, the abutment walls could have a detailed surface that could pick up the vocabulary of the main pier’s decorative indentations.

Also, along the surface of the new abutments, multiple spaces could be provided for a green landscaped wall. The vertical wall configurations at the Bent 2 location could use the same vocabulary to match the adjacent end abutment wall pattern.

**Bridge Concept 3 – Steel Half-Through Arch with CIP Box Girder Approaches**

The design of Concept 3 would pick up structural elements found on the original half-through arch of the landmark main span (Figure 2-9). Reaching over the Los Angeles River, the new half-through arches would intersect the bridge deck and nestle into the embankment piers. The lateral tie beams between the arches above the deck could be similar in cross section to that of the arch and vertical structural members of the original bridge.

The geometry of the arch structures in plan view is skewed to follow the path of the river. This could affect the shape of the viewing platforms (belvederes) at the piers, yet it could solve the design problem of the bridge and river channel not intersecting at a 90-degree angle.
The structural support on the underside of each belvedere could be a wide flange section member. This member could be shaped in elevation to match that of the bottom part of the main half-through arch intersecting the deck at the embankment pier. The piers on either side of the river’s edge could be marked with vertical elements of solids and voids that coincide with the original bridge’s indentation of planes and corners. The embankment piers that tower above the bridge deck would act as a demarcation of the river below.

The new bridge handrails, projectile barriers, deck sections, and barrier railing could pick up the open-spaced vertical elements of the original 1932 barriers and handrails. New crash-tested barriers and handrails would comply with current Caltrans specifications. A solids and voids ratio, somewhat similar to the existing edge of deck forms, would visually relate to the openings on the original details of the viaduct.

Along the viaduct, the handrails, projectile barriers, barrier railing, and light standards could maintain the proportions and vocabulary of the original design. The embankment piers at each end of the main span would keep a sectional profile and details that are similar to the original architectural vocabulary of the piers. The new span’s steel deck profile could match the profile of the viaduct’s concrete girder, allowing for a smooth transition and continuity throughout the roadway structure. The details of the new piers along the viaduct could also be consistent with the detailed surface indentations of the pier.

The spacing of the arch’s vertical suspenders (hangers) could set a modular dimension that the main sidewalk pattern follows along the whole bridge length. The vertical concrete members of the new auto barrier could also follow this same modular dimension.
Along each end of the viaduct, for design consistency, the abutment walls could have a detailed surface that picks up the vocabulary of the main pier’s decorative indentations.

Also, along the surface of the new abutments, the designers could allow multiple spaces for a green landscape wall. The vertical wall configurations at the Bent 2 location could use the same vocabulary that matches the adjacent end abutment wall pattern.

**Bridge Concept 4 – Extradosed Concrete Box Girder (Preferred Alternative)**

Bridge Concept 4, a contemporary cable-supported structure, would present a 21st century structural principle that introduces a relatively new technology to the United States (Figure 2-10). This extradosed concept bridge could invoke a uniquely modern statement over the river.

![Computer Model of Bridge Concept 4](image)

**Figure 2-10 Computer Model of Bridge Concept 4**

Because of the vertical constraint of the 230-kV transmission lines crossing over the 6th Street Viaduct, the extradosed bridge type was considered as a cost effective cable-supported design principal for this location. In an extradosed bridge, the cables emanate from a relatively low tower intersecting with the deck further out and at a lower angle than a cable-stay bridge, so that their tension acts more to compress the bridge deck horizontally than to support it vertically. Compared to an extradosed bridge, a typical cable-stay bridge has a substantially taller tower with a height above the deck at least half the span to the next support, since the cables are the vertical support and must come at a relatively high angle.

In Bridge Concept 4, the bridge’s main span could be composed of a series of dual towers on the outside of the roadway that rise above the bridge deck. The top of each tower could be illuminated to enhance the nighttime effect of this distinctive structure. The main viewing platforms could sit above the center of the river, and they could be detailed with shapes that are...
similar in scale to the existing viaduct’s belvederes, yet be in concert with the extradosed bridge pylons and piers.

The new bridge barrier railing, projectile barriers, and light standards could pick up the open-spaced vertical elements, proportions and vocabulary of the original 1932 design. New crash-tested barrier and handrails would comply with current Caltrans specifications. A solids and voids ratio, somewhat similar to the existing edge of deck forms, could visually relate to the openings on the original details of the viaduct.

Along each end of the viaduct, for design consistency, the abutment walls could have a detailed surface that picks up the vocabulary of the main pier’s decorative indentations.

Also, along the surface of the new abutments, the designers could allow multiple spaces for a green landscape wall. The vertical wall configurations at the Bent 2 location could use the same vocabulary that matches the adjacent end abutment wall pattern.

The PDT recommended the design principle of Bridge Concept 4, cable supported river spans with one central pier that clear the railroad tracks and avoids the overhead 230 kV power lines, be the preferred alternative. A range of design expressions of this principle, including Concept 4A with six towers representing Sixth Street as one example (see Figure 2-11), could be considered during final design.

![Computer Model of Bridge Concept 4](image)

**Figure 2-11  Computer Model of Bridge Concept 4A**

**Bridge Concept 5 – Extradosed Concrete Box Girder with Single Pylon**

Concept 5 is another potential design expression of the extradosed bridge principle. This expression features extradosed structures with towers and cables aligned along the center of the bridge and viaduct approaches (Figure 2-12). This particular expression utilizes six bridge towers...
as symbolically representative of 6th Street. The top of each tower could be illuminated to enhance the nighttime effect.

![Computer Model of Bridge Concept 5](image)

**Figure 2-12 Computer Model of Bridge Concept 5**

This bridge concept would not incorporate outboard belvederes. Belvederes would interrupt the flow of the roadway deck and, with the structure supporting the deck running along the center of the bridge, there would not be a natural space to place belvederes. On the preceding schemes, outside elements would be at the roadway deck to shape these protrusions and thereby enhance the natural rhythm of forms along the deck.

The viaduct cross section could be shaped to match and reinforce the design vocabulary of the cable angles. These angular elements could also be seen in the handrails.

The new bridge handrails, projectile barriers, deck sections, and barrier railing could pick up the open-spaced vertical elements of the original 1932 barriers and handrails. New crash-tested barrier and handrails would comply with current Caltrans specifications. A solids and voids ratio, somewhat similar to the existing bridge, could visually relate to the openings on the original details of the viaduct.

Along the viaduct, the handrails, projectile barriers, barrier railing, and light standards could maintain the proportions and vocabulary of the original design. The embankment piers at each end of the main span keep a sectional profile and details that are similar to the architectural vocabulary of the original piers. The details of the new bents along the viaduct could also be consistent with the detailed surface indentations of the new center pier.
Along each end of the viaduct, for design consistency, the abutment walls could have a detailed surface that picks up the vocabulary of the main pier’s decorative indentations.

### 2.3.3.3 Street Design

In addition to improving the geometry of the 6th Street Viaduct, other areas of consideration for roadway design include the transitions from the viaduct to both the west and east ends of the project limits (see Figures 2-13 and 2-14), as well as impacts to the local streets under the viaduct.

![Figure 2-13 West End Transition Configuration](image)

On Mateo Street at the west end of the viaduct, the proposed section would be aligned with the existing lane configuration by using a 380-ft transition that would consist of striping and minor
modifications to the existing sidewalk and curb and gutter. The existing traffic signal masts would be modified to match the proposed transitions. A left-turn lane along Mateo Street would be provided to allow the southbound (SB) traffic to access the eastbound (EB) direction on 6th Street. This improvement would provide a safer lane configuration and better vehicular traffic movement. Note that under the replacement alternative, existing buildings on the north side of the viaduct east of Mateo Street would need to be removed. New access road and a sidewalk would likely be constructed to provide local circulation within the area.

On the east end of the viaduct, the proposed 94-ft section would taper to match the existing 58-ft section through a 165-ft transition. No additional lanes would be added, and no modifications to the existing sidewalk would be made.

Portions of the existing street crossings under the viaduct may need to be reconstructed for an approximate length of 200 ft on both sides of the viaduct. These improvements may be done in a way that creates opportunities for landscaping.

2.3.3.4 Other Roadway Improvements
As part of the construction of any alignment and bridge concept under Alternative 3, several roadway improvements at nearby intersections would be undertaken to maintain traffic operation during the construction period when the viaduct would have to be closed.

- 6th Street/Boyle Avenue Intersection: The proposed operational improvements at this intersection would: (a) modify signal phasing for the east-west direction to run as opposed phasing, (b) convert number 1 westbound (WB) through lane to a left-turn lane, (c) modify signal phasing to add a SB left-turn phase, and (d) extend the SB left-turn lane by approximately 75 ft.
- 7th Street/Boyle Avenue Intersection: Signal phasing would be modified to add an EB left-turn phase.
- 3rd Street/Central Avenue Intersection: Signal phasing would be modified to add a NB left-turn phase.
- 3rd Street/Alameda Street Intersection: Signal phasing would be modified to add a NB left-turn phase.
- 6th Street/Alameda Street Intersection: Signal phasing would be modified to add a NB left-turn phase.
- 6th Street/Central Avenue Intersection: Signal phasing would be modified to add a SB left-turn phase.
- 5th Street/Central Avenue Intersection: New traffic signals would be installed at this location.
In addition to modifying the signal phasing of traffic signals at nearby intersections, several other intersections will be impacted by the traffic detours. Mitigation measures have been proposed to mitigate these impacts (see Chapter 3 - Section 3.7.4) as follows:

- 4th Street and US-101 SB Off-Ramp: Install new traffic signals and connect to Los Angeles City ATSCAC system.
- 4th Street and US-101 SB On-Ramp: Install new traffic signal and connect to Los Angeles City ATSCAC system.
- 4th Street and Soto Street: Restripe to add an EB right-turn lane.

**Design Standards**

The proposed replacement alternative would be designed to meet the City’s current street and street lighting design standards. The structural design for the replacement alternatives would meet AASHTO bridge design standards and Caltrans seismic design criteria.

**Debris Management**

Demolition of the viaduct would produce several kinds of debris, including crushed concrete, rebar, steel, and other existing appurtenances. Table 2-2 presents the estimated quantity of debris from viaduct demolition and reuse/disposal methods.

<table>
<thead>
<tr>
<th>Type of Debris</th>
<th>Quantity</th>
<th>Reuse Method</th>
<th>Disposal Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>43,882 cu. yds</td>
<td>Fill material, landscaping</td>
<td>Truck to landfill or reprocessing facility</td>
</tr>
<tr>
<td>Rebar</td>
<td>2,700 tons</td>
<td>Salvage as scrap metal</td>
<td>Truck to metal salvage facility</td>
</tr>
<tr>
<td>Light Poles</td>
<td>90</td>
<td>Salvage as scrap metal and concrete as fill material</td>
<td>Truck to metal salvage facility</td>
</tr>
<tr>
<td>Steel from Main Span and Handrails</td>
<td>2,692 tons</td>
<td>Salvage as scrap metal</td>
<td>Truck to metal salvage facility</td>
</tr>
</tbody>
</table>

**Estimated Cost for Replacement Alternatives**

Table 2-3 presents estimated costs of each replacement bridge concept constructed on the three alignment evaluated. As can be seen, the construction and ROW costs for bridge concepts 1 through 5 vary from a low of $308 million to a high of $367 million (with the eliminated Concept 1A estimated at $409 million) for Alignment 3A, from a low of $306 million to a high of $369 million for Alignment 3B (with the eliminated Concept 1A estimated at $405 million); and from a low of $320 million to a high of $372 million for Alignment 3C. All estimates are based on 4th quarter 2010 costs.
Table 2-3
Viaduct Replacement Estimated Costs

<table>
<thead>
<tr>
<th>Cost Item</th>
<th>Cost Estimate (midyear of construction dollars 2014/2015)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alignment 3A</td>
<td>Alignment 3B</td>
<td>Alignment 3C</td>
</tr>
<tr>
<td>Bridge Concept 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction cost</td>
<td>240,735,000</td>
<td>237,542,000</td>
<td>254,505,000</td>
</tr>
<tr>
<td>ROW</td>
<td>96,411,000</td>
<td>97,807,000</td>
<td>94,375,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>337,146,000</td>
<td>335,349,000</td>
<td>348,880,000</td>
</tr>
<tr>
<td>Bridge Concept 1A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction cost</td>
<td>306,150,000</td>
<td>302,635,000</td>
<td>NC</td>
</tr>
<tr>
<td>ROW</td>
<td>102,421,000</td>
<td>102,421,000</td>
<td>NC</td>
</tr>
<tr>
<td>TOTAL</td>
<td>408,571,000</td>
<td>405,056,000</td>
<td>NC</td>
</tr>
<tr>
<td>Bridge Concept 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction cost</td>
<td>211,280,000</td>
<td>208,156,000</td>
<td>225,263,000</td>
</tr>
<tr>
<td>ROW</td>
<td>96,411,000</td>
<td>97,807,000</td>
<td>94,375,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>307,691,000</td>
<td>305,963,000</td>
<td>319,638,000</td>
</tr>
<tr>
<td>Bridge Concept 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction cost</td>
<td>222,007,000</td>
<td>218,916,000</td>
<td>235,971,000</td>
</tr>
<tr>
<td>ROW</td>
<td>96,411,000</td>
<td>97,807,000</td>
<td>94,375,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>318,418,000</td>
<td>316,723,000</td>
<td>330,346,000</td>
</tr>
<tr>
<td>Bridge Concept 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction cost</td>
<td>210,408,000</td>
<td>207,330,000</td>
<td>224,608,000</td>
</tr>
<tr>
<td>ROW</td>
<td>97,746,000</td>
<td>98,605,000</td>
<td>95,261,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>308,154,000</td>
<td>305,935,000</td>
<td>319,869,000</td>
</tr>
<tr>
<td>Bridge Concept 4A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction cost</td>
<td>223,523,000</td>
<td>220,008,000</td>
<td>237,723,000</td>
</tr>
<tr>
<td>ROW</td>
<td>97,746,000</td>
<td>98,605,000</td>
<td>95,261,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>321,269,000</td>
<td>318,613,000</td>
<td>332,984,000</td>
</tr>
<tr>
<td>Bridge Concept 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction cost</td>
<td>269,165,000</td>
<td>270,095,000</td>
<td>276,265,000</td>
</tr>
<tr>
<td>ROW</td>
<td>97,746,000</td>
<td>98,605,000</td>
<td>95,261,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>366,911,000</td>
<td>368,700,000</td>
<td>371,526,000</td>
</tr>
</tbody>
</table>

*Cost Estimates as of 4th quarter 2010.*

*NC Bridge Concept 1A is not economically possible on Alignment 3C because columns of the approaches would require taking ROW along the south and north edges of the viaduct.*

**Construction Duration and Phasing**

Demolition and construction of the proposed improvements would be accomplished in a multi-phase manner with concurrent subphases. Demolition/construction is assumed to begin in 2013 and be completed over a 4-year timeframe. Anticipated construction activities for each year are summarized below.
Year 1
- Demolition of Adjacent Buildings – including several buildings east and west of the Los Angeles River
- Demolition/Replacement of Viaduct – including west approach, east approach, and river and railroad crossings
- Utility Relocation and replacement of sewer siphons.

Year 2
- Demolition and Replacement of the ramp access to the tunnel.
- Foundation Construction – for west approach, east approach, and river crossing
- Column/Pier Construction – for west approach, east approach, river, and railroad crossing
- Construction of west approach retaining walls and roadway section
- Construction of approach spans

Year 3
- Completion of foundations construction
- Completion of column/pier table construction
- Completion of west approach roadway and retaining walls construction
- Continuing approach spans construction phases
- Abutment construction and main spans construction
- Surface road demolition and reconstruction

Year 4
- Completion of approach spans construction
- Completion of main spans construction
- Completion of surface roads construction
- Sidewalks and barrier railings construction, bridge deck surface grinding
- Landscaping

Traffic Staging
Traffic detours would occur along the street network east and west of the river due to the closure of the 6th Street Viaduct. In addition, the 6th Street frontage roads on both sides of the viaduct would need to be closed, causing obstruction to the operations of adjacent businesses not subject to relocation that depend on the frontage roadways.

In addition to the detours resulting from the 6th Street Viaduct closures described above, it is anticipated that traffic staging along the viaduct vicinity during construction could include the following closures and detours:
East End of proposed project to Clarence Street

- Provide alternate closures of the SB and NB lanes of US 101 to allow nighttime bridge demolition.

Clarence Street to East of Anderson Street

- Close Clarence Street and the alley west of Clarence Street.
- Divert Clarence Street NB traffic to Jesse Street, then to Anderson Street, then to East 6th Street, and back to Clarence Street.
- Use the same route in the opposite direction for SB traffic.

Anderson Street to West of Alley

- South Clarence Street would be open for traffic.
- Close Anderson Street and the alley west of Anderson Street.
- Divert Anderson Street NB traffic to Jesse Street, then to Clarence Street, then to East 6th Street, and back to Anderson Street.
- Use the same route in the opposite direction for SB traffic.

West of Alley (above) to Easterly UPRR Railroad Tracks ROW

- Close Mission Road.
- Divert Mission Road NB traffic, except for local business traffic south of the viaduct, to Jesse Street, then to Anderson Street, then to East 6th Street, and then to Mission Road.
- Use the same route in the opposite direction for SB traffic.

Over UPRR/SCRRA ROW Tracks between the Los Angeles River and Ventura Foods, Inc.

- Build platforms spanning bents over railroad tracks. These activities are to be performed during work windows authorized by the railroads.
- Temporarily close the tracks adjacent to the bents to demolish the columns and footings.

Over BNSF/SCRRA/MTA ROW Tracks between the Los Angeles River and Mesquit Street

- Build platforms spanning bents over railroad tracks. These activities are to be performed during work windows authorized by the railroads.
- Temporarily close the tracks adjacent to the bents to demolish the columns and footings.

East of Mesquit Street to East of Santa Fe Avenue

- Close North and South frontage roads between Santa Fe Avenue and Mesquit Street.
- Close Mesquit Street under the 6th Street Viaduct to all traffic.
- Access to Lumary’s Tire Co. would be open on the south side from Mesquit Street only through Jesse Street via South Santa Fe Avenue or Imperial Street.
• Access to the film studio located on the north side of the bridge would be through South Santa Fe Avenue from Willow Street at the north side of the property.

East of Santa Fe Avenue to the West Abutment
• Close North and South frontage roads between Santa Fe Avenue and Mateo Street for through traffic.
• Close South Santa Fe Avenue under the 6th Street Viaduct to all traffic.
• Allow only local business traffic with main entrances at frontage roads. Use flaggers at both ends to control traffic.
• Divert all through traffic on South Santa Fe Avenue to Mateo Street via Jesse Street on the south side and via Willow Street on the north side.
• South frontage road local traffic diverted to SB Santa Fe Avenue or Mesquit Street.
• Access for the north frontage road local traffic via Mateo Street, then Willow Street, then SB South Santa Fe Avenue to the frontage road.
• City Maintenance Facility is to be relocated before commencing bridge demolition operations.

West Abutment to Mateo Street
• Remove paving on the 6th Street Viaduct.
• Close through traffic at North and South frontage roads between Mateo Street and Santa Fe Avenue.
• Allow only local business traffic with main entrances at frontage roads. Use flaggers at both ends to control traffic.
• On the South frontage road, local business access east of South Santa Fe Avenue would be provided via Jesse Street and then South Santa Fe Avenue to the South frontage road.
• On the North frontage road, local business access west of South Santa Fe Avenue would be provided via Mateo Street, then Willow Street, then South Santa Fe Avenue to the North frontage road.

US 101
During the construction of a new viaduct structure, a portion of the US 101 underpassing the 6th Street Viaduct would require temporary closure for bridge demolition and falsework installation. This construction activity would be conducted at night time during none peak working hours. The freeway closure would be done in close coordination with the City, Caltrans, and the California Highway Patrol (CHP), during which time, traffic along US 101 would be detoured to surface streets. The detours will be directed with lighted signage, changeable message signs, CHP patrols, Caltrans personnel and other measures required for the safe movement of vehicular and pedestrian traffic around the construction site. Temporary
detours and construction equipment and debris would be removed prior to the next morning’s rush hour commute.

**Proposed Laydown Areas**

Two locations have been identified as candidate areas that can be used by contractors to store equipment and materials during construction activities. These sites were identified for purposes of the environmental analysis based on the fact that they are either currently vacant parcels with no known development plans or parcels owned by the City. One of the parcels is located on the northwest side of the viaduct at Santa Fe Avenue. This is a triangular-shaped property of approximately 40,605 square feet. The other parcel, owned by the City, is located at the southwest corner of Mission Road and Jesse Street. This is a triangular-shaped property of approximately 79,650 square feet.

The actual laydown areas may vary and would be identified by the Contractor, subject to the approval of the City’s construction manager. It is the contractor’s responsibility to acquire permits prior to using any selected site.

2.3.3.5 **Transportation System Management and Transportation Demand Management Alternative**

Caltrans requires consideration of Transportation System Management (TSM) and Transportation Demand Management (TDM) strategies in EIS/EIR documents (Caltrans SER EIS/EIR Annotated Outline, Volume 1, July 2011). TSM strategies consist of actions that increase the efficiency of existing facilities; they are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Some TSM strategies include ramp metering, auxiliary lanes, turning lanes, reversible lanes, and traffic signal coordination. TSM also encourages transit, bicycle, and pedestrian improvements on transportation facilities.

Although TSM measures alone could not satisfy the purpose and need of the project, because they cannot correct the seismic deficiencies of the viaduct, the following TSM measures have been incorporated into the Replacement Alternative for this project: 10-ft-wide sidewalks; 19-ft-wide outside lanes, including 8-ft-wide shoulders for bicycles; left-turn lane at Mateo Street to improve through traffic flow; and traffic signal improvements at both ends of the project. The City of Los Angeles’ signal network system, referred to as the Automated Traffic Surveillance and Control (ATSAC) system, coordinates signals for optimal operations (referred to as signal priority). The ATSAC system is currently in place in East Los Angeles.

TDM focuses on regional strategies for reducing the number of vehicle trips and vehicle miles traveled, as well as increasing vehicle occupancy. It facilitates higher vehicle occupancy or
reduces traffic congestion by expanding travelers’ transportation choices in terms of travel methods, time, route, costs, and the quality and convenience of the travel experience. Implementation of the TDM measures will not correct the design and seismic deficiencies of the 6th Street Viaduct; therefore, they do not meet the purpose and need of the project.

2.4 Preferred Alternative Identification

The Draft EIR/EIS was circulated for public review between June 16, 2009 and August 24, 2009. Three public hearings were held. All comments from the public hearings and those received during the public review period were considered.

After comparing and weighing the benefits and impacts of all of the feasible alternatives, as summarized in Summary Table ES-1 and described in detail in Chapter 3, the Project Development Team (PDT) has identified the Replacement Alternative (Alternative 3) with Alignment 3B and the principle of Bridge Concept 4 as the Preferred Alternative for the 6th Street Viaduct Seismic Improvement Project. The City and Caltrans have made the final determination of the project’s impact on the environment based on the comments and concerns expressed during the public review period and the results of the engineering and environmental technical analysis. The Preferred Alternative would attain the purpose and need of the project because it would replace the ASR-damaged 6th Street Viaduct with a new structure that would be designed to meet current seismic and geometric standards set forth by AASHTO and LADOT.

Although the Retrofit Alternative (Alternative 2) would have lower construction costs and would preserve some historic elements of the viaduct compared to the Replacement Alternative, it would not be able to stop, reverse, or mitigate the ASR deterioration and, consequently, would have the highest life-cycle cost. The Retrofit Alternative would only meet a “no collapse” standard; significant damage could occur in a major earthquake. In addition, it would not correct the geometric deficiencies of the existing viaduct and would still adversely affect this historic resource. The Retrofit Alternative would partly achieve the project’s purpose; however, due to the deficiencies described above, it is inferior to the Replacement Alternative. The PDT held a workshop on October 8, 2008, to determine feasibility of the retrofit concepts and recommended the Replacement Alternative over the Retrofit Alternative (see Appendix N, Section 3.3.1). The PDT determination was presented in the Draft EIR/EIS, and after consideration of public comments on the Draft EIR/EIS, the Retrofit Alternative remains not recommended.

As described in detail in Appendix N, the PDT held a second workshop on September 29, 2009, after the close of the Draft EIR/EIS public comment period, to identify a preferred alternative based on the highest ranked replacement alignment and bridge concept. Specific criteria were used to evaluate the different bridge structures and alignment alternatives. Seismic performance,
geometric flexibility, roadway and pedestrian safety, historical compatibility, public support, environmental impacts, construction cost, and constructability were among the set of criteria used for the evaluation of the bridge concepts. The criteria for the evaluation of alignments consisted of, but were not limited to, such factors as operational safety, ROW impacts to properties, construction schedule, and industrial preservation. Alignment 3B and Bridge Concept 4A received the highest score. As a result, after careful consideration of all the aforementioned concerns, and in further consideration of all other environmental analyses contained in the EIR/EIS, the Replacement Alternative with Alignment 3B and the principle of Bridge Concept 4 was selected as the Preferred Alternative.

The City, as the CEQA Lead Agency, has prepared a Final EIR. In accordance with CEQA, the City will certify that the project complies with CEQA, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations (SOC) for impacts that could not be mitigated below a level of significance, and certify that the findings and SOC have been considered prior to project approval. The City will then file a Notice of Determination (NOD) with the State Clearinghouse that will identify whether the project will have significant impacts, mitigation measures included as conditions of project approval, findings made, and that a SOC was adopted.

Similarly, Caltrans, as assigned by FHWA, has issued a Final EIS in accordance with NEPA, and will document and explain its decision regarding the selected alternative, project impacts, and mitigation measures in a Record of Decision in accordance with NEPA.

2.5 Alternatives Considered but Eliminated from Further Discussion

During the 6th Street Viaduct alternative analysis, a wide range of alternatives was considered to address alignment deficiencies. An alternative development process was conducted for the project, as summarized in Appendix N of this EIR/EIS. The alternatives below were considered, but they were later withdrawn because of the lack of features to meet the purpose and need, extraordinary cost, substantial environmental impacts, and/or engineering infeasibility.

Retrofit using Infill Wall Construction

This retrofit alternative was evaluated in the Final Seismic Retrofit Strategy Report.\(^8\) It consists of construction of infill walls between columns at 17 bents, and construction of 6 grade beams and 2 footings. The retrofit design also includes restrainers at the West and East River Piers and concrete-filled steel pipes at the west abutment to enhance the capacity of shear keys under

---

Retrofit using Infill Wall with Steel Casing Construction

This alternative is an enhancement to the Infill Wall Construction Alternative by adding steel casings to columns in the bents with infill shear walls, in addition to other columns at some of the bents with no infill walls. The steel casings would enhance confinement, ductility, and shear strength of the existing columns. The steel casings would also improve shear force transfer capacity between the infill walls and the deteriorated columns. This alternative would construct infill shear walls at 14 bents in addition to the use of steel plates to provide encasement to 29 columns. Since ductility and displacement capacity of the retrofitted columns would be enhanced, it would be necessary to increase flexural strength of some of the bent caps to assure that plastic hinges would not form in the bent caps after retrofitting of the columns, but that plastic hinges would rather form in the columns. This is because of limited ductility capacity of the bent caps due to the lack of continuous bottom reinforcement and inadequate top reinforcement in the cap beams at locations of the columns.

The infill shear walls would reduce seismic transverse displacements in the existing structure. Under this alternative, two expansion joints in the superstructure would be closed, and new grade beams would be constructed to reduce seismic longitudinal displacements. The as-built analyses showed that stability problems may be encountered in the existing structure because of the small-size footings. Thus, new footings are also proposed to reduce displacements and enhance stability of the structure since the existing footings were, according to literature, sized to resist gravity plus 0.10g lateral loads. Also, retrofitting of the existing footings would be necessary because of degradation due to ASR.

Despite the confinement proposed under this alternative, ASR would continue. In addition, the seismic risk would still remain and would require a significant subsequent retrofit in approximately 10 years to maintain the seismic and operational safety of the structure. This alternative was withdrawn from further evaluation in the EIR/EIS based on the fact that it does not meet the purpose and need of the project because it would not correct the ASR damage, geometric deficiencies, and related seismic deficiencies of the viaduct, nor would it remove the viaduct from the Eligible Bridge List (EBL) due to functionally deficient geometrics that would remain.
Retrofit using Catcher Wall Construction

The objective of this retrofit design would increase seismic safety by preventing the collapse of the viaduct during an earthquake. The design would consist of constructing catcher walls at locations of all bents, except Bent 12. This bent would be excluded because of the restricted room available for construction imposed by the proximity of active railroad tracks. These catcher walls would provide a secondary support system to the viaduct to supplement the existing columns and foundations in the event of column collapse.

This alternative would increase seismic safety by preventing structural collapse, but it would not improve seismic performance of the existing structure, resulting in a high likelihood of destructive damage with few, if any, repair options available following a large seismic event. Life expectancy of the structure under this alternative would be approximately 10 years. This alternative was withdrawn from further evaluation in the EIR/EIS based on the fact that it does not meet the purpose and need of the project because it would not correct the ASR damage, geometric deficiencies, and related seismic deficiencies of the viaduct, nor would it remove the viaduct from the EBL list due to functionally deficient geometrics that would remain.

Retrofit using Concrete Casing Construction

This alternative would utilize concrete column casings to increase the ductility and stiffness of the existing structure. It is similar to the Infill Wall with Steel Casing Construction retrofit scheme in that the existing columns would be encased to provide additional confinement to resist lateral dilation of the core. This scheme proposes to retrofit all columns and bent caps and construct new foundations at bents with “Moderate-Severe” to “Severe” concrete column degradation based on results of the material sampling and testing study. No infill shear walls are proposed with this alternative because the concrete column casings and the bent cap retrofit would increase the stiffness of the structure and consequently reduce seismic displacements. The new foundations would also be designed to reduce seismic displacements. Bent 12 would be excluded from retrofitting because of the restricted room available for retrofit construction to take place at this location.

This retrofit scheme has similar shortcomings to the Infill Wall with Steel Casing Construction scheme. Design of the concrete encasement would not provide sufficient strength to withstand the high internal pressure from continuing ASR activity. Construction of the concrete encasement would take place with rigorous water and moisture control of the existing concrete to prevent trapped moisture inside the encased sections of columns. Life expectancy of the structure under this alternative would be approximately 20 years before the next major retrofit would be required. This alternative was withdrawn from further evaluation in the EIR/EIS based on the fact that it does not meet the purpose and need of the project because it would not correct the
ASR damage, geometric deficiencies, and related seismic deficiencies of the viaduct, nor would it remove the viaduct from the EBL list due to functionally deficient geometrics that would remain.

**Retrofit using Substructure Replacement**

This retrofit scheme would be designed to meet current seismic demands by replacing all ASR-affected concrete in the substructure elements with new concrete. By replacing the substructure elements rather than using traditional strengthening retrofit solutions, the viaduct’s aesthetics and historic nature could be preserved by utilizing architectural features similar to the existing members. Columns would be designed according to current seismic design criteria, including displacement and ductility capacity requirements.9

This retrofit scheme would replace all substructure elements, including piles, footings, grade beams, columns, and bent caps, to provide additional strength required to accommodate the anticipated seismic demands (see Figure 2-15). The design would include substructure replacement for the length of the entire structure, including the west approach spans, main spans, and east approach spans. In addition, this retrofit scheme would replace the existing substandard concrete barrier with a crash-tested Type 80 modified barrier consistent with current Caltrans specifications. The new barrier would mimic the aesthetics of the existing barrier. As part of the barrier replacement, all existing cobra-head luminaires and arms would be replaced with new fabricated ornamental lanterns and pendants replicating the original 1930s design.10

The existing concrete approach spans are supported primarily on multi-column bents with spread footing foundations. Existing spread footings lack top mat reinforcement, which is required to resist seismic damage. This retrofit scheme would replace all foundations with combined pile-supported footings featuring increased footing thickness and current seismic detailing to provide the necessary strength to resist anticipated seismic demands.11 The increased strength in the foundations would provide a fixed connection to the columns, which would reduce the seismic displacement demands.

Columns would be designed to provide sufficient displacement capacity to ensure that a ductile plastic hinge forms in the column elements. Aesthetically, the retrofit design would match the geometric features of the existing concrete columns.

---

10 The City of Los Angeles Bureau of Street Lighting (BSL) is not required to meet current City-adopted lighting standards because the 6th Street Viaduct is protected by the State Historical Building Code. BSL will, however, provide the best feasible illumination levels and uniformity ratios for both roadway and sidewalks.
The piers supporting the main span have also been determined to be seismically deficient. As part of this alternative, the River Bank Piers and the Center River Pier would be replaced. The new main-span supports would attempt to aesthetically match the existing supports. Due to the size of the main-span supports, the piers would be comprised of hollow reinforced concrete elements.

As previously discussed, bent caps would be designed to provide sufficient capacity to ensure that plastic hinging is limited to the column members. A review of as-built drawings indicated that the existing bent caps lack sufficient strength to form plastic hinges in the column members; therefore, all bent caps would be removed and replaced. Existing superstructure reinforcement that is continuous through the bent cap would need to be maintained and integrated with the new bent cap reinforcement to provide the required continuity of the superstructure.

This retrofit scheme would specifically address the ASR in the substructure by removing ASR-compromised material and replacing it with new materials, but it would not address the ASR in the superstructure; therefore, the design life of the substructure would be 75 years, while the superstructure would continue to be vulnerable to earthquakes. Closure of the viaduct after a design earthquake event would likely be required due to superstructure damage.
Construction of this retrofit scheme would be difficult due to the following constraints:

- Limited access to the site from the sides and limited vertical clearances for placement of shoring
- Proximity of bridge to existing operational railroad
- Proximity of bridge to existing building foundations
- Size and weight of superstructure elements to be supported during removal and replacement of substructure
- Difficult concrete removal work at the bent caps
- Questionable force transfer between the new bent caps and existing superstructure may require large-scale proof testing
- Substandard horizontal clearances between columns and railroad facilities would cause difficulty in obtaining approval from railroad companies

This retrofit scheme was withdrawn from further evaluation it would not completely correct the seismic deficiencies of the viaduct; thus, it does not meet the purpose and need of the project. In addition, it would involve much higher costs compared to the Infill Wall and Steel Casing scheme to obtain similar results for the same design life.

**Replace ASR-Damaged Concrete within the Existing Viaduct Structure**

This scheme was evaluated in response to suggestions from the public to consider preserving the general appearance of the existing viaduct by replacing the concrete elements that have deteriorated due to the ASR effect. Results of the evaluation indicated that there is no practical method to differentiate and isolate the ASR-compromised concrete from sound material. Many of the cores, which were extracted as part of the previously discussed materials testing program, exhibited a healthy surface appearance but highly distressed interiors (see Figure 1-7); therefore, it was determined that there was no practical way to replace bad concrete with new material without replacing all of the concrete. Implementation of this scheme would essentially require replacement of the entire viaduct.

Another suboption was to replace the foundations, columns, bent caps, and guardrails, along with strengthening the existing arch ribs. The superstructure between bent caps would not be replaced. After approximately 30 years, the superstructure would have to be replaced. (See Substructure Replacement alternative).

This alternative was withdrawn from further evaluation in the EIR/EIS based on the fact that it does not meet the purpose and need of the project because it would not correct the seismic deficiencies of the viaduct, nor would it remove the viaduct from the EBL list due to functionally deficient geometrics that would remain.
Retrofit using Lithium Treatment

In March 2007, FHWA published the report *The Use of Lithium to Prevent or Mitigate Alkali-Silica Reaction in Concrete Pavements and Structures*. Lithium treatment for the 6th Street Viaduct was thoroughly evaluated and was withdrawn from further evaluation in this EIR/EIS for the following reasons:

1. The FHWA report states “Lithium treatment will not repair any damage that has already occurred.” Significant ASR damage has already occurred within the 6th Street Viaduct concrete elements; thus, lithium treatment would not be effective.
2. Data from the FHWA report indicate that application of lithium to existing structures can only penetrate approximately an inch below the surface of the concrete member. The structural elements of the 6th Street Viaduct are many feet thick. The most severe ASR damage is within the core of the thick concrete members.
3. In regards to usage of lithium to treat existing ASR-affected structures, the report states “Typically, such studies have used laboratory-sized specimens with relatively small cross-sections and it has not yet been demonstrated that lithium treatment is effective with larger specimens that are more representative of elements of concrete structures.” In addition, if the large members of the viaduct could be treated, the treatment still would not correct the damages that have occurred.

Retrofit using Carbon Fiber Wrap Technology

Similar to steel casings, carbon and fiberglass-reinforced polymer rehabilitation schemes do not reverse or stop the ASR deterioration throughout the structural elements. The *Final Seismic Retrofit Strategy Report* did not evaluate this option in depth because of its cost being much higher relative to steel casing and its unknown long-term durability beyond approximately 20 years. This retrofit scheme was withdrawn from further evaluation in this EIR/EIS based on the fact that it does not meet the purpose and need of the project because it would not correct the seismic deficiencies of the viaduct.

Replacement with Historic Replica (Modified Retrofit)

This retrofit scheme was developed and evaluated in response to suggestions from the public to consider partial retrofit and partial replacement. It is essentially a replacement of the existing viaduct structure with a new structure that maintains the historic appearance of the existing 6th Street Viaduct with a reuse of some existing viaduct components.

Under this scheme, the new structure would be constructed to meet current code requirements. All of the viaduct features would be replicated to the maximum extent feasible consistent with arriving at a roadway design that meets current AASHTO and City standards. The alignment and roadway width would be changed to meet these standards.
Based on the preliminary design concept, the new replacement structure would have 7 spans on the west approach between the west abutment and the west river pier. The east approach would consist of 14 spans between the east river pier and Bent 37. Span length would vary between 80 ft and 156 ft, with an average span length of 130 ft to 140 ft. The superstructure would be constructed with cast-in-place (CIP) concrete multi-cell box girder. The box girder would have a parabolic soffit with a variable girder depth between 4.5 ft and 6.5 ft in a typical span. Depth of the box girder may reach up to 8 ft at some of the bents. The parabolic soffit of the superstructure would simulate the visual appearance of the existing structure. The bent cap overhang would be constructed with similar details to those of the existing structure. Concrete barrier rails Type T-80 would be used to replace the existing railing and sidewalk. The steel arches over the Los Angeles River would be preserved in the new replacement structure. The superstructure over the Los Angeles River would consist of a CIP box girder, as described above; however, the steel arches would be moved and reset on the exterior sides of the new superstructure to maintain the visual appearance of the existing viaduct. The steel arches would not participate in load-carrying capacity of the new viaduct portion over the Los Angeles River. With this scheme, the steel arches would carry only their self weight, as well as self weights of the vertical hangers and bracing members.

The new structure would be constructed with circular columns with diameters ranging from 6 ft to 7 ft. The circular columns would be covered by 6-inch-thick architectural precast concrete casings that have a similar exterior shape as that of the existing columns. The objective of the architectural concrete casing would be to maintain the visual appearance of the existing columns, and it would not carry any load of the columns. The columns and the architectural casings would be supported on pile foundations.

This retrofit scheme would eliminate the ASR problem. The life expectancy of the new structure would be an estimated 75 years. This scheme would provide a wider roadway width and alignment that meets the goal of removing the structure from the FHWA Eligible Bridge List. Although the existing viaduct elements would be replicated to the extent practicable, the new structure would not have exactly the same visual appearance (effects on the feeling and association) along the entire length of the viaduct. This alternative was further developed as Bridge Concept 1 (replication of the main span) and Concept 1A (replication along the entire length of the viaduct). Although this alternative would meet the project purpose and need by correcting the seismic and geometric deficiencies, the historic integrity of the viaduct would be lost. Furthermore, due to the substantially higher cost of Bridge Concept 1A compared to Concept 1 (approximately $100 million more), only Bridge Concept 1 was carried forward for evaluation in the EIR/EIS (see Section 2.3.3.2).
Replacement Alignments Withdrawn (1, 3, 4, 6, 7, 8, 9)

A screening process was conducted to evaluate and select viable alignments for further design consideration. Based on preliminary engineering investigation and public input, the PDT initially identified more than 20 alignment scenarios for consideration. These alignment scenarios were then refined and integrated into 10 alignment alternatives (Figure 2-16). A workshop was conducted to screen down the proposed alignment alternatives. This workshop resulted in the alternatives being reduced to three alignments (2, 5, and 10), and later renamed as Alignments 3A, 3B, and 3C, as shown in Figure 2-6, for the purpose of evaluation in the environmental document. A summary of the screening exercise is presented in Appendix N.

A modification to Alignment 3B was later evaluated in an effort to reduce ROW impacts in response to the public input during the Draft EIR/EIS public review process; however, the 3B modified design option uses smaller radius curves, being inferior geometry to Alignment 3B. In addition, cost savings would be less than 1 percent of Alignment 3B, which is considered negligible. Therefore the design option 3B modified was not carried forward for further consideration as a full alignment alternative for the purpose of environmental analysis in this EIR/EIS.

Two of the replacement alternatives eliminated deserve special mention because they are the only alternatives that would allow the existing 6th Street Viaduct to remain standing and still meet the project purpose and need. These are Replacement Alignment 8 and Replacement Alignment 9, as described below:

- **Replacement Alignment 8:** Alignment 8 proposes to preserve the existing viaduct by constructing a new viaduct to the north of the existing viaduct. Under this alternative, the existing viaduct would be retrofitted for preservation purposes and used only for pedestrian and bicycle traffic. One of the main drawbacks of this approach is that by constructing a new alignment to the north and extending its limits to the east and west, it would result in substantially greater ROW impacts than any of all the other proposed alternatives. This alternative would be far more expensive because both the new viaduct construction and the existing viaduct retrofit to the same non-collapse standards would be required. Construction of the viaduct under Alignment 8 would create major impacts to the sewer siphon across the Los Angeles River and the sewers located on the east bank of the river. This alignment would also create potential impacts to the LADWP transmission towers located along the east bank of the river. This alignment would require construction of a new US 101 northbound (NB) on-ramp. Two new bridges would also be required over I-5 for the NB and southbound (SB) sections of the freeway. There would be greater impacts to the railroads by adding a new bridge to the north of the existing viaduct, plus the additional space required for retrofitting the existing columns that are located within the railroad ROW.
### Chapter 2  Project Alternatives

#### Figure 2-16 Replacement Alternative Alignment, Sheet 1

<table>
<thead>
<tr>
<th>Screening Replacement Alignment Description</th>
<th>Plan View</th>
</tr>
</thead>
</table>
| **Alternative 1**  
Remove existing viaduct and construct a new viaduct that replicates existing viaduct on existing alignment. The new viaduct width and profile would be the same as the existing structure. No median or shoulders would be provided. | ![Plan View Alternative 1](image) |
| **Alternative 2 (Alignment 3A in this EIR/EIS)**  
Remove existing viaduct and construct a new viaduct on a new horizontal alignment. The new structure would be built along a new horizontal alignment similar to that described in Replacement Alternative 2, with the exception of a larger radius of 500 ft upstream of the Los Angeles River to allow for better design speeds and shorter distances. | ![Plan View Alternative 2](image) |
| **Alternative 3**  
Remove existing viaduct and construct a new viaduct. It would have a wider cross section as in Alternative 2. The new structure would be built along a new horizontal alignment similar to that described in Replacement Alternative 2, with the exception of a larger radius of 500 ft upstream of the Los Angeles River to allow for better design speeds and shorter distances. | ![Plan View Alternative 3](image) |
| **Alternative 4**  
Remove existing viaduct and construct a new viaduct. It would have a wider cross section as in Alternative 2. The new structure would be built along a new horizontal alignment similar to that described in Replacement Alternative 2, with the exception of a larger radius of 500 ft upstream of the Los Angeles River to allow for better design speeds and shorter distances. | ![Plan View Alternative 4](image) |
| **Alternative 5 (Alignment 3B in this EIR/EIS)**  
Remove existing viaduct and construct a new viaduct. It would have a wider cross section as in Alternative 2. The new structure would be built along a new horizontal alignment similar to that described in Replacement Alternative 2, with the exception of a larger radius of 500 ft upstream of the Los Angeles River to allow for better design speeds and shorter distances. | ![Plan View Alternative 5](image) |
### Table 2-1 Alternative Alignments

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alternative 6</strong></td>
<td>Remove existing viaduct and construct a new viaduct on a new horizontal alignment. It would have a wider cross section as in Alternative 2. The south side of the viaduct footprint would extend to the south, while the north side of the footprint would remain at the same location.</td>
</tr>
<tr>
<td><strong>Alternative 7</strong></td>
<td>Remove existing viaduct and construct a new viaduct on a new horizontal alignment. It would have a wider cross section as in Alternative 2. To accommodate the widened viaduct, the footprint of the viaduct would be widened on both the north and south sides.</td>
</tr>
<tr>
<td><strong>Alternative 8</strong></td>
<td>Construct a new viaduct parallel to the existing viaduct on the north side adjacent to the existing viaduct. It would have a wider cross section as in Alternative 2. Retrofit the existing viaduct for public safety.</td>
</tr>
<tr>
<td><strong>Alternative 9</strong></td>
<td>Construct a new viaduct parallel to the existing viaduct on the south side of the existing viaduct. It would have a wider cross section as in Alternative 2. Retrofit the existing viaduct for public safety.</td>
</tr>
<tr>
<td><strong>Alternative 10 (Alignment 3C in this EIR/EIS)</strong></td>
<td>Remove existing viaduct and construct a new viaduct on a new horizontal alignment. It would have a wider cross section as in Alternative 2. To accommodate the widened viaduct, the footprint of the viaduct would be widened on the north and south sides, except for the area between Mateo Street and Mariposa Street, which would only be widened to the north. The segment that extends from the river to the east would be constructed as a cantilever structure to minimize right-of-way impacts.</td>
</tr>
</tbody>
</table>

**Figure 2-16 Replacement Alternative Alignment, Sheet 2**
Chapter 2  Project Alternatives

- **Replacement Alignment 9**: Alignment 9 proposes to preserve the existing viaduct by constructing a new viaduct to the south of the existing viaduct. Under this alternative, the existing viaduct would be retrofitted for preservation purposes and used only for pedestrian and bicycle traffic. One of the main drawbacks of this approach is that by constructing a new alignment to the south and extending its limits to the east and west, it would create substantially greater ROW impacts similar to Alignment 8. This alternative would be far more expensive because both the new viaduct construction and the existing viaduct retrofit the same non-collapse standards would be required. This alignment would impact three LADWP transmission towers (two on the west bank of the river and one on the east bank). In addition, LADWP’s electrical substation between Santa Fe Avenue and Mesquit Street would be impacted. A new NB on-ramp connection to US 101 would be required. Two new bridges would also be required over I-5 for the NB and SB sections of the freeway. There would be greater impacts to the railroads by adding a new bridge to the north of the existing viaduct, plus the additional space required for retrofitting the existing columns that are located within the railroad ROW.

**Bridge Concepts Withdrawn**

Screening of potential replacement bridge concepts was conducted for various beam, arch, and cable-supported bridge systems using steel and concrete materials. The purpose of this screening was to identify which bridge concepts would be developed further during the advanced planning phase of project development leading to bridge concept selection, thus narrowing the number of potential bridge concepts for staff’s recommendations during the bridge concept selection phase.

Fifteen (15) bridge concepts (types) were developed during the initial phase of project studies (summer 2007), as shown in Figure 2-17, and described in Appendix N. Based on the CAC and technical staff input, 10 of them were eliminated from further study. The remaining five bridge concepts (i.e., Concepts 1, 2, 3, 4, and 5) were carried forward for conceptual designed development, as described in Section 2.3.3.2. In spring 2009, design expression Concept 1 and Concept 4 were added as a result of public and agency input, called Concepts 1A and 4A. Due to the high cost of Concept 1A, it was not carried forward for further evaluation in the EIR/EIS.
| Replacement in kind  
(Bridge Concept 1 in this  
EIR/EIS) | Steel tied arch with top lateral  
bracing | Extradosed concrete box girder  
with dual pylons  
(Bridge Concept 4 in this  
EIR/EIS) |
|---|---|---|
| Haunched cast-in-place  
prestressed concrete box girder | Steel tied arch without top lateral  
bracing | Extradosed concrete box girder  
with single pylons  
(Bridge Concept 5 in this  
EIR/EIS) |
| Haunched steel box girder | Haunched cast-in-place  
prestressed concrete box girder  
with steel tied arch  
pedestrian bridge  
(Bridge Concept 2 in this  
EIR/EIS) | Cable stay with single pylon |
| Concrete slant leg frame | Steel half-through arch  
(Bridge Concept 3 in this  
EIR/EIS) | Cable stay with 4-leg pylon |
| Concrete deck arch | Concrete half-through arch with  
“Y” piers | Self anchored suspension |

**Figure 2-17 Bridge Concepts Developed at the Initial Phase of Project**
### 2.6 Permits and Approvals Needed

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

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Army Corps of Engineers (USACE)</td>
<td>Section 404 Nationwide Permit for possible discharge of dredged or fill material into the Los Angeles River</td>
</tr>
<tr>
<td>State Historic Preservation Officer (SHPO)</td>
<td>Section 106 consultation and agreement for the work that would impact the historic 6th Street Viaduct</td>
</tr>
<tr>
<td>Los Angeles Regional Water Quality Control Board (RWQCB)</td>
<td>Construction General Permit and Project Registration Documents</td>
</tr>
<tr>
<td>RWQCB</td>
<td>National Pollutant Discharge Elimination System (NPDES) Permit</td>
</tr>
<tr>
<td>RWQCB</td>
<td>Groundwater Dewatering Permit for discharges of groundwater from construction and project dewatering to surface waters in the watersheds of Los Angeles</td>
</tr>
<tr>
<td>California Department of Fish and Game (CDFG)</td>
<td>Section 1602 Agreement for Streambed Alteration</td>
</tr>
<tr>
<td>California Public Utilities Commission (PUC) Rail Crossing Engineering Section (RCES)</td>
<td>Rail crossing construction or alteration authorization</td>
</tr>
<tr>
<td>Caltrans</td>
<td>Encroachment permits</td>
</tr>
<tr>
<td>Los Angeles County Metropolitan Transportation Authority (MTA)/Southern California Regional Rail Authority (SCRA)/ BNSF Railway (BNSF)/Union Pacific Railroad (UPRR)/ AMTRAK</td>
<td>Railroad Maintenance Agreement for work within railroad ROW</td>
</tr>
</tbody>
</table>
Chapter 3
Affected Environment,
Environmental Consequences, and Avoidance, Minimization, and/or
Mitigation Measures
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

3.1  Introduction

The proposed project is a joint undertaking by Caltrans and the City of Los Angeles (City), and it is subject to both state and federal environmental review requirements. Project documentation has been prepared in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Federal responsibility for environmental review, consultation, and any other actions required in accordance with NEPA and other applicable federal laws for this project that used to be administered by the Federal Highway Administration (FHWA) is being carried out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (U.S.C.) 327. Caltrans is the lead agency under NEPA, and the City of Los Angeles is the lead agency under CEQA for the proposed project.

Analysis of each environmental factor in this EIR/EIS includes discussion of the affected environment, environmental consequences (including construction impacts, permanent impacts, cumulative impacts, and indirect impacts) and avoidance, minimization, and mitigation measures for each project alternative, including No Action Alternative, Retrofit Alternative, and Replacement Alternative. The environmental conditions existing in 2007, when the Notice of Preparation (NOP) was issued and when the traffic counts were conducted, served as the baseline for impact analysis for each alternative evaluated in this EIR/EIS.

Under the Retrofit Alternative, impacts were analyzed based on the assumption that project construction would commence in 2014 and would last for 2.5 years (as outlined in Section 2.3.2 of this EIR/EIS). Impacts for the Replacement Alternative were analyzed based on the assumption that construction would commence in 2014 and would last for 4 years (as outlined in Section 2.3.3), during which time all traffic would be detoured to alternative routes as a result of the viaduct closure. Under the Replacement Alternative, three viaduct alignments and five bridge concepts were considered. Unless otherwise indicated, impacts would be the same for each alignment. Since impacts to most resources are independent of bridge concepts, impact from bridge concepts were analyzed only for the resources which would be impacted by bridge concepts, including Hydrology/Floodplain and Visual/Aesthetics. When the impacts were found to be potentially significant, as determined under CEQA, then mitigation measures were developed to reduce the impacts to a less than significant level. CEQA requires that each
significant effect on the environment resulting from the project be identified and, to the extent feasible, mitigated.

Under the No Action Alternative, the viaduct may be determined to be unserviceable by the City of Los Angeles and Caltrans due to advanced ASR deterioration or a major seismic event in the future, the timing of which cannot be predicted. Under such an event, the City would take the viaduct out of service and seek emergency funding sources to replace it. If this were to occur, it is estimated that the time to secure funding, complete design, acquire right-of-way (ROW), and construct a new viaduct could range between 5 and 7 years from the time it was placed out of service. Since, under those circumstances, the project would be considered an emergency, it would be Exempt by Statute under CEQA (PRC 21080[b]; 14 CCR 15260 et seq.) and a Categorical Exclusion under NEPA (23 U.S.C. 125). No environmental document would be required. It is estimated, based on similar projects, that securing full funding would take up to 1 year, design and right-of-way acquisition would take 1 to 2 years (could be done concurrently with funding), and construction would take approximately 4 years.

Under CEQA, thresholds are used to determine if project-related changes to the environment are significant (CEQA Guidelines Section 15064.7). Per NEPA regulations (40 Code of Federal Regulations [CFR] 1508.27), significance is based on context and intensity. The magnitude of the impact is evaluated, and no judgment of its significance is made in the document. Usage of the term “significance” in this document is made pursuant to CEQA only, and the evaluation of environmental factors pursuant to CEQA significance thresholds is confined to Chapter 4 and Appendix A, CEQA Checklist. Each section in Chapter 3 discusses the context and intensity of environmental impacts and mitigation measures, as required by NEPA.

In analyzing cumulative and indirect effects of the proposed project, the Council on Environmental Quality (CEQ) handbook entitled Considering Cumulative Effects under the National Environmental Policy Act (CEQ, 1997) and the FHWA position paper entitled Secondary and Cumulative Impact Assessment in the Highway Project Development Process (FHWA, 1992) were followed. Three major steps, which are parallel with the environmental impact assessment process, were used in analyzing cumulative effects. These consist of (1) scoping, (2) defining the affected environment, and (3) determining the environmental consequences.

### 3.1.1 Technical Studies

Environmental analyses presented in this chapter are primarily based on the following technical studies prepared for the 6th Street Viaduct Seismic Improvement Project.

Initial Site Assessment, 2008 and validated 2011.
Natural Environment Study, 2011.

The above technical studies are incorporated by reference and are available for review at the LABOE office and Caltrans District 7 office.

3.1.2 Governing Laws, Regulations, and Standards
The analysis in this document assumes that, unless otherwise stated, the project would be designed, constructed, and operated following all applicable federal and state laws, regulations, ordinances, and formally adopted City standards (e.g., Los Angeles Municipal Code and Bureau of Engineering Standard Plans). Also, this analysis assumes that construction would follow the uniform practices established by the Southern California Chapter of the American Public Works Association (e.g., Standard Specifications for Public Works Construction and the Work Area Traffic Control Handbook) as specifically adapted by the City of Los Angeles (e.g., The City of Los Angeles Department of Public Works Additions and Amendments to the Standard Specifications for Public Works Construction [also known as “The Brown Book,”] formerly Standard Plan S-610).

3.1.3 Resources Considered but Determined to not be Relevant
The following environmental resources were considered but determined to not be relevant due to their absence from the project area. Consequently, there is no further discussion regarding these resources in this document.

**Farmland/Timberland.** The project site is located in a highly developed, urban area of Los Angeles with no farmland or agricultural resources within the project area and vicinity.

**Coastal Zone.** The project site is not located within the designated coastal zone area.
Wild and Scenic Rivers. Where the project site is located, the Los Angeles River is concretelined and is in an industrial development area. It is not designated a wild and scenic river.

3.1.4 Resources Resulting in No Impacts
As part of the scoping and environmental analysis conducted for the project, the following environmental factors and resources were considered, but no potential for adverse impacts was identified. Consequently, there is no further discussion regarding these environmental factors in this document (see Appendix A, CEQA Checklist, for more information).

Growth. Growth within the project area and vicinity is controlled by the City of Los Angeles General Plan. The proposed project would retrofit or replace a seismically vulnerable viaduct, but it would not add traffic lanes/capacity; therefore, it is not considered growth inducing and would not directly or indirectly contribute to population growth.

Land use designations in the project area west of the Los Angeles River include heavy industrial (zoned M3), open space (zoned OS), and public facilities (zoned PF); land use designations in the project study area east of the river include heavy industrial (zoned M3), light industrial (zoned MR2), residential multi-family (zoned RD2), open space (zoned OS), public facilities (zoned PF), and highway oriented commercial (zoned C1). No residential dwellings are located in or adjacent to the 6th Street Viaduct footprint. The proposed project would not require the acquisition or displacement of residential housing. Under the replacement alternative, some manufacturing/commercial buildings located immediately adjacent to the viaduct footprint would need to be relocated, leaving some vacant land that might be available for redevelopment. Since this land is zoned for heavy industrial, redevelopment of the land for residential and/or mixed-use residential is not allowed unless it is rezoned by the City Planning Department. Future development decisions would be made through the planning process/protocols set forth by the City of Los Angeles Planning Department and are beyond the scope of this project.
PART I – HUMAN ENVIRONMENT

3.2 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. The information presented in this section is excerpted from the Community Impact Assessment\(^{12}\) prepared for this project.

3.2.1 Existing and Future Land Use

3.2.1.1 Affected Environment

Existing Land Use

The project is located within a fully developed, mixed-use urban setting surrounding a portion of the Los Angeles River (refer to Figure 1-2 in Chapter 1). The project is located at the boundary of the City of Los Angeles General Plan’s Central City North and Boyle Heights Community Planning areas. Land uses along the north and south sides of the viaduct are predominantly industrial and commercial. Railroad corridors exist along the east and west banks of the river. On the west bank of the river, the two tracks closest to the river are owned by the Los Angeles County Metropolitan Transportation Authority (MTA) and used by the Southern California Regional Rail Authority (SCARRA) to operate Metrolink trains. The five tracks west of the MTA tracks are owned by Burlington Northern Santa Fe (BNSF), and the rest of the tracks are owned by MTA and used for the Metro Red Line. Amtrak and BNSF also operate trains on MTA’s two tracks on the west bank. On the east bank, the two tracks closest to the river are owned by MTA, and the Union Pacific Railroad (UPRR) owns the rest of the tracks. UPRR also operates trains on MTA’s tracks on the east side of the river.

The Los Angeles River, which extends beneath the viaduct in a north-south direction, is confined to a trapezoidal concrete-lined channel. Within the proposed project vicinity, four 230-kilovolt (kV) high-voltage transmission towers, owned by the Los Angeles Department of Water and Power (LADWP), are located on each bank of the river on the north and south sides of the viaduct.

Existing buildings/structures located within the viaduct footprint include the City Department of Public Works Maintenance Facility office (located beneath the viaduct on the west side of the Los Angeles River between Santa Fe Avenue and Imperial Street); a river access tunnel (located beneath the viaduct on the west side of the Los Angeles River between Santa Fe Avenue and the

river), and buildings formerly owned by Ventura Foods, Inc. (located underneath the viaduct on the east side of the Los Angeles River west of Mission Road).

Development Trend
The project site is situated within the fully developed area of Downtown Los Angeles and the Boyle Heights community. Rehabilitation, reuse, and redevelopment activities in the downtown area are progressing very rapidly, while such activities in the Boyle Heights community are less apparent, which is evident from current property conditions in the vicinity. The area near the proposed project site west of the Los Angeles River, in the Arts District of downtown, has seen several adaptive reuse renovations of abandoned industrial buildings, which introduces residential uses to the primarily industrial district by converting the spaces into live/work units. Based on a review of ongoing and future foreseeable proposed projects within the area, many rehabilitation/reuse/redevelopment projects are proposed near the project study area, as summarized in Section 3.26.4 of this EIR/EIS.

Land Use Designation and Zoning
Land use designations in the project study area west of the Los Angeles River include heavy industrial (zoned M3), open space (zoned OS), and public facilities (zoned PF) (see Figure 3.2-1 for land use designations and Figure 3.2-2 for zoning designations). Land use designations in the project study area east of the river include heavy industrial (zoned M3), light industrial (zoned MR2), residential multi-family (zoned RD2), open space (zoned OS), public facilities (zoned PF), and highway oriented commercial (zoned C1). Existing land uses on both sides of the river reflect the land use and zoning designations.

---

13 Heavy Industrial (M3): This zone allows for Light Industrial use (M2), any industrial uses, nuisance type uses 500 ft from any other zone, No multiple residential uses.
14 Open Space (OS): This zone allows for parks and recreation facilities, nature reserves, closed sanitary landfill sites, public water supply reservoirs, and water conservation area.
15 Public Facilities (PF): This zone allows for agricultural uses, parking under freeways, fire and police stations, government buildings, post offices, public health facilities, and public elementary and secondary schools.
16 Restricted Light Industrial (MR2): This zone allows for restricted industrial use (zoned MR1), additional industrial uses, mortuaries, and animal keeping.
17 Restricted Density Multiple Dwelling (RD2): This zone allows for two-family dwellings.
18 Limited Commercial (C1): This zone allows for local retail stores greater than 100,000 square ft, offices or businesses, hotels, hospitals and/or clinics, parking areas, limited commercial uses (CR) except for churches, schools, museums, and multiple dwelling uses (R3).
Figure 3.2-1 Community Planning Area Land Use Map
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Figure 3.2-2 Zoning Designation Map
3.2.1.2 Environmental Consequences
This section describes potential construction, permanent, and indirect impacts of the three alternatives carried forward in this EIR/EIS, including No Action Alternative, Retrofit Alternative, and Replacement Alternative. Under the Replacement Alternative, there are three alignments and five bridge concepts being considered. Unless otherwise indicated, impacts would be the same to each alignment and bridge concept.

Construction Impacts

**Alternative 1 – No Action**
Under this alternative, the viaduct may be determined to be unserviceable due to advanced ASR deterioration or a major seismic event in the future, neither of which can be predicted. Under such an event, the City would take the viaduct out of service and seek emergency funding sources to replace it. If this were to occur, it is estimated that a period of up to 7 years may be required to have the new viaduct constructed. During this time, the viaduct would not be available to provide a link between the Boyle Heights community and the Downtown area. A traffic detour route via the 4th Street and 7th Street viaducts, and designated connecting north/south streets, would have to be used (see Section 3.7.3.1). Construction of a new viaduct would require removal of several commercial and industrial buildings along the viaduct alignment like that described under Alternative 3 – Replacement. Roadway obstruction from construction activities may limit the use of some properties located within the project vicinity. This impact would be localized and temporary for the period required to secure funding, complete design, and construct the new viaduct.

**Alternative 2 – Retrofit**
Implementation of Alternative 2 would not require full closure of the viaduct or adjacent streets; however, temporary lane closures on the viaduct are likely to occur, and adjacent streets could experience episodes of increased congestion as a result of construction. Moreover, access to businesses situated adjacent to the viaduct could be restricted. Any such effects would be localized, temporary, and of short duration.

**Alternative 3 – Replacement**
Construction of the Replacement Alternative would require removal of the existing 6th Street Viaduct and several commercial and industrial buildings along the viaduct alignment. Roadway obstruction from construction activities may limit the use of some properties located within the project vicinity. This impact would be localized and temporary.
Permanent Impacts

Alternative 1 – No Action
No impacts to land use and planning would occur under the No Action Alternative if the viaduct remains in service. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. The new viaduct would be designed to meet current standards, similar to that outlined under Alternative 3 – Replacement. Property acquisitions along the replacement alignment would be required to accommodate a new, wider viaduct. No zoning changes would be required as a result of the property acquisition. The impact to land use and zoning would not be substantial.

Alternative 2 – Viaduct Retrofit
The purpose of the proposed seismic improvement project is to preserve the 6th Street Viaduct as a viable east-west link between Downtown Los Angeles and the Boyle Heights community. Implementation of Alternative 2 would require removal of two existing properties, including the City of Los Angeles Maintenance Facility, which is located in the area beneath the viaduct on the west side of the river, and the Ventura Foods, Inc. buildings located on the east side of the river. These acquisitions would not require a revision to any of the adopted plans or policies at the local and regional levels. No zoning change would be required as a result of the proposed project. Therefore, there would be no impacts to land use and zoning.

Alternative 3 – Viaduct Replacement
Property acquisitions along the proposed alignment would be required to accommodate the new, wider viaduct. No zoning change would be required as a result of the property acquisition. The impact to land use and zoning would not be substantial.

Indirect Impacts
The Council on Environmental Quality (CEQ) defines secondary effects as those that are “caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable” (40 CFR 1508.8). Generally, these impacts are induced by the initial action. They comprise a wide variety of indirect effects, such as changes in land use, water quality, economic vitality, and population density.

Alternative 1 – No Action
No indirect impacts on land use and planning would occur as a result of the No Action Alternative implementation if the viaduct remains in service. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. If this were to occur, it is estimated that a period of up to 7 years may be required to have the new viaduct constructed. Several businesses located in close proximity to the viaduct may experience
access restrictions during the closure period of the viaduct or may be subject to relocation. Potential indirect impacts associated with business relocations would consist of hazardous materials from building demolition, noise, air quality, traffic and circulation, and parking.

Since the viaduct closure would be temporary, there would be no permanent impacts to land use and planning.

**Alternative 2 – Retrofit**
Implementation of Alternative 2 would require relocation of the City of Los Angeles Street Maintenance Facility, which is currently located west of the river beneath the viaduct. The maintenance facility could be relocated to the nearby area zoned as *Industrial* or *Commercial*. Application for a land use or zoning amendment or a conditional use permit may be required. Potential indirect impacts associated with the Maintenance Facility relocation would consist of noise, air quality, traffic and circulation, and parking. The level of impacts cannot be determined because a specific site has not been identified.

**Alternative 3 – Replacement**
Implementation of Alternative 3 would also require permanent relocation of the City of Los Angeles Maintenance Facility, as well as several businesses located adjacent to the viaduct on both sides of the river. Application for a land use or zoning amendment or a conditional use permit may be required. Potential indirect impacts associated with the business relocations would consist of hazardous materials from building demolition, noise, air quality, traffic and circulation, and parking.

### 3.2.1.3 Avoidance, Minimization, and Mitigation Measures

**Alternative 1 – No Action**
No mitigation is required as long as the viaduct remains in service.

In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. Prior to construction, the City would develop a Traffic Management Plan (TMP) for implementation to assist the local businesses and residents during construction. The TMP would identify and provide alternate traffic detour routes, pedestrian and bicycle routes, and residential and commercial access routes to be used during the viaduct closure period.

**Alternative 2 – Retrofit**
A Traffic Management Plan (TMP) would be developed to assist the remaining local businesses in continuing operation during the construction period. The TMP would identify and provide alternate traffic detour routes, pedestrian routes, and residential and commercial access routes to
be used during the construction period. In addition, the City mandated Work Area Traffic Control Plan (WATCP) would be strictly implemented by the contractor during project construction.

Refer also to Section 3.4.4 for measures to minimize impacts to businesses subject to relocation.

**Alternative 3 – Replacement**

Minimization measures would be the same as Alternative 2.

### 3.2.2 Consistency with State, Regional, and Local Plans and Programs

#### 3.2.2.1 Affected Environment

There are various types of plans that guide development within the project study area. These include General Plans, Redevelopment Plans, Specific Plans, and Master Plans. A General Plan is a comprehensive policy document that defines the type, amount, and location of future growth within a community. It must address the following seven State-prescribed elements: land use, circulation, housing, conservation, open space, noise, and safety. The Land Use Element of a General Plan identifies the proposed distribution and intensity of housing, business, industry, open space, natural resources, public facilities, waste disposal, and other categories of public and private land uses. Each local jurisdiction is required to have an adopted General Plan.

The following discussion describes the adopted plans within the project study area and applicable goals, policies, or objectives for this project.

**A. City of Los Angeles General Plan**

The City of Los Angeles’ Citywide General Plan Framework Element establishes the broad overall policy and direction for the entire General Plan. It provides a citywide context and comprehensive long-range strategy to guide the update of the General Plan’s other elements.

The City’s 35 community plans collectively comprise the Land Use Element of the General Plan. The Department of City Planning has established the New Community Plan Program (NCP) to study the land use plans for the 35 community plans to ensure that they are kept up-to-date to effectively guide growth. The aim of this update is to encourage sustainable growth patterns while balancing the unique character of individual communities. Infrastructure, design, transportation, and mobility issues are also being addressed in the update.

The proposed project’s study area includes portions of the Central City North and Boyle Heights Community Plans (see Figure 3.2-1). The Los Angeles River forms the boundary between these two community plan areas.
Central City North Community Plan

The Central City North Community Plan Area is adjacent to Downtown Los Angeles and is bound by the Los Angeles River to the east; the city of Vernon to the south; Alameda Street, Cesar Chavez Avenue, Sunset Boulevard, and Marview Avenue to the west; and Stadium Way, Lilac Terrace, and North Broadway to the north. It includes symbolic cultural centers for three prominent ethnic groups in the City of Los Angeles, encompassing Chinatown, parts of Little Tokyo, and the original Mexican pueblo.

The project area is located in one of the city’s major industrial districts – the South Industrial Area. The South Industrial Area is located between Alameda Street and the Los Angeles River, and between 3rd Street and US 101. Preservation of industrial land use designations is a primary objective of the Central City North Community Plan.

The project area is also located in the Artists-in-Residence (AIR) District, which is commonly referred to as the Arts District. The AIR District is located between I-5 and Interstate 10 (I-10) and between Alameda Street and the Los Angeles River. Although the largest concentration of artists is located outside of the project area between 1st Street and Palmetto Street and Alameda Street and the Los Angeles River, artists’ residences and businesses may be encountered in the project area.

The Central City North Community Plan was amended in December 2000. The Plan was developed in the context of promoting a vision of the Central City North area as a community that:

- Preserves and enhances the positive characteristics of existing residential neighborhoods while providing a variety of housing opportunities with compatible new housing.
- Improves the function, design, and economic vitality of the commercial corridors.
- Preserves and enhances the positive characteristics of existing uses that provide the foundation for community identity, such as scale, height, bulk, setbacks, and appearance.
- Maximizes the development opportunities of future transit systems while minimizing any adverse impacts.
- Plans the remaining commercial and industrial development opportunity sites for needed job-producing uses that will improve the economic and physical condition of the Central City North area.

---

Boyle Heights Community Plan

The Boyle Heights community, which is situated at the eastern boundary of the city, is surrounded by the city of Vernon to the south, the unincorporated community of East Los Angeles to the east, the communities of Lincoln Heights and El Sereno to the north, and the Los Angeles River to the west. Boyle Heights was developed as one of the first residential suburbs in Los Angeles when rail and rail-related uses began to expand and dominate the Los Angeles River corridor. Immigrants and residents employed by the railroads and related industrial sectors settled in the Boyle Heights area. Moreover, some of the first public housing projects were constructed in Boyle Heights.

The Boyle Heights Community Plan was amended in 1998. The plan was developed with similar purposes as described above for the Central City North Community Plan.

City of Los Angeles Industrial Land Use Policy

In January 2008, the City of Los Angeles Planning Department released the findings of the Industrial Land Use Policy project (ILUP). The ILUP, which is made up of Planning Department staff and City of Los Angeles Redevelopment Agency staff, gathered and analyzed information regarding the viability of the City’s industrial districts, particularly those areas currently experiencing pressure to be converted to other uses. The ILUP includes the industrial districts within the project study area, including the Central City North-Alameda (west of the Los Angeles River) and Boyle Heights (east of the Los Angeles River) industrial areas, respectively. The west side of the proposed project is located within the ILUP-designated Industrial Mixed Use District, areas that should remain predominantly industrial/employment use but that may support a limited amount of residential use according to the ILUP, and an Employment Protection District, where industrial zoning should be maintained and residential uses are inappropriate. Similarly, the east side of the proposed project falls within the area designated by the ILUP as Employment Protection District.

The recommendations of the ILUP establish guidance and short- and long-term direction, and identify needs for new land use and zoning code categories. The ILUP does not establish new land use plans or policies; current land use plans and policies contained in the General Plan and Redevelopment Plans for these areas are still valid.

---

B. Community Redevelopment Agency

The Community Redevelopment Agency of the City of Los Angeles (CRA/LA) has been Los Angeles' public partner in housing, commercial, neighborhood, and economic development for more than half a century. The CRA/LA is dedicated to revitalizing, refurbishing, and renewing economically underserved areas of Los Angeles. Since its creation in 1948, CRA/LA's main task is to lend a hand to investors willing to take risks for a more vibrant city, to neighborhood residents with renewed aspirations for their communities, and to those in need who strive to take part in the city's growing prosperity.

The CRA/LA adopts comprehensive plans for redevelopment areas. These plans provide guidelines and strategies for removing physical and economic blight and provide a vision, goals, and timetables for generating growth and new opportunities. Redevelopment plans are created with political, business, and community participation. The plans are the roadmap for spurring growth, creating new housing, and improving the quality of life and general welfare of the people who live and work in and around redevelopment areas.

CRA/LA has two redevelopment projects in the project study area, consisting of the Central Industrial Redevelopment Project and the Adelante Eastside Redevelopment Project. The two redevelopment projects conform to the corresponding community plans described above and are in accordance with local codes and ordinances.

The Central Industrial Redevelopment Project, which is located in Downtown Los Angeles just east of the commercial center, covers approximately 738 acres and is generally bound by 3rd Street on the north, the Los Angeles River on the east, San Pedro Street on the west, and Washington Boulevard and I-10 on the south (Figure 3.2-3). The Redevelopment Plan was adopted by the Los Angeles City Council on November 15, 2002. The redevelopment project aims for the revitalization and redevelopment of land to eliminate blight and remedy the conditions that caused it. The present priority project for the Central Industrial Redevelopment Project is the proposed Downtown Women's Center, which is located in the Renaissance Building at 434 S. San Pedro Street. The proposed project intends to provide public services and facilities necessary to address the needs of various social, medical, and economic problems of Central City residents, especially the Skid Row population.

---

The Adelante Eastside Redevelopment Project, which was adopted March 30, 1999, is located approximately 2 miles east of the downtown Central Business District. The approximately 2,200-acre industrial and commercial redevelopment project contains the areas south of Olympic Boulevard to the city limits of Vernon from the Los Angeles River to Indiana Street; North Main Street east to Valley Boulevard and Alhambra Avenue to the city limits of Alhambra; and all east-west commercial streets in Boyle Heights, such as Cesar Chavez Avenue, 1st Street, 4th Street, and Whittier Boulevard from the Los Angeles River to Indiana Street (Figure 3.2-4).  

The principal thrust of the proposed project is the preservation of industrial and commercial uses within the community to promote a stable industrial base to provide jobs for the community, as well as enhancing the existing shopping areas to provide alternative commercial choices for

---

residents. Currently, four priority proposed projects are within the Adelante Eastside Redevelopment Area: Sears Olympic Adaptive Reuse (southwest corner of Olympic Boulevard and Soto Street), Biomedical Tech Park (San Pablo and Zonal Streets, near the USC Health Sciences Campus Adelante Eastside), Metro Gold Line Eastside Extension (area bound by 6th Street, the Los Angeles River, and Cesar Chavez Avenue and Indiana Street), and Olympic Industrial Park Demonstration Project (bound by Olympic Boulevard on the north and Pico Boulevard on the south).

![Figure 3.2-4 Adelante Eastside Redevelopment Project Area](source: CRA/LA, 2007.)

**Figure 3.2-4 Adelante Eastside Redevelopment Project Area**

**C. City of Los Angeles Bicycle Plan**

The City of Los Angeles General Plan Transportation Element contains the Bicycle Plan for the City, which was first adopted in 1996 and re-adopted by the City Council in 2002 and 2007. The 2007 Bicycle Plan does not designate 6th Street or the Los Angeles River within the project area as a bikeway.

The Bicycle Plan was revised by the Planning Department and the mayor-appointed Bicycle Advisory Committee, and the Draft Bicycle Plan was released for public review in September.

The 2010 Bicycle Plan is guided by the following three major citywide goals:

- Increase the number and types of bicyclists who bicycle in the City.
- Make every street a safe place to ride a bicycle.
- Make the City of Los Angeles a bicycle-friendly community.

The 2010 Bicycle Plan designates 6th Street and Whittier Boulevard within the project limits as a bicycle lane. The roadway of the existing viaduct, having 12-ft outside lanes with no shoulders, cannot accommodate a bicycle lane.

D. Los Angeles River Revitalization Master Plan (LARRMP)

The LARRMP is the conceptual framework to guide the revitalization of the Los Angeles River. The 32-mile-long, 1-mile-wide river planning area extends from Topanga Canyon east to River Glen and south to approximately Washington Boulevard. The plan was approved by the City Council in May 2007. The LARRMP has not been integrated into the City of Los Angeles General Plan, nor have zoning or land use designations been revised to reflect the proposed elements of the plan. Implementation of LARRMP elements within the 6th Street project geographic area is not in the foreseeable future. For any elements of the plan to be implemented, they would have to undergo environmental review at the project level.

The LARRMP has specific goals for the revitalization of the river corridor, including:

- Establish guidelines for environmentally sensitive urban design, land use, and development for the Los Angeles River that will create economic development opportunities to enhance and improve river-adjacent communities; policies would include the provision of open space, housing, retail spaces, educational facilities, and places for other public institutions.
- Improve the environment, enhance water quality, and improve water resources and the ecological functioning of the river.
- Improve and restore natural native habitats, eradicate invasive non-native habitats, and provide links and connections to existing habitats.
- Provide and improve public access to the river.
- Provide significant recreation space and open space and new trails.
- Preserve and enhance the flood control features of the river.
Foster a growth in community awareness and pride in a revitalized Los Angeles River.

The 6th Street Viaduct Seismic Improvement project area lies within the “Downtown Industrial Opportunity Area,” which is one of the five demonstration areas of the LARRMP (Figure 3.2-5). There are currently two alternatives for development of the opportunity area: the DI-A and DI-B concepts. Both concepts designate 6th Street in the proposed project area as a Primary Arterial Green Street. The alternatives also propose an expanded multi-use and bicycle trail on the western bank of the Los Angeles River, and a promenade along the eastern bank of the river, each having its own underpass beneath the 6th Street Viaduct. In addition, both alternatives provide pedestrian bridge access ramps from the west side of 6th Street north to the proposed expanded trail. Alternative DI-A designates the area east of the river north of 6th Street as a Neighborhood Gateway, while Alternative DI-B establishes this area as a Regional Gateway.

Figure 3.2-5 Proposed Downtown Industrial Opportunity Area


25 Ibid.
E. Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization (MPO) for six southern California counties, including Imperial, Orange, Riverside, San Bernardino, Ventura, and Los Angeles. As such, it is responsible for preparing the Regional Transportation Plan (RTP), which provides the framework for all transportation system improvements planned for its jurisdiction. The RTP is one of several inputs used to develop the Regional Transportation Improvement Plan (RTIP) and State Transportation Improvement Program (STIP). The 6th Street Viaduct Seismic Improvement Project is included in the 2008 RTIP, in which the project is programmed for $245 million over a 6-year period, Fiscal Years 2008/9 to 2013/14. The RTIP is currently being amended to include the total project cost of $401.2 million.

3.2.2.1 Environmental Consequences

Alternative 1 – No Action

Under this alternative, the existing 6th Street Viaduct would not be compatible with the 2010 Bicycle Plan if the viaduct remains in service because it cannot accommodate a bicycle lane. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it, but it is estimated to take up to 7 years before the new viaduct could be completed. Bicycle travel between Boyle Heights and Downtown Los Angeles would have to be detoured for the period the viaduct is closed.

Once construction was complete, the consistency of the new viaduct with various plans and policies would be similar to that described under Alternative 3 – Replacement.

Alternative 2 – Viaduct Retrofit

City of Los Angeles General Plan

The purpose of the proposed seismic improvement project is to preserve the 6th Street Viaduct as a viable east-west link between Downtown Los Angeles and the Boyle Heights community. Implementation of Alternative 2 would require removal of two existing properties within the viaduct’s footprint. These acquisitions would not require a revision to any of the adopted plans or policies at the local and regional levels. The unused portion of the acquired land, if any, could continue to be used per the Community Plan’s objective.

The proposed seismic retrofit project would not be in conflict with the Central City North Community Plan or Boyle Heights Community Plan since the two community plans outline development objectives based on the assumption that the 6th Street Viaduct is in place.
Southern California Association of Governments
The proposed project is included in SCAG’s adopted RTIP for fiscal year 2008/2009 - 2013/14 under the Los Angeles County State Highway section, Lump Sum category for bridge projects. All projects incorporated into the 2008 RTIP are consistent with current RTP policies, programs, and projects; therefore, no conformity issues would arise.

Community Redevelopment Agency
Implementation of Alternative 2 would benefit the two redevelopment projects in the long term by maintaining a seismically sound transportation link between the east and west sides of the river to support the surrounding communities and businesses.

City of Los Angeles Bicycle Plan
Implementation of Alternative 2 would not be compatible with the 2010 Bicycle Plan because the retrofitted viaduct could not accommodate a bicycle lane.

Los Angeles River Revitalization Master Plan
The LARRMP provides a conceptual framework for future Los Angeles River planning. Construction of Alternative 2 would be confined within the existing viaduct “footprint.” No change to land use adjacent to the viaduct would occur. Therefore, this alternative would not support the conceptual goals of the LARRMP.

Alternative 3 – Viaduct Replacement
City of Los Angeles General Plan
Alternative 3 would preserve the 6th Street Viaduct as a viable east-west link between Downtown Los Angeles and the Boyle Heights community. Property acquisitions along the proposed alignment would be required to accommodate the new, wider viaduct. These acquisitions would not require revision of adopted plans or policies at the local or regional level. Property acquisitions would result in the loss of industrial buildings located adjacent to the viaduct (see Table 3.4.2 in Section 3.4 for more detailed information on ROW impacts). Among the three alignments considered, Alignment 3C would preserve the highest number of existing buildings on the east side of the river. The project area is within the designated Industrial Mixed Use District and Employment Protection District, as described in Section 3.2.1; therefore, removal of the industrial buildings would be in conflict with the Central City North Community Plan’s objective; however, the unused portions of the acquired properties could continue to be used according to the objectives of the Community Plan.

City of Los Angeles Industrial Land Use Policy
The proposed project is located within the ILUP designated Industrial Mixed Use District, areas that should remain predominantly industrial/employment use but that may support a limited
amount of residential use according to the ILUP, and an Employment Protection District, where industrial zoning should be maintained and residential uses are inappropriate. Similarly, the east side of the proposed project falls within the area designated by the ILUP as Employment Protection District. The loss of industrial and commercial uses would be inconsistent with the City of Los Angeles ILUP.

**Southern California Association of Governments**

As with Alternative 2, no conformity issues would arise since the proposed project is included in the 2008 RTIP.

**Community Redevelopment Agency**

Similar to Alternative 2, implementation of Alternative 3 would benefit the two redevelopment projects in the long term by maintaining the transportation link between the east and west sides of the river to support the surrounding communities and businesses. Depending on the alternative alignment selected, additional land acquisition along the proposed alignments would be required to accommodate the wider viaduct. These acquisitions would result in a loss of industrial buildings located adjacent to the viaduct (see Section 3.4 for more detailed information on ROW impacts). The loss of industrial and commercial uses would be inconsistent with the two redevelopment projects administered by CRA/LA; however, any unused portion of the acquired land to accommodate viaduct construction could be redeveloped for industrial uses.

**City of Los Angeles Bicycle Plan**

Implementation of any of the Alternative 3 alignments and bridge concepts would be consistent with the 2010 Bicycle Plan goals described in Section 3.2.2.1 C because the proposed viaduct would provide adequate space for a bike lane.

**Los Angeles River Revitalization Master Plan**

The LARRMP provides a conceptual framework for future Los Angeles River planning; however, the LARRMP has not been integrated into the General Plan, nor have zoning or land use designations been revised to reflect the proposed river revitalization elements, including those in the proposed project area. The viaduct design for the preferred alternative (Alternative 3) would be carried out taking into consideration future compatibility with revitalization plan elements in the immediate area to ensure that the project supports the conceptual goals of the LARRMP. The new bridge design could include stairways to allow pedestrians to access the local roadway around the viaduct footprint and the Los Angeles River.

### 3.2.3 Avoidance, Minimization, and Mitigation Measures

**Alternative 1 – No Action**

No mitigation is required as long as the viaduct remains in service.
In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. Loss of industrial buildings along the viaduct footprint to accommodate the new viaduct would be unavoidable; however, the unused portions of the acquired properties could continue to be used according to the objectives of the Community Plan and the Redevelopment Plan.

**Alternative 2 – Retrofit**

The existing viaduct would not be compatible with the 2010 Bicycle Plan. No mitigation is available to add the bicycle lane onto the existing viaduct.

**Alternative 3 – Replacement**

Loss of industrial buildings along the viaduct footprint is unavoidable; however, the unused portions of the acquired properties could continue to be used according to the objectives of the Community Plan and the Redevelopment Plan. In the same token, the unused portion of the acquired properties could be redeveloped to integrate into the LARRMP, any such use would have to go through the planning procedures set forth by the City of Los Angeles Planning Department.

### 3.2.4 Parks and Recreational Facilities

#### 3.2.4.1 Affected Environment

No parks and recreational facilities exist within 0.5-mile of the proposed project site. The closest park to the project site is Hollenbeck Park, which is located approximately 0.6-mile east of the 6th Street Viaduct. Based on the LARRMP, which guides revitalization of the 32-mile-long and 1-mile-wide river corridor within the city, recreational amenities are envisioned near the 6th Street Viaduct (see LARRMP description in Section 3.2.2.1 D). These LARRMP amenities are on private land; therefore, since the envisioned recreational amenities do not include publicly owned land, Section 4(f) of the U.S. Department of Transportation Act of 1966 (protecting public parks and recreation areas) does not apply.

#### 3.2.4.2 Environmental Consequences

There would be no impacts to parks and recreational facilities with implementation of any alternative.

#### 3.2.4.3 Avoidance, Minimization, and Mitigation Measures

None is required under any of the alternative implementation.
3.3 Community Impacts – Community Character and Cohesion

Community cohesion is the degree to which residents have a “sense of belonging” to their neighborhood, a level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually because of continued association over time. The information presented in this section is excerpted from the Community Impact Assessment prepared for this project.26

3.3.1 Regulatory Setting

The National Environmental Policy Act (NEPA) established that the federal government should 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]). In its implementation of NEPA (23 U.S.C. 109[h]), FHWA 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 by itself is not considered a significant effect on the environment; however, if a social or economic change is related to 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.

3.3.2 Affected Environment

3.3.2.1 Study Area Definition

The project study area is located east of Downtown Los Angeles and is highly developed and urban/industrial in character. The geographical area identified for community impact assessment covers the area that would potentially be either directly or indirectly affected by the proposed project activities. The primary impact area consists of the area in the immediate vicinity of the 6th Street Viaduct, which includes business and commercial buildings along the front row next to the viaduct footprint. These properties would be subject to direct effects, such as property acquisition or disruption from construction activities. Indirect impact areas would be dispersed and include areas likely to experience increased vehicle movements associated with construction-driven detour traffic. The indirect impact zone would be bound by 1st Street and 7th

Street to the north and south, respectively, and Soto Street and Central Avenue to the east and west, respectively.

### 3.3.2.2 Community Characteristics

There are two neighborhoods within the project area – the Downtown Arts District on the western side of the proposed project and the community of Boyle Heights on the eastern side – with both exhibiting strong community cohesion and a strong sense of historical connection to the development of the City.

**The Downtown Arts District**

The Downtown Arts District, which is located within the South Industrial Area, is roughly bound by 1st Street and 7th Street, the Los Angeles River, and Alameda Street. The district has its roots in the mid 1970s, and it has the oldest and largest contiguous neighborhood of Artists-in-Residence (AIR) lofts in southern California. Several AIR loft buildings are in the area, including the Factory Place Lofts at 1308 Factory Place just northwest of the project site, Lofts 726 at 726 S. Santa Fe Avenue, and 2121 Lofts at 2121 E. 7th Place located south of the project site. All of the AIR lofts in the area were once industrial buildings that have been converted into live/work spaces through the Adaptive Reuse Ordinance of 1999. The largest concentration of AIR lofts is located in the northern portion of the district between 1st Street and 4th Street; however, there has been a recent surge of AIR projects in the southern portion of the district near the proposed project, as is evident by the five proposed adaptive-reuse projects currently in various stages of development. Many of the AIR loft buildings offer residents amenities that foster community cohesion, including open galleries and rooftop spaces. The Arts District Business Improvement District (BID) plays a prominent role in encouraging and promoting community cohesion by organizing monthly art walks, weekly neighborhood walks, and a neighborhood watch program.

On April 27, 2002, the Downtown Los Angeles Neighborhood Council (DLANC) was certified as an approved City Neighborhood Council. Its mission is to unite the diverse communities of Downtown Los Angeles and to provide an innovative forum for all community stakeholders to contribute to a healthy, vibrant, and inclusive downtown. The DLANC is composed of three groups, including residents (i.e., renters and owners), business owners, and others (e.g., social service groups, artists, and laborers). It is served by 27 internal board members, and general board meetings are held monthly. The DLANC is very involved in issues that affect the downtown area.

---

27 Downtown Center Business Improvement District Web site (accessed November 2007).
The Boyle Heights Community

The Boyle Heights community is located east of the Los Angeles River. Boyle Heights was developed as one of the first residential suburbs in Los Angeles when the railroads were constructed along the Los Angeles River. It was initially settled by European immigrants and later by Mexican laborers employed by the railroads and related industrial sector. Some of the first City public housing projects were constructed in Boyle Heights, and much of the existing housing stock is in poor condition.\(^\text{28}\) The community was segmented into four smaller areas and one larger area by the construction of four major freeways between 1940 and 1960. In addition, the Los Angeles River divides Boyle Heights from the downtown area. The bridges over the Los Angeles River, including the 6\(^{th}\) Street Viaduct, have long served as a means of connecting Boyle Heights residents to downtown. Today, Boyle Heights is a predominantly Hispanic community.

Strong community cohesion in Boyle Heights is exemplified by the active citizen-participatory Boyle Heights Neighborhood Council (BHNC), which is divided into four quadrants – Quadrants 1, 2, 3, and 4 – covering the northeast, northwest, southeast, and southwest areas of Boyle Heights, respectively. Each quadrant has its own citizen members who meet monthly to discuss issues, proposed projects, and events in their respective communities. The 6\(^{th}\) Street Viaduct lies within BHNC Quadrant 4, which is the largest quadrant. The sense of community cohesion in Boyle Heights is strengthened by the history shared by successive generations of residents living in the community where they were raised.

In addition to being an important link between the Boyle Heights Community and Downtown Los Angeles, many Boyle Heights residents view the viaduct as a community landmark and an iconic emblem of the City of Los Angeles as a whole. The 6\(^{th}\) Street Viaduct used to be the venue for Festival de la Gente, which is an annual festival celebrating the traditional Latino holiday Dia de los Muertos, the Day of the Dead. The festival, which is a major community event celebrating Latino culture, first started in 1999. In recent years, the festival has been sponsored by the Los Angeles City Council member of the 14\(^{th}\) Council District in conjunction with the Speaker of the California Assembly, and Los Angeles City Mayor, with additional support by private corporate sponsors. The festival is the nation’s largest Día de los Muertos celebration and features local Hispanic artists and entertainers, and various food and crafts booths. It is held annually during the last week of October, one or two days before the Day of the Dead. In 2006, more than 70,000 people attended the celebration.

3.3.2.3 Socioeconomic Characteristics

Socioeconomic and demographic data for the study area were drawn from the year 2000 census, supplemented by a business survey conducted for the proposed project (note that at the time this Final EIR/EIS was prepared, 2010 census data were not available). The three census tracts under study cover the proposed project site, its immediate surrounding area, and the area in the vicinity that could be potentially affected by traffic detour routes during proposed project construction, consisting of tracts 2060.40, 2060.50, and 2046 (Figure 3.3-1).

Population Demographics

Year 2000 U.S. Census data from the three study census tracts were used to characterize population demographic characteristics of the proposed project area. The population of these census tracts is approximately 10,000 residents, which is approximately 0.3 percent of the population of the City of Los Angeles (Table 3.3-1). The percentages of working age (19 to 64) population within the study census tracts range from a low of 54 percent (Tract 2046) to a high of 66 percent (Tract 2060.50), which is similar to both the City and County of Los Angeles.

Table 3.3-2 presents the racial composition of the population in the study census tracts and the larger region. The study census tracts contain a higher percentage of Hispanic or Latino population (ranging from 61 to 97 percent) compared to the City and County of Los Angeles, which have approximately 45 percent Hispanic or Latino population. The percentage of white population within the census tracts under study is much lower than the City and County of Los Angeles. Based on this statistic, the study area is considered a predominantly minority community compared to the larger population within the County of Los Angeles.

Socioeconomic Demographics

According to Year 2000 U.S. Census data, 2,954 households are located within the study census tracts (see Table 3.3-3). The average household sizes in the three study census tracts (i.e., 2060.40, 2060.50, and 2046) of 2.8, 2.6, and 3.9 persons are essentially in the same range as the City and County of Los Angeles with 2.8 and 3.0 persons, respectively. The average family size in Tracts 2060.40 and 2060.50 of 3.8 persons and Tract 2046 of 4.2 persons is slightly higher than that of the City and County of Los Angeles at 3.6 persons.

As shown in Table 3.3-3, median annual household incomes within the three study census tracts range from $22,000 to $29,000. These numbers are much lower than the City and County of Los Angeles incomes of $36,000 and $42,000, respectively. The median annual family incomes for the study census tracts follow the same pattern as the household annual incomes.
Figure 3.3-1 Census Tracts in the Vicinity of the 6th Street Viaduct Seismic Improvement Project
### Table 3.3-1
**Study Census Tract Population Demographics**

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Tract 2060.40</th>
<th>Tract 2060.50</th>
<th>Tract 2046</th>
<th>City of Los Angeles</th>
<th>County of Los Angeles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Total Population</td>
<td>3,391</td>
<td></td>
<td>2,552</td>
<td></td>
<td>4,083</td>
</tr>
<tr>
<td>Population 19 or younger</td>
<td>1,050</td>
<td>31</td>
<td>588</td>
<td>23</td>
<td>1,494</td>
</tr>
<tr>
<td>Population 19 to 64</td>
<td>1,897</td>
<td>56</td>
<td>1,681</td>
<td>66</td>
<td>2,206</td>
</tr>
<tr>
<td>Population 65+</td>
<td>444</td>
<td>13</td>
<td>283</td>
<td>11</td>
<td>383</td>
</tr>
</tbody>
</table>


### Table 3.3-2
**Racial Composition of Population in the Study Census Tracts**

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Tract 2060.40</th>
<th>Tract 2060.50</th>
<th>Tract 2046</th>
<th>City of Los Angeles</th>
<th>County of Los Angeles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Total Population</td>
<td>3,445</td>
<td></td>
<td>2,488</td>
<td></td>
<td>4,083</td>
</tr>
<tr>
<td>White</td>
<td>267</td>
<td>8</td>
<td>527</td>
<td>21</td>
<td>53</td>
</tr>
<tr>
<td>Black or African American</td>
<td>120</td>
<td>3</td>
<td>242</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>American Indian and Alaska Native</td>
<td>13</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Asian</td>
<td>441</td>
<td>13</td>
<td>170</td>
<td>7</td>
<td>40</td>
</tr>
<tr>
<td>Native Hawaiian and Other Pacific Islander</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Some other race</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Two or more races</td>
<td>32</td>
<td>1</td>
<td>29</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>2,564</td>
<td>74</td>
<td>1,514</td>
<td>61</td>
<td>3,952</td>
</tr>
</tbody>
</table>

### Table 3.3-3
**Study Area Socioeconomic Characteristics**

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Tract 2060.40</th>
<th>Tract 2060.50</th>
<th>Tract 2046</th>
<th>City of Los Angeles</th>
<th>County of Los Angeles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>3,445</td>
<td>2,488</td>
<td>4,083</td>
<td>3,694,820</td>
<td>9,519,338</td>
</tr>
<tr>
<td>In Labor Force over 16</td>
<td>1,451</td>
<td>1,176</td>
<td>1,277</td>
<td>1,690,316</td>
<td>4,312,264</td>
</tr>
<tr>
<td>Per Capita Income</td>
<td>$10,662</td>
<td>$15,941</td>
<td>$8,343</td>
<td>$20,671</td>
<td>$20,683</td>
</tr>
<tr>
<td>Individual Earnings below Poverty Level</td>
<td>1,144</td>
<td>853</td>
<td>1,511</td>
<td>801,050</td>
<td>1,674,599</td>
</tr>
<tr>
<td>Total Families</td>
<td>622</td>
<td>336</td>
<td>865</td>
<td>807,039</td>
<td>2,154,311</td>
</tr>
<tr>
<td>Average Family Size</td>
<td>3.8</td>
<td>3.8</td>
<td>4.2</td>
<td>3.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Median Family Income</td>
<td>$27,750</td>
<td>$27,083</td>
<td>$22,182</td>
<td>$39,942</td>
<td>$46,452</td>
</tr>
<tr>
<td>Families below Poverty Level</td>
<td>202</td>
<td>111</td>
<td>284</td>
<td>147,516</td>
<td>311,226</td>
</tr>
<tr>
<td>Total Households</td>
<td>1,124</td>
<td>801</td>
<td>1,029</td>
<td>1,276,609</td>
<td>3,136,279</td>
</tr>
<tr>
<td>Average Household Size</td>
<td>2.81</td>
<td>2.57</td>
<td>3.91</td>
<td>2.83</td>
<td>2.98</td>
</tr>
<tr>
<td>Median Household Income</td>
<td>$22,143</td>
<td>$29,145</td>
<td>$21,875</td>
<td>$36,687</td>
<td>$42,189</td>
</tr>
</tbody>
</table>

Individual earnings in 1999 below the poverty level, which is defined as a minimum income level below which a person is officially considered to lack adequate subsistence and to be living in poverty, within the study census tracts were reported to be 33 to 37 percent, which is higher than that of the City of Los Angeles (22 percent) and the County of Los Angeles (18 percent).

Family incomes below the poverty level within the study census tracts are reported at 32 percent (Tract 2060.40) and 33 percent (Tracts 2060.50, and 2046), which is higher than that of the City of Los Angeles (18 percent) and the County of Los Angeles (14 percent).

The U.S. Department of Health and Human Services (HHS) establishes the poverty threshold on an annual basis. A family is considered “low-income” if its income is at or below the HHS poverty guidelines. The Year 1999 poverty threshold for an average family size of four was $16,700 (note that 1999 is used to be consistent with the 2000 census data). Based on the HHS thresholds for poverty, the study area is not at the poverty level; however, considering the “needs-based” poverty threshold developed by the Los Angeles Alliance for a New Economy (LAANE), the working poor (i.e., a working poor family must have at least one member who reported income from work in the last year) in Los Angeles County is defined as individuals with a total family income below 200 percent of the federal poverty level. The “need-based” poverty threshold was determined based on two criteria: the income levels at which families are still eligible for government anti-poverty programs, and the actual cost of living in Los Angeles County. Based on this study, the poverty threshold of the working population in Los Angeles County was $33,300 for a family of four in 1998. The study pointed out that during the 1990s, the number of poor families rose from 36 percent to 43 percent of the population in Los Angeles County, and accounted for 4.1 million residents according to the needs-based poverty threshold. Since the median annual household incomes within the three study census tracts range from $22,000 to $29,000, the study area population is considered low-income based on the “need-based” poverty threshold for Los Angeles County.

**Unemployment Rate**

Based on Year 2000 U.S. Census data, 12 percent of the population in the labor force within the study census tracts was unemployed at the time of the survey, which is higher than the City and County of Los Angeles unemployment of 8 to 9 percent (Table 3.3-4). Data in Table 3.3-4 also reveal that the workforce in the study census tracts use public transportation, walk, or bike to work at higher percentages than those in the City and County of Los Angeles as a whole.

---

### Table 3.3-4

Study Area Employment Data, Location of Work, and Means of Transportation to Work

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Tract 2060.40</th>
<th></th>
<th>Tract 2060.50</th>
<th></th>
<th>Tract 2046</th>
<th></th>
<th>City of Los Angeles</th>
<th></th>
<th>County of Los Angeles</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Total Population in the Labor Force</td>
<td>1,451</td>
<td></td>
<td>1.176</td>
<td></td>
<td>1,277</td>
<td></td>
<td>1,690,316</td>
<td></td>
<td>4,312,264</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>1,296</td>
<td>89</td>
<td>1,038</td>
<td>88</td>
<td>1,110</td>
<td>87</td>
<td>1,532,074</td>
<td>91</td>
<td>3,953,415</td>
<td>92</td>
</tr>
<tr>
<td>Unemployed</td>
<td>155</td>
<td>11</td>
<td>138</td>
<td>12</td>
<td>167</td>
<td>13</td>
<td>156,578</td>
<td>9</td>
<td>354,347</td>
<td>8</td>
</tr>
<tr>
<td>Location of Work:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work in Place of Residence</td>
<td>709</td>
<td>55</td>
<td>592</td>
<td>57</td>
<td>610</td>
<td>55</td>
<td>943,489</td>
<td>62</td>
<td>1,382,500</td>
<td>35</td>
</tr>
<tr>
<td>Worked outside Place of Residence</td>
<td>571</td>
<td>44</td>
<td>407</td>
<td>39</td>
<td>431</td>
<td>39</td>
<td>551,406</td>
<td>36</td>
<td>2,402,195</td>
<td>61</td>
</tr>
<tr>
<td>Means of Transportation to Work:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Car, Truck, or Van</td>
<td>889</td>
<td>69</td>
<td>649</td>
<td>63</td>
<td>710</td>
<td>64</td>
<td>1,203,143</td>
<td>79</td>
<td>3,296,964</td>
<td>83</td>
</tr>
<tr>
<td>Public Transportation</td>
<td>203</td>
<td>16</td>
<td>197</td>
<td>19</td>
<td>253</td>
<td>23</td>
<td>152,435</td>
<td>10</td>
<td>254,091</td>
<td>6</td>
</tr>
<tr>
<td>Walking, Bike, Motorcycle, Other Means</td>
<td>110</td>
<td>8</td>
<td>78</td>
<td>8</td>
<td>67</td>
<td>40</td>
<td>77,622</td>
<td>5</td>
<td>173,052</td>
<td>4</td>
</tr>
<tr>
<td>Worked at Home</td>
<td>78</td>
<td>6</td>
<td>75</td>
<td>7</td>
<td>11</td>
<td>1</td>
<td>61,695</td>
<td>4</td>
<td>134,643</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 3.3-5
Labor Force Data in Los Angeles County as of November 2010

<table>
<thead>
<tr>
<th>Area Name</th>
<th>Labor Force</th>
<th>Employment</th>
<th>Unemployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>County of Los Angeles</td>
<td>4,910,000</td>
<td>4,271,900</td>
<td>638,100, 13.0</td>
</tr>
<tr>
<td>City of Los Angeles</td>
<td>1,927,500</td>
<td>1,651,600</td>
<td>275,900, 14.3</td>
</tr>
<tr>
<td>East Los Angeles Census Designated Place (unincorporated East Los Angeles)</td>
<td>51,200</td>
<td>41,900</td>
<td>9,300, 18.1</td>
</tr>
</tbody>
</table>

Source: California Employment Development Department, 2010.

Table 3.3-6
Study Census Tract Housing Demographics

<table>
<thead>
<tr>
<th>Housing Demographic</th>
<th>Tract 2060.40</th>
<th>Tract 2060.50</th>
<th>Tract 2046</th>
<th>City of Los Angeles</th>
<th>County of Los Angeles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Total</td>
<td>1,071</td>
<td>791</td>
<td>1,027</td>
<td>228</td>
<td>1,275,412</td>
</tr>
<tr>
<td>Owner occupied</td>
<td>91</td>
<td>8</td>
<td>40</td>
<td>5</td>
<td>491,882</td>
</tr>
<tr>
<td>Renter occupied</td>
<td>980</td>
<td>92</td>
<td>751</td>
<td>95</td>
<td>783,530</td>
</tr>
</tbody>
</table>

Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

The unemployment rates reported by the California Employment Development Department (November 2010) show lower unemployment rates for the population in the labor workforce for the County and City of Los Angeles at 13.0 and 14.3 percent than the East Los Angeles area, respectively (Table 3.3-5). Although the data were not reported by census tract, the unemployment rate of 18.1 percent reported for East Los Angeles is higher than the city and county numbers.

Housing Demographics
Based on Year 2000 U.S. Census housing characteristic data, 2,090 houses were located in the three study census tracts, which is approximately 0.16 percent of the number of houses reported for the City of Los Angeles (see Table 3.3-6). Most of the housing within the study census tracts was renter occupied (ranging from 78 percent in Tract 2046 to 95 percent in Tract 2060.50), which is much higher than the City and County of Los Angeles at 61 and 52 percent, respectively. Note that the housing characteristic data clearly show a higher percentage of owner-occupied housing in the area east of the Los Angeles River than on the west side; however, the recent survey conducted by the Los Angeles Downtown Center Business Improvement District shows that more housing units in downtown Los Angeles were owned in 2006 (30.2 percent) than in 2004 (18.6 percent). According to this report, the increase in owner-occupied housing may be the result of the inclusion of newly developed condominium properties that recently opened; however, this number represents the entire downtown area and may not be a representative number for the project study area.

3.3.3 Environmental Consequences
3.3.3.1 Construction Impacts
Impacts on community character and cohesion are addressed by how proposed projects are likely to affect the people, institutions, neighborhoods, service delivery organizations, and overall social and economic systems surrounding a proposed undertaking.

The proposed project would involve a prolonged period of construction for both the retrofit and replacement alternatives. Area residents would endure greater impacts resulting from construction activities as compared to the surrounding population; however, once construction is complete, traffic circulation would soon return to normal.

Alternative 1 – No Action
The No Action Alternative would result in no impacts to community character and cohesion as long as the viaduct remains in service. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. If this were to occur, it is estimated

---

that a period of up to 7 years may be required to construct the new viaduct. During that time, the viaduct would not be available as a link between the Boyle Heights community and the Downtown area. A traffic detour route via the 4th Street and 7th Street viaducts, and north-south connecting streets, would have to be used. Construction of the new viaduct would require removal of several commercial and industrial buildings along the viaduct alignment like that described under Alternative 3. Roadway obstruction from construction activities may limit the use of some properties located in the project area. Events or festivals would likely not be held in the immediate area. These impacts would be localized and temporary for the period required to secure funding, complete design, and construct the new viaduct.

**Alternative 2 – Retrofit**

Construction of Alternative 2 would require partial viaduct lane closures and street closures beneath and adjacent to the viaduct for the duration of construction (up to 2.5 years). Community disconnection could occur on a temporary basis during the construction period. Implementation of a mandatory Work Area Traffic Control Plan (WATCP), outlined in the Standard Specifications for Public Works Construction and the Work Area Traffic Control Handbook, adopted by the City, would minimize traffic-related impacts. Area residents would be able to continue their normal social activities and stay connected during the construction duration. No adverse effects to community character and cohesion are anticipated.

During the construction phase, events or festivals could likely not be held at the viaduct area. This impact would be temporary and could be minimized by keeping event organizers informed of the construction schedule so that alternative venues could be identified.

**Alternative 3 – Replacement**

Implementation of Alternative 3 would require complete closure of the 6th Street Viaduct for approximately 4 years. Some local streets beneath and adjacent to the viaduct would also be subject to closure. Some businesses located adjacent to the construction zone along the viaduct would be affected during demolition. These effects would include temporary access detours, traffic lane closures, and noise impacts associated with construction activities.

Traffic detours and delays would impact motorists previously using the 6th Street Viaduct and local nearby roadways. With the traffic detour plan in place, area residents would be able to continue their normal social activities and stay connected during the construction period. No adverse effects to community character and cohesion are anticipated.

The results of the noise study (see Section 3.16) reveal no substantial impacts to sensitive receptors (e.g., residences, schools, hospitals) from equipment operation and traffic detours within the proposed project’s study area; however, manufacturing/commercial buildings located immediately
adjacent to the 6th Street Viaduct and residents living adjacent to the detour and material hauling routes would experience noise impacts associated with construction activities, such as pile driving and equipment transport, on an occasional basis. This impact is temporary, but unavoidable.

During the construction phase, events or festivals could likely not be held at the viaduct area. This impact would be temporary and could be minimized by keeping event organizers informed of the construction schedule so that alternative venues could be identified.

### 3.3.3.2 Permanent Impacts

**Alternative 1 – No Action**

No impacts on neighborhoods and community character or cohesion would occur as long as the viaduct remains open for public use. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. It is estimated that a period of up to 7 years may be required to construct the new viaduct. Long-term impacts on neighborhoods and community character or cohesion would be the same as that described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**

Implementation of the Retrofit Alternative would retain, albeit in an altered form, the historic viaduct and maintain the connection on 6th Street between the communities on the east side and Downtown Los Angeles for the life of the retrofitted viaduct. Furthermore, it would not require any new roadways or major detours, or obstruct the ongoing activities of the area neighborhoods; therefore, no impacts on neighborhoods and community character or cohesion would be expected to occur.

**Alternative 3 – Replacement**

Implementation of any alignment under the Replacement Alternative would maintain the connection on 6th Street between the communities on the east side and Downtown Los Angeles for the long term. Furthermore, it would not create any new roadways that transect any community or obstruct the ongoing activities of the area neighborhoods; therefore, no impacts on neighborhoods or community cohesion would be expected to occur.

The Replacement Alternative would, however, impact community character because it would require demolition of the historic viaduct. Many Boyle Heights residents view the viaduct as a community landmark and an iconic symbol of the City of Los Angeles as a whole. Based on comments received during the public information meetings, Community Advisory Committee (CAC) meetings, and scoping meetings, there are a range of preferences concerning proposed project implementation – some want the viaduct to remain in its original state with only retrofit performed on it; some want a replacement structure that replicates the existing viaduct (i.e.,
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Concept 1); and some want a nicely designed, modern landmark viaduct that reflects well on the community (e.g., Concepts 3, 4, 4A, and 5).

Residents in the Arts District also view the viaduct as an important symbol of the City. The Arts District BID plays a prominent role in encouraging its community members to stay involved in the various activities organized within the district. The BID representatives also actively participated in planning meetings for the proposed project. Several of the residents within the Arts District who participated in the CAC meetings expressed that their preference would be to see the 6th Street Viaduct remain as a City icon and a place to visit. Several expressed concern about the potential impacts to properties on the north side of the viaduct that would cause the businesses to relocate.

3.3.3.3  Indirect Impacts

Alternative 1 – No Action
No indirect impacts pertaining to community character and cohesion have been identified with implementation of the No Action Alternative as long as the viaduct remains in service. In the event the viaduct is determined to be unserviceable, operations of local businesses located within the vicinity of the viaduct may be disrupted, and some of them may choose to relocate out of the area. In addition, community events and festivals may not be held within the area around the viaduct for the period the viaduct is closed. Relocation of affected businesses out of the area could result in socioeconomic impacts due to the loss of employment and income. These indirect impacts would be temporary.

Alternative 2 – Retrofit
No indirect impacts pertaining to community character and cohesion have been identified with implementation of the Retrofit Alternative.

Alternative 3 – Replacement
No indirect impacts pertaining to community character and cohesion have been identified with implementation of the Replacement Alternative.

3.3.4  Avoidance, Minimization, and Mitigation Measures

Alternative 1 – No Action
No mitigation would be required for the No Action Alternative as long as the viaduct remains in service. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it to maintain the transportation link between the Boyle Heights community and the Downtown area. The City would keep area residents informed of the project construction schedule, traffic lane closures, and the traffic detour plan. A WATCP, subject to the approval of the LADOT, would be developed to minimize traffic impacts near the construction site. The TMP would be developed to 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.

The City of Los Angeles would keep major event organizers in the Boyle Heights and Downtown Arts District communities informed of the construction schedule to avoid any conflicts in the use of areas near the 6th Street Viaduct construction zone.

**Alternative 2 – Retrofit**

The proposed project contractor would be required to initiate and continue a public information and notification program to keep area residents informed of the project construction schedule, traffic lane closure schedule, and the traffic detour plan. A WATCP, subject to the approval of the LADOT, would be developed to minimize traffic impacts near the construction site. The TMP would be developed to 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.

The City of Los Angeles would keep major event organizers in the Boyle Heights and Downtown Arts District communities informed of the construction schedule to avoid any conflicts in the use of areas near the 6th Street Viaduct construction zone.

**Alternative 3 – Replacement**

Mitigation measures for Alternative 3 would be similar to Alternative 2 described above, with more frequent notices and follow-up to affected residents and business owners in the affected areas.
3.4 Community Impacts – Relocations and Business Disruption

This section addresses impacts to the communities as a result of required right-of-way (ROW) acquisitions and project construction activities. The information presented in this section is excerpted from the Community Impact Assessment prepared for this project and the Final Relocation Impact Report.

3.4.1 Regulatory Setting
The Caltrans Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 CFR Part 24, as summarized below. The purpose of the RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix D for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S.C. 2000d, et seq.), as summarized below.

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646)
Frequently referred to as the Uniform Relocation and Assistance Act or Uniform Act, this law provides uniform and equitable treatment of persons displaced from their homes or businesses by federally assisted programs. As implemented by the City of Los Angeles, “displaced persons” include any individual, family, corporation, partnership, or association required to move from real property or required to move personal property from real property acquired in part or in whole as the result of a written notice from the agency to vacate a property needed for a City project. Displacees may be entitled to moving cost reimbursements or replacement housing payments (i.e., purchase supplements, rental assistance, and down payments). The City’s implementation protocols also provide for the acquisition of real property on a fair market value, which permits displacees to obtain independent property appraisals and arbitration, if required.

Title VI – Civil Rights Act
Title VI of the 1964 Civil Rights Act provides one of the principle legal underpinnings for environmental justice. It states that “No person…shall, on the grounds of race, color, or national origin, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” Title VI prohibits recipients of federal funds from actions that reflect “intentional discrimination” or that

exhibit “adverse disparate impact discrimination” on the basis of race, ethnicity, or national origin. Executive Order 12898, entitled *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, effectively extended the provisions of Title VI to include minority and low-income populations (see Section 3.5.3 for analysis of potential environmental justice impacts) and required agencies to proactively develop strategies to:

- Identify activities to promote enforcement of all health and environmental statutes in areas with minority and low-income populations;
- Improve public participation by minority and low-income populations;
- Improve data collection and research related to the health and environment of minority and low-income populations; and
- Identify differential consumption patterns of natural resources by minority and low-income populations.

### 3.4.2 Affected Environment

Existing land uses within the project area are described in detail in Section 3.2.1. Information about land ownership and business use activities is summarized in Table 3.4-2.

### 3.4.3 Environmental Consequences

#### 3.4.3.1 Construction Impacts

To assess the ROW impacts as a result of the proposed project construction, the potentially affected properties around the viaduct corridor were first identified. A business survey was then conducted by the proposed project outreach team in September 2007 to learn about the nature of the businesses and operational requirements (see the survey form in Figure 3.4-1) of various businesses within the proximity of the proposed project corridor that have the potential to be affected by the proposed activities. The number of businesses that could be subject to partial or full displacement under each project alternative are summarized in Table 3.4-1 and graphically presented in Figures 3.4-2 and 3.4-3. A brief summary of property and business type, owner information, and potential specific impacts are presented in Table 3.4-2.

The following subsections describe potential impacts to various properties under each alternative based on the information summarized in Tables 3.4-1 and 3.4-2.
Figure 3.4-1 Business Survey Form
Table 3.4-1
Summary of Potentially Affected Properties

<table>
<thead>
<tr>
<th>Alternative Number</th>
<th>Alternative Description</th>
<th>Number of Businesses Affected (but not subject to relocation)</th>
<th>Number of Businesses to be Relocated</th>
<th>Total Number of Affected Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Action</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Alternative 2 (Retrofit with “Heavy Steel Casings”)</td>
<td>17</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>Alternative 3 (Replacement Alignment A)</td>
<td>19</td>
<td>11</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>Alternative 3 (Replacement Alignment B)</td>
<td>22</td>
<td>11</td>
<td>33</td>
</tr>
<tr>
<td>3</td>
<td>Alternative 3 (Replacement Alignment C)</td>
<td>22</td>
<td>8</td>
<td>30</td>
</tr>
</tbody>
</table>


Alternative 1 – No Action

No ROW acquisition would be required under this alternative as long as the viaduct remains in service. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. The new viaduct would be designed to meet current standards, similar to Alternative 3 – Replacement. The viaduct would have to be closed for up to 7 years before the new viaduct is complete. Property acquisitions along the proposed alignment would be required to accommodate the new, wider viaduct. Impacts to residents and businesses would be the same as described under Alternative 3.

Alternative 2 – Retrofit

Construction of Alternative 2 would require partial viaduct lane closures and partial street closures beneath and adjacent to the viaduct for the duration of construction (up to 2.5 years). Businesses located adjacent to the construction zone along the viaduct frontage roads between Mateo Street and Mesquit Street would experience periodic traffic congestion and access diversion to business entrances facing the frontage roads as a result of construction activities. Access to businesses during business hours would be provided either by staging the construction activity or by using existing alternate entrances or newly created temporary access from adjacent streets.

Under this alternative, the City of Los Angeles Bureau of Street Service Maintenance Yard (Maintenance Facility) located within the City’s ROW beneath the existing viaduct on the west side of the Los Angeles River (No. 5 on Figure 3.4-2) would need to be temporarily relocated or, at the City’s option, would be permanently relocated. In addition, the former Ventura Foods, Inc. buildings located on the east side of the river on the north side of the viaduct (No. 12 on Figure 3.4-2) would need to be relocated. As of October 2008, Ventura Foods, Inc., moved to a new location on a voluntary basis. The building is currently vacant. No impact to this business would occur.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

6th Street Viaduct Seismic Improvement Project

AFFECTED PROPERTIES LEGEND

1. Silver Seed Company
2. Alexandria Furniture
3. Lucky Head & Unique Treasures
4. Spike Worldwide
5. LA Bureau of Street Services
6. City of Los Angeles Ramp & Tunnel
7. Vacant Commercial Land
8. Van方方面面的 Checklist
9. Varied Railroads (Vacant Land)
10. Los Angeles River
11. Vanadium Railroads (Track for)
12. (Formerly) Ventura Foods, Inc.
13. Ace Beverage, Inc. (Wiring)
14. Ace Beverage, Inc. (Parking)
15. L&M Holdings, Inc. (Office, Storage, & Warehouse)
16. Cal Fire, Inc. (SB)
17. Variety Specialty Produce
18. Shalem & Sons Wholesale Foods (SB)
19. Elody Company
20. Jerry & Orit Kohn (Kalman Brothers)
22. Peppard Brothers
23. Caltrans
24. Cal Trans Freight Forwarder (2A, 3C)
25. Glasser Cold Storage (2A, 3C)
26. Union Pacific Land Resources Company
27. Allco, S.D. & Silver Development (2A, 3C)
28. Tulip (Shalom Tower) (Allco Development (2A, 3C)
29. garment Silk Screen (2A, 3C)
30. Edel & Glass (Vacant Commercial Property (2A, 3C)
31. Vacant Land (Development Service Properties) (2A, 3C)
32. Long Term, Inc.
33. Lumaka’s Taxi Service, Inc.

*Potentially Affected Properties under Alternative 2 - Rebuilt

Figure 3.4.2  Potentially Affected Properties
Alignments 3A, 3B, 3C, Except as Noted

October 2011
This page intentionally left blank.
Figure 3.4-3 Retrofit Alternative Acquisition and Easement

Figure 3.4-3 shows the acquisition and easement required for the Retrofit Alternative.

There would be no business access issues east of Mission Road since there are no frontage roads or business entrances facing the viaduct. The right to compensation, if any, for denying access to the sole point of access to a business would be addressed in the appraisal of the property rights to be acquired. East of Mission Road, below surface easements and construction easements in which reconstruction of some bridge bent footings is required would be acquired in accordance with the Uniform Relocation Act, as currently amended. Construction-related traffic impacts would be minimized by implementation of a Work Area Traffic Control Plan, as mandated by the LADOT.

Impacts to the operating railroads on both sides of the Los Angeles River (Nos. 8, 9, and 11 on Figure 3.4-2) are addressed in Section 3.6 of this EIR/EIS (refer to Table 3.6-2). Impacts to operations of the commuter rail lines, anticipated shutdowns, detours, and commuter line schedule could not be accurately identified at this stage, but they would be addressed in the Railroad Agreements. Emphasis would be to perform maximum work during the work windows permitted by the railroad companies and to minimize any impact to commuter train schedules by detouring rail traffic on adjacent available tracks.

The businesses that use the space under the viaduct for parking would be temporarily affected by the construction activities. While impacts to particular areas for a prolonged period of time are not anticipated, access to some businesses may be temporarily altered or disrupted. Interference with access to private properties from City streets may be considered a damage issue and would be addressed in the appraisal of property rights to be acquired to determine the right to compensation. As a result, any such interference must be individually examined on its own merits and a
determination made with regard to whether the level of interference triggers a right to compensation under state law.

The 6th Street Viaduct and adjacent areas are frequently used for movie production purposes. Roadway blockage and localized traffic congestion during the proposed project construction could disrupt these filming activities. The impacts could be minimized by providing advance notification of the construction schedule and roadway closure schedule so that production activities could be arranged accordingly.

**Alternative 3 – Replacement**

Implementation of Alternative 3 would require complete closure of the 6th Street Viaduct for approximately 4 years. Some local streets beneath and adjacent to the viaduct would also be subject to partial or full closure.

The replacement alternative 3A, 3B, and 3C horizontal alignments follow the same project corridor length, and the only difference between them is that they slightly shift horizontally to the south or north, more noticeably on the east side of the river. Construction impacts to businesses would be identical for all three alignments, except as noted in this section.

Businesses located adjacent to the construction zone along the viaduct would be affected during demolition of the existing viaduct and construction of the new structure. Potential impacts to businesses located west of Mission Road would be identical for all three alignments. Businesses located adjacent to the construction zone would experience a higher level of noise and dust, as well as periodic traffic congestion and access disruption, as a result of construction activities. Access to businesses during business hours would be provided either by staging the construction activity or by using existing alternate entrances or newly created temporary access from adjacent streets. The City Maintenance Facility (No. 5 on Figure 3.4-2) would have to be relocated, and the Ventura Foods, Inc. property (No. 12 on Figure 3.4-2) would need to be acquired. The right to compensation, if any, for restricting access to a business during construction would be addressed in the appraisal of the property rights to be acquired.

Properties identified for permanent acquisition and businesses identified to be permanently relocated (see Table 3.4-2 and Figures 3.4-2 and 3.4-4) are considered not impacted by construction because they would be vacated before commencement of the construction activities. East of Mission Road, the viaduct deck for Alignments 3A and 3B would span over the corner of a few buildings, while Alignment 3C would cantilever over all of the existing buildings by up to 12 ft on the north and south sides. The property or business owners may have a right to compensation.
### Table 3.4-2 Survey Information on Potentially Affected Nonresidential Properties in the Vicinity of the Project Area

<table>
<thead>
<tr>
<th>Number</th>
<th>Assessor's Parcel Number (APN/Address)</th>
<th>Parcel Owner</th>
<th>Type of Ownership</th>
<th>Establishment Located on Parcel</th>
<th>Type of Business and Size</th>
<th>Operating Status (Tenant or Owner)</th>
<th>Number of Occupants or Employees</th>
<th>Average Distance Employee Lives from Work</th>
<th>Special Need to Operate Business, including Parking</th>
<th>Relocation Issues Expressed</th>
<th>Type of Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3A, 3B, 3C</td>
<td>3164007020</td>
<td>Corporate owned</td>
<td>Stover Seed Co.</td>
<td>Wholesale distribution</td>
<td>Owner</td>
<td>20 to 30</td>
<td>More than 10-mile radius</td>
<td>Air quality permit for dust control; Employee parking in front of the building. Needs access on 6th Street for loading and unloading trucks. Cannot operate if street is blocked.</td>
<td>Full acquisition, relocate</td>
<td>West of Los Angeles River – North; Mateo Street to Santa Fe Avenue</td>
</tr>
<tr>
<td>2</td>
<td>3A, 3B, 3C</td>
<td>3164007017</td>
<td>Information not available</td>
<td>Shorkend Colin &amp; Beverly</td>
<td>Furniture manufacturing</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Survey form was not turned in</td>
<td>Full acquisition, relocate</td>
</tr>
<tr>
<td>3</td>
<td>3A, 3B, 3C</td>
<td>3164007017</td>
<td>Information not available</td>
<td>Shorkend Colin &amp; Beverly</td>
<td>Lucky Hoad</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Survey form was not turned in</td>
<td>Full acquisition, relocate</td>
</tr>
<tr>
<td>4</td>
<td>3A, 3B, 3C</td>
<td>3164007016</td>
<td>Corporate owned</td>
<td>Spilo Worldwide</td>
<td>Wholesale cosmetics manufacturing</td>
<td>Tenant</td>
<td>No response</td>
<td>No response</td>
<td>No response</td>
<td>Cannot operate if road access is closed</td>
<td>Full acquisition, relocate</td>
</tr>
<tr>
<td>5</td>
<td>2, 3A, 3B, 3C</td>
<td>No APN (Located under existing bridge)</td>
<td>Public agency</td>
<td>Los Angeles Bureau of Street Services Shop</td>
<td>City street maintenance facility</td>
<td>Owner</td>
<td>N/A</td>
<td>30 parking spaces under the bridge</td>
<td>Information not available</td>
<td>City’s facility</td>
<td>Relocate</td>
</tr>
</tbody>
</table>
| 31     | 3A, 3B, 3C                            | 3164008002   | Corporate owned  | Butterfield Trails, LP        | Film production            | Information not available | Information not available | Information not available | Information not available | Survey form was not turned in | Building and parking space; access to doors/gate on south side of property would be limited. Frontage road may have limited access. Business has another access from north side of the property. Aerial and/or temporary construction easement needed for some bridge concepts.  
| 7      | 3A, 3B, 3C                            | 3164004004   | Corporate owned  | Chalmers Santa Fe LLC         | Vacant land               | N/A | N/A | N/A | N/A | N/A | Vacant land; aerial easement on the north side of the viaduct needed. |
| 8      | 2, 3A, 3B, 3C                         | 3164004000   | Public agency    | LACMTA                         | MTA Tracks                | Owner | N/A | N/A | N/A | N/A | Electrified tracks; aerial and/or temporary construction and small surface easement needed for all alignment alternatives. Temporary closure of east track needed for Alternative 2. |
| 8      | 2, 3A, 3B, 3C                         | 3164004004   | Corporate owned  | Amtrak/BNSF                    | BNSF tracks               | Railroad | Owner | N/A | N/A | N/A | Tracks; aerial and/or temporary construction and small surface easement needed for all alignment alternatives. Temporary closure of west track (additional easement) needed for Alternative 2. |
### Table 3.4-2 Survey Information on Potentially Affected Nonresidential Properties in the Vicinity of the Project Area

<table>
<thead>
<tr>
<th>Number Noted on Figure 3.4-2</th>
<th>Alignment Affecting Properties</th>
<th>Assessor’s Parcel Number (APN/Address)</th>
<th>Parcel Owner</th>
<th>Type of Establishment Located on Parcel</th>
<th>Type of Business and Size</th>
<th>Operating Status (Tenant or Owner)</th>
<th>Number of Employees</th>
<th>Average Distance Employee Lives from Work</th>
<th>Special Need to Operate Business, including Parking</th>
<th>Relocation Issues Expressed</th>
<th>Type of Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>2, 3A, 3B, 3C</td>
<td>5164004901</td>
<td>SCRRA</td>
<td>Public agency</td>
<td>SCRRRA Tracks</td>
<td>Owner</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Trains; aerial and/or temporary construction and small surface easement needed for all alignment alternatives. Temporary closure of east track (additional easement) needed for Alternative 2.</td>
</tr>
<tr>
<td>10</td>
<td>2, 3A, 3B, 3C</td>
<td>5171014900</td>
<td>USACE/ LACFCD</td>
<td>Public agency</td>
<td>USACE (River)</td>
<td>Owner</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Riverbed/banks; aerial and/or temporary construction and small surface easement needed for Alternatives 2, 3A, 3B, 3C, depending on bridge concepts, pier may be in the river. River concrete lining would be impacted by foundation construction.</td>
</tr>
<tr>
<td>6</td>
<td>2, 3A, 3B, 3C</td>
<td>No APN (access ramp and tunnel)</td>
<td>City of Los Angeles</td>
<td>Public agency</td>
<td>Access ramp and tunnel</td>
<td>Access tunnel to river Tenant</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Ramp and tunnel are located within City ROW. Modifications to ramp and tunnel could be required for all alternatives.</td>
</tr>
<tr>
<td>32</td>
<td>2, 3A, 3B, 3C</td>
<td>5164015001</td>
<td>Michael Lumary</td>
<td>Partnership</td>
<td>Lumary’s Tire Service, Inc.</td>
<td>Truck tire retread plant Owner</td>
<td>20 to 30</td>
<td>More than 10 miles</td>
<td>Last tire retread plant in the City of Los Angeles. Closing or blocking 6th Street will completely disable operations. Some machinery is difficult to relocate.</td>
<td>Building; access to door on north side of the property will be limited. Frontage road will be blocked limiting access to the door on frontage road side. Access to door may be limited by bridge columns. Business has another access from Mesquit Street.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>3A, 3B, 3C</td>
<td>5164016903</td>
<td>National Railroad Corp. Amtrak</td>
<td>Corporate owned</td>
<td>Vacant land</td>
<td>Transit railroad Owner</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Open area; aerial easement needed for Alignments 3A, 3B, 3C. Surface easement needed for Alternative 3B.</td>
</tr>
<tr>
<td>9</td>
<td>3A, 3B, 3C</td>
<td>5164016803</td>
<td>BNSF</td>
<td>Corporate owned</td>
<td>Vacant land</td>
<td>Railroad Owner</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Open area; aerial and/or temporary construction and small surface easement needed for all alignment alternatives. Small surface easement required for Alternative 3B bridge foundation.</td>
</tr>
<tr>
<td>8</td>
<td>2, 3A, 3B, 3C</td>
<td>5164016906</td>
<td>LACMTA</td>
<td>Public agency</td>
<td>MTA tracks</td>
<td>Transit railroad Owner</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Electrified tracks; aerial and/or temporary construction and small surface easement needed for all alignment alternatives. Temporary closure of east track needed for Alternative 2 (surface easement).</td>
</tr>
</tbody>
</table>
Table 3.4-2 Survey Information on Potentially Affected Nonresidential Properties in the Vicinity of the Project Area

<table>
<thead>
<tr>
<th>Number Noted on Figure 3.4-2</th>
<th>Alignment Affecting Properties</th>
<th>Assessor’s Parcel Number (APN/Address)</th>
<th>Parcel Owner</th>
<th>Type of Ownership</th>
<th>Establishment Located on Parcel</th>
<th>Type of Business and Size</th>
<th>Operating Status (Tenant or Owner)</th>
<th>Number of Occupants or Employees</th>
<th>Average Distance Employees Lives from Work</th>
<th>Special Need to Operate Business, including Parking</th>
<th>Relocation Issues Expressed</th>
<th>Type of Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>2, 3A, 3B, 3C</td>
<td>5164016806</td>
<td>PAR SBE</td>
<td>Corporate owned</td>
<td>Amtrak/BNSF</td>
<td>Railroad</td>
<td>Owner</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Tracks; aerial and/or temporary construction and small surface easement needed for all alignment alternatives. Temporary closure of west track needed for Alternative 2 (surface easement).</td>
</tr>
<tr>
<td>8</td>
<td>3A, 3B, 3C</td>
<td>5164016807</td>
<td>BNSF</td>
<td>Corporate owned</td>
<td>Amtrak/BNSF</td>
<td>Railroad</td>
<td>Owner</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Tracks; aerial and/or temporary construction and small surface easement needed for all alignment alternatives. Temporary closure of east track needed for Alternative 2 (surface easement).</td>
</tr>
<tr>
<td>8</td>
<td>2, 3A, 3B, 3C</td>
<td>5164016909</td>
<td>LACMTA</td>
<td>Public agency</td>
<td>SCARRA</td>
<td>Transit railroad</td>
<td>Owner</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Tracks; aerial and/or temporary construction and small surface easement needed for all alignment alternatives. Temporary closure of east track needed for Alternative 2 (surface easement).</td>
</tr>
<tr>
<td>10</td>
<td>2, 3A, 3B, 3C</td>
<td>5170103900</td>
<td>USACE/ LACFCD</td>
<td>Public agency</td>
<td>USACE (River)</td>
<td>Laid river</td>
<td>Owner</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Riverbed/banks; aerial and/or temporary construction and small surface easement needed for Alternatives 2, 3A, 3B, and 3C; depending on bridge concepts, pier may be in the river. River concrete lining would be impacted by foundation construction.</td>
</tr>
<tr>
<td>11</td>
<td>2, 3A, 3B, 3C</td>
<td>5170104901</td>
<td>SCARRA/ LACMTA</td>
<td>Public agency</td>
<td>SCARRA tracks</td>
<td>Transit railroad</td>
<td>Owner</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Tracks; aerial and/or temporary construction and small surface easement needed for all alignment alternatives. Temporary closure of west track needed for Alternative 2 (surface easement).</td>
</tr>
<tr>
<td>11</td>
<td>3A, 3B, 3C</td>
<td>5170104809</td>
<td>UPRR</td>
<td>Corporate owned</td>
<td>UPRR tracks</td>
<td>Railroad</td>
<td>Owner</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Tracks; aerial and/or temporary construction and small surface easement needed for all alignment alternatives. Temporary closure of west track needed for Alternative 2 (surface easement).</td>
</tr>
<tr>
<td>11</td>
<td>2, 3A, 3B, 3C</td>
<td>5170104809</td>
<td>UPRR</td>
<td>Corporate owned</td>
<td>UPRR tracks</td>
<td>Railroad</td>
<td>Owner</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Industry track; aerial and/or surface easement needed for all alignment alternatives. Potential temporary closure of Ventura Foods, Inc., connection track. Surface easement for Alternative 2 and Alignment 3A.</td>
</tr>
<tr>
<td>12</td>
<td>2, 3A, 3B, 3C</td>
<td>5170104005</td>
<td>Wilsey Holsum Foods LLC (now Chalmers Malt)</td>
<td>Corporate owned</td>
<td>Ventura Foods, Inc.</td>
<td>Food processing, manufacturing, distribution</td>
<td>Owner</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Building was vacated in October 2008. Company is moving to Ontario, CA. Did not submit survey. Site/building/paved storage yard; business cannot operate during demolition. Full relocation would be required under all alternatives.</td>
<td></td>
</tr>
</tbody>
</table>

East of Los Angeles River – North and South: Los Angeles River to Mission Road

North Side of the Viaduct
<table>
<thead>
<tr>
<th>Number Noted on Figure 3.4-2</th>
<th>Alignment Affecting Properties</th>
<th>Assessor's Parcel Number (APN/Address)</th>
<th>Parcel Owner</th>
<th>Type of Ownership</th>
<th>Establishment Located on Parcel</th>
<th>Type of Business and Size</th>
<th>Operating Status (Tenant or Owner)</th>
<th>Number of Occupants or Employees</th>
<th>Average Distance Employees Lives from Work</th>
<th>Special Need to Operate Business, including Parking</th>
<th>Relocation Issues Expressed</th>
<th>Type of Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>2. 3A, 3B, 3C</td>
<td>5171013001 600 S. Mission Road</td>
<td>Duesenberg Investment Co</td>
<td>Corporate owned</td>
<td>Ace Beverage, Inc.</td>
<td>Beverage distribution</td>
<td>Tenant</td>
<td>More than 10-mile radius</td>
<td>Parking for large delivery trucks.</td>
<td>Company has more than 200 vehicles that are dispatched every day and stored at location.</td>
<td>Faved truck parking. Temporary construction and aerial easement needed for all alignment alternatives. Surface easement needed for Alternatives 3 A and 3 B. Permanent street easement and temporary construction easement required for Alternative 2.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>2. 3A, 3B, 3C</td>
<td>5171013002 1600 E. 6th Street</td>
<td>Duesenberg Investment Co</td>
<td>Corporate owned</td>
<td>Ace Beverage, Inc.</td>
<td>Beverage distribution</td>
<td>Tenant</td>
<td>More than 10-mile radius</td>
<td>Parking for large delivery trucks.</td>
<td>Company has more than 200 vehicles that are dispatched every day and stored at location.</td>
<td>Faved alley. Temporary construction and aerial easement needed for all alignment alternatives. Surface easement needed for Alternatives 3 A and 3 B. Permanent street easement and temporary construction easement required for Alternative 2.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>2. 3A, 3B, 3C</td>
<td>5171013003</td>
<td>Senegram Holdings</td>
<td>Corporate owned</td>
<td>Vacant land - alley</td>
<td>Information not available</td>
<td>Owner</td>
<td>Information not available</td>
<td>Needs loading docks located in front of the buildings</td>
<td>Alley is used for car parking for row of buildings along Anderson Street. Needs loading docks located in front of building.</td>
<td>Faved alley. Temporary construction and aerial easement needed for all alignment alternatives. Surface easement needed for Alternatives 3 A and 3 B. Small temporary construction easement for Alternative 2.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>2. 3A, 3B, 3C</td>
<td>5171012014 635 S. Anderson Street</td>
<td>Senegram Holdings</td>
<td>Corporate owned</td>
<td>Variety Specialities Produce</td>
<td>Produce distributor</td>
<td>Tenant</td>
<td>5 to 10</td>
<td>More than 10 miles</td>
<td>Six vehicles, including trucks. Need health department permit. Have permit from City to park under bridge.</td>
<td>Freezers and other equipment. Need tiled floors with drains.</td>
<td>Building. Full acquisition and relocation needed for Alternatives 3 A and 3 B. Aerial and temporary construction easement for Alternative 3 C. Subsurface and temporary construction easement required for Alternative 2. A small portion of building may need to be cut and refaced for Alternative 2.</td>
</tr>
</tbody>
</table>

**Table 3.4-2 Survey Information on Potentially Affected Nonresidential Properties in the Vicinity of the Project Area**

**South Side of the Viaduct**

**East of Los Angeles River – North; Mission Road to Anderson Street**
<table>
<thead>
<tr>
<th>Number Noted on Figure 3.4-2</th>
<th>Alignment Affecting Properties</th>
<th>Assessor’s Parcel Number (APN/Address)</th>
<th>Parcel Owner</th>
<th>Type of Ownership</th>
<th>Establishment Located on Parcel</th>
<th>Type of Business and Size</th>
<th>Operating Status (Tenant or Owner)</th>
<th>Number of Occupants or Employees</th>
<th>Average Distance Employee Lives from Work</th>
<th>Special Need to Operate Business, including Parking</th>
<th>Relocation Issues Expressed</th>
<th>Type of Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>2, 3A, 3B, 3C</td>
<td>5171012008 631 S. Anderson Street</td>
<td>Senegram Holdings</td>
<td>Corporate owned</td>
<td>Variety Specialties Produce</td>
<td>Same as above.</td>
<td>Same as above.</td>
<td>Same as above.</td>
<td>Same as above.</td>
<td>Same as above.</td>
<td>Same as above.</td>
<td>Buildings and parking. Temporary construction and aerial easement needed for Alternative 3B. Cal Fiber business continues north in other two buildings. Impact to operation of roof-mounted equipment will have to be accommodated.</td>
</tr>
<tr>
<td>16</td>
<td>3B</td>
<td>5171012006 and 5171012006 (south) 627 – 629 S. Anderson Street</td>
<td>Senegram Holdings</td>
<td>Corporate owned</td>
<td>Cal Fiber</td>
<td>Cal Fiber – Newspaper recycling and insulation for different products</td>
<td>Owner</td>
<td>5 to 10</td>
<td>More than 10 miles</td>
<td>All permits required by the City. Parking for 5 to 10 cars in front and back of building.</td>
<td>Extensive electrical machinery needed for operation of business. Machinery includes shredders, power unit, and ventilation that cover an entire side of the building.</td>
<td>Buildings and parking. Temporary construction and aerial easement needed for Alternative 3B. Cal Fiber business continues north in other two buildings. Impact to operation of roof-mounted equipment will have to be accommodated.</td>
</tr>
<tr>
<td>16</td>
<td>3B</td>
<td>5171012006 (north) 621 S. Anderson Street</td>
<td>Senegram Holdings</td>
<td>Corporate owned</td>
<td>Cal Fiber</td>
<td>Warehouse storage of raw materials and finished products</td>
<td>Owner and several tenants at same location</td>
<td>10 to 20</td>
<td>More than 10 miles</td>
<td>Parking for 5 to 10 cars in front and back of building.</td>
<td>Receives income from tenants and filming rental income.</td>
<td>Building. Aerial easement needed over small corner of the building for Alignment 3B.</td>
</tr>
<tr>
<td>16</td>
<td>3B</td>
<td>5171012015 619 S. Anderson Street</td>
<td>Senegram Holdings</td>
<td>Corporate owned</td>
<td>Cal Fiber</td>
<td>Warehouse storage of raw materials and finished products</td>
<td>Owner and several tenants at same location</td>
<td>Less than 5</td>
<td>No response</td>
<td>Parking 5 to 10 cars in front and back of building.</td>
<td>No response</td>
<td>No impact.</td>
</tr>
<tr>
<td>16</td>
<td>3B</td>
<td>5171012015 618 S. Anderson Street</td>
<td>Senegram Holdings</td>
<td>Corporate owned</td>
<td>Cal Fiber</td>
<td>Warehouse storage of raw materials and finished products</td>
<td>Owner and several tenants at same location</td>
<td>10 to 20</td>
<td>More than 10 miles</td>
<td>Parking for 25 to 30 cars and trucks in back of building.</td>
<td>Left blank</td>
<td>No impact.</td>
</tr>
<tr>
<td>17</td>
<td>3A, 3B, 3C</td>
<td>5171012012</td>
<td>Finiti Shalom Trust</td>
<td>Corporate owned</td>
<td>Vacant Land</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Open area/yard; full acquisition for Alternatives 3A and 3B. Aerial easement needed for Alternative 3C.</td>
</tr>
</tbody>
</table>

**East of Los Angeles River – South Mission Road to Anderson Street**

<p>| 24                         | 2, 3A, 3B, 3C                  | 5171016010 | Pacific Industrial Partners | Corporate owned | 634 S. Mission Road Cal Mono Freight Forwarder Inc. (E) | Freight handling, consolidating of frozen and refrigerated products | Subtenant to Glacier Cold Storage | 10 to 20 | More than 10 miles | Parking lot is located directly under the bridge. 8 parking spaces available. | Empty container holding. | Most of the operation takes place directly adjacent and under the bridge. Lot under the bridge is used to store large empty containers. No storage space if the bridge is closed. | Building and loading area; aerial and temporary construction easement needed for Alternatives 3A and 3C. Permanent street easement for Alternative 2. Temporary construction easement required for Alternatives 2 and 3B. |
| 25                         | 2, 3A, 3B, 3C                  | 5171016010 | Pacific Industrial Partners | Corporate owned | Glacier Cold Storage | Cold storage | Information not available | Information not available | Information not available | Information not available | Survey form was not turned in. | Building and yard area; aerial and temporary construction easement needed for Alternatives 3A and 3C. Temporary construction easement required for Alternatives 2 and 3B. A small portion of building may need to be cut and refaced. |
| 26                         | 2, 3A, 3B, 3C                  | 5171016011 | Union Pacific Land Resources Co | Corporate owned | Information not available | Vacant land | Information not available | Information not available | Information not available | Information not available | Information not available | Vacant land; alley used for parking by adjacent businesses. Aerial and temporary construction easement needed for Alternatives 3A and 3C. Temporary construction easement required for Alternatives 2 and 3B. |</p>
<table>
<thead>
<tr>
<th>Number Noted on Figure 3.4-2</th>
<th>Alignment Affecting Properties</th>
<th>Assessor’s Parcel Number (APN/Address)</th>
<th>Parcel Owner</th>
<th>Type of Ownership</th>
<th>Establishment Located on Parcel</th>
<th>Type of Business and Size</th>
<th>Operating Status (Tenant or Owner)</th>
<th>Number of Occupants or Employees</th>
<th>Average Distance Employees Lives from Work</th>
<th>Special Need to Operate Business, including Parking</th>
<th>Relocation Issues Expressed</th>
<th>Type of Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>3A, 3B, 3C</td>
<td>5171017008</td>
<td>Fitisu Shalom Trust</td>
<td>Corporate owned</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Survey form was not turned in</td>
<td>Building, aerial, and temporary construction easement needed for Alternatives 3A and 3C. Temporary construction easement for Alternative 3B. Temporary construction easement for Alternative 3C.</td>
</tr>
<tr>
<td>18</td>
<td>3B</td>
<td>5171006019</td>
<td>Fitisu Shalom Trust</td>
<td>Corporate owned</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Survey form was not turned in</td>
<td>Building, aerial, and temporary construction easement needed for Alternative 3B.</td>
</tr>
<tr>
<td>19</td>
<td>2, 3A, 3B, 3C</td>
<td>5171006018</td>
<td>J&amp;W Holdings</td>
<td>Corporate owned</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Survey form was not turned in</td>
<td>Loading dock/building. Full acquisition and relocation for Alternatives 3A and 3B. Aerial and temporary construction easement needed for Alternative 3C. Permanent street easement and temporary construction easement required for Alternative 2.</td>
</tr>
<tr>
<td>20</td>
<td>3B</td>
<td>5171005007</td>
<td>Jerry &amp; Orit Kohen</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Survey form was not turned in</td>
<td>Building, aerial and temporary construction easement needed for Alternative 3B.</td>
</tr>
<tr>
<td>21</td>
<td>3A, 3B, 3C</td>
<td>5171005008</td>
<td>Gustavo &amp; Violeta Ulloa</td>
<td>Individually owned</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>AQMD spray booth permit, parking and building on the street</td>
<td>Need complete access to front of building to load and unload furniture</td>
</tr>
<tr>
<td>21</td>
<td>2, 3A, 3B, 3C</td>
<td>5171005009</td>
<td>Gustavo &amp; Violeta Ulloa</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>Building, full acquisition and relocation for Alternatives 3A and 3B. Aerial and temporary construction easement needed for Alternative 3C. Permanent street easement and temporary construction easement required for Alternative 2.</td>
</tr>
<tr>
<td>21</td>
<td>3A, 3B, 3C</td>
<td>5171005013</td>
<td>Gustavo &amp; Violeta Ulloa</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>Storage yard area; full acquisition for Alternatives 3A and 3B. Aerial and temporary construction easement for Alternative 3C.</td>
</tr>
<tr>
<td>21</td>
<td>3A, 3B, 3C</td>
<td>5171005012</td>
<td>Rafael Raul</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Vacant land</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Open space, full acquisition for Alternatives 3A and 3B. Aerial and temporary construction easement needed for Alternative 3C.</td>
</tr>
<tr>
<td>22</td>
<td>3A, 3B, 3C</td>
<td>5171004017</td>
<td>William Peppard</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Information not available</td>
<td>Survey form was not turned in</td>
<td>Building, aerial and construction easement needed for all alignment alternatives.</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>3A, 3B, 3C</td>
<td>No number</td>
<td>Caltrans</td>
<td>Public agency</td>
<td>Caltrans</td>
<td>Public agency</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Sloping land east of Claremont Street. Aerial, surface, and construction easement needed for all alignment alternatives.</td>
</tr>
</tbody>
</table>
### Table 3.4-2 Survey Information on Potentially Affected Nonresidential Properties in the Vicinity of the Project Area

<table>
<thead>
<tr>
<th>Number Noted on Figure 3.4-2</th>
<th>Alignment Affecting Properties</th>
<th>Assessor's Parcel Number (APN/Address)</th>
<th>Parcel Owner</th>
<th>Type of Ownership</th>
<th>Establishment Located on Parcel</th>
<th>Type of Business and Size</th>
<th>Operating Status (Tenant or Owner)</th>
<th>Number of Occupants or Employees</th>
<th>Average Distance Employee Lives from Work</th>
<th>Special Need to Operate Business, including Parking</th>
<th>Relocation Issues Expressed</th>
<th>Type of Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>2, 3A, 3B, 3C</td>
<td>5171017007</td>
<td>2974 Properties Inc</td>
<td>Corporate owned</td>
<td>Jaim Image, Inc.</td>
<td>Garment, silk screen and painting</td>
<td>Tenant</td>
<td>5 to 10</td>
<td>5 to 10 miles</td>
<td>Large storage for special requirements to set power lines, air lines, and gas lines. Five parking spaces are needed.</td>
<td>Large open space area is needed for ventilation and product storage.</td>
<td>Building; aerial and temporary construction easement needed for Alternatives 3A and 3C. Permanent street easement for Alternative 2. Temporary construction easement required for Alternatives 2 and 3B.</td>
</tr>
<tr>
<td>28</td>
<td>3A, 3B, 3C</td>
<td>5171017800</td>
<td>Information not available</td>
<td>Information not available</td>
<td>(Rail Road?)</td>
<td>Vacant land</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Vacant land; aerial and temporary construction easement needed for Alternatives 3A and 3C. Permanent street easement for Alternative 2. Temporary construction easement required for Alternatives 2 and 3B.</td>
</tr>
<tr>
<td>29</td>
<td>2, 3A, 3B, 3C</td>
<td>5171017005</td>
<td>Rubel Raul</td>
<td>Information not available</td>
<td>Vacant land</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Vacant building; aerial and temporary construction easement needed for Alternatives 3A and 3C. Temporary construction easement for Alternative 3B.</td>
</tr>
<tr>
<td>29</td>
<td>3A, 3B, 3C</td>
<td>5171017006</td>
<td>Eddie &amp; Glass</td>
<td>Information not available</td>
<td>Vacant building</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Parking area; aerial and temporary construction easement needed for Alternatives 3A and 3C. Temporary construction easement for Alternative 3B.</td>
</tr>
<tr>
<td>30</td>
<td>3A, 3B, 3C</td>
<td>5171019005</td>
<td>Clarence Sunrise Properties</td>
<td>Information not available</td>
<td>Parking area</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Sloping land east of Clarence Street. Aerial, surface, and construction easement needed for all alignment alternatives.</td>
</tr>
<tr>
<td>23</td>
<td>3A, 3B, 3C</td>
<td>No Number</td>
<td>Caltrans</td>
<td>Public agency</td>
<td>Caltrans</td>
<td>Public agency</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: Survey conducted by Diverse Strategies for Organizing, Inc.
This page intentionally left blank.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Figure 3.4-4
Replacement Alternatives Acquisition and Easements
for such impacts. As a result, any such interference must be individually examined on its own merits and a determination made with regard to whether the level of interference triggers a right to compensation under state law.

As mentioned above, the viaduct and adjacent areas are frequently used for movie production purposes. Roadway blockage and localized traffic congestion during the proposed project construction could disrupt the filming activities occurring on a long-term (4-year) basis along the street network in the vicinity of the 6th Street Viaduct. The impacts could be minimized by providing advance notification of the construction schedule and roadway closure schedule so that production activities could be arranged accordingly. As the viaduct would be demolished with the replacement alternative, filming activities on, under, or immediately adjacent to the viaduct would not be possible until construction is completed. The impact is unavoidable.

3.4.3.2 Permanent Impacts

Alternative 1 – No Action

No relocation of residences or businesses would be required with the No Action Alternative as long as the viaduct remains in service. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. The new viaduct would be designed to meet current standards, similar to Alternative 3 – Replacement. Property acquisitions along the proposed alignment would be required to accommodate the new, wider viaduct. Impacts to residents and businesses would be the same as described under Alternative 3 below.

Alternative 2 – Retrofit

Residential Displacements

No relocation of residences would be required with Alternative 2 implementation.

Nonresidential Displacements

The City Maintenance Facility and the building formerly occupied by Ventura Foods, Inc. would need to be demolished. It is anticipated that the City Maintenance Facility would be relocated elsewhere within the City; therefore no permanent impact to the City facility would occur. Since Ventura Foods, Inc, has moved its business out of the area, no impact would occur to its operations.

Alternative 2 would potentially reduce horizontal clearance between the rail tracks and retrofitted columns of the bridge, which may not be acceptable to the railroads. Permanent impacts for Alternative 2 are summarized in Tables 3.4-1 and 3.4-2. No permanent business access loss would occur under Alternative 2 for the remaining businesses.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Alternative 3 – Replacement
The level of community and business disruption would be the same with respect to any bridge concept.

Residential Displacements
The area immediately surrounding the 6th Street Viaduct contains mostly industrial and commercial establishments. Based on present land use, no residential displacement would be required if any of the Alternative 3 alignments were implemented.

Nonresidential Displacements
The horizontal alignments 3A, 3B, and 3C of the Replacement Alternative follow the same corridor length, and the only difference between them is that they slightly shift horizontally to the south or north, more noticeably on the east side of the river. Permanent impacts to properties and businesses would be identical for all three alignments, except as noted in Tables 3.4-1 and 3.4-2. Alternative 3B, which swings the most to the north, would have maximum permanent impacts to properties and businesses, followed by alignments 3A and 3C. No permanent business access loss would occur under alignments 3A, 3B, or 3C for the remaining businesses. No permanent impact to the railroads and Los Angeles River operations would occur, except the footprint of the new viaduct would change and increase the air easement over these properties.

3.4.3.3 Indirect Impacts
Alternative 1 – No Action
No indirect impacts from relocations have been identified with implementation of the No Action Alternative as long as the viaduct remains in service. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. The indirect impacts under this circumstance would be the same as the impacts described under Alternative 3 – Replacement.

Alternative 2 – Retrofit
Implementation of Alternative 2 would require relocation of the City Maintenance Facility, which is located beneath the viaduct west of the river, to a new location. The facility currently houses approximately 30 maintenance vehicles and an average of 20 people working on the premises daily. The facility also contains a truck wash station and 2 underground gasoline storage tanks (1,000- and 500-gallon capacity, respectively). The replacement site for this facility would have to be in an area designated for commercial, light, or heavy industrial uses due to the nature of facility operation. Relocating the facility to a new site would necessitate change in zoning and land use unless the destination site is currently zoned for public (P) use.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

The City Maintenance Facility, which employs approximately 20 people, would likely be relocated to a nearby area; therefore, no effects to local employment are anticipated.

No employment information is available for Ventura Foods, Inc. (the facility owner did not return the business survey form), but it could be estimated to range from 20 to 30 people. As of October 2008, the former site of Ventura Foods, Inc. was vacant, and it is assumed that its operations have either relocated to another (out of project area) location or ceased; therefore, no impacts to employment due to the proposed project would occur to Ventura Foods, Inc.

After the retrofit is complete, the unused portions of buildings or land formerly occupied by Ventura Foods, Inc. might be used for other businesses, thus providing employment to the nearby community.

**Alternative 3 – Replacement**

Indirect impacts derived from implementation of Alternative 3 would be similar to those described under Alternative 2 but magnified as Alternative 3 would involve the relocation of more businesses than the Retrofit Alternative. Depending on the type of businesses, relocating existing businesses to new sites that are not in the industrial-designated area may cause indirect impacts due to land use/zoning incompatibility.

Based on preliminary survey data, more than 200 people are employed by potentially affected businesses in the proposed project area. These workers could experience employment suspension during the relocation of businesses; however, such effects would be expected to be temporary and extremely short term in cases when business owners are able to relocate their businesses to the nearby area where the former employees could be either retrained or rehired and are able to commute to work. If any business owners decide to close their businesses or relocate elsewhere, then the employment loss to local workers would be permanent. State unemployment benefits could offset the loss of income for the unemployed workers for those who qualify.

Several business owners stated during the Draft EIR/EIS public hearings that they would like to keep their businesses in Downtown Los Angeles even though they may have to move from the present location.

**3.4.4  Avoidance, Minimization, and Mitigation Measures**

**Alternative 1 – No Action**

No mitigation would be required for the No Action Alternative as long as the viaduct remains in service. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. The minimization and mitigation measures under this scenario would be the same as described under Alternative 3 below.
Alternative 2 – Retrofit
Extensive construction work would occur under the viaduct, requiring relocation of the City Maintenance Facility. Due to the 2.5 years of construction work, temporary relocation of the facility is not feasible. The City would relocate the facility to another location to accommodate the construction.

Partial or full acquisition of the property formally occupied by Ventura Foods, Inc. would be required to reserve the space for viaduct maintenance. The property, which is comprised of two parcels bifurcated by the existing viaduct’s ROW, is currently vacant and offered for lease by its owner. Several buildings are present on the site, one of which extends beneath the viaduct on City ROW under terms of a revocable permit. The City is in the process of revoking this permit.

Alternative 3 – Replacement
Impacts to businesses and properties along alignments 3A, 3B, and 3C on the west side of the river are similar and could not be minimized by modification of the alignment. On the west side of the river, alignment corridor 3B would result in the greatest impacts to businesses and properties compared to alignments 3A and 3C. Under each alignment corridor, the City would investigate the possibility of adjusting or modifying the proposed alignment to minimize impacts to business operations to the extent applicable. The City would also work with the potentially affected property owners to obtain the understanding of their respective operation needs and restrictions as part of the alignment refinement to minimize the impacts. In some cases restructuring of the existing business operations could be an option to avoid relocation.

The FRIR\textsuperscript{33} studied the possibilities of relocating nonresidential properties subject to displacement to similar sites within the surrounding area. The replacement area under study is generally bound by the CRA/LA Central Industrial Redevelopment Project, which is located within East Central Los Angeles adjacent to the project area on the west side of the Los Angeles River, and the Adelante Eastside Redevelopment Project, which is located on the east side of the river. Based on discussions with CRA/LA staff, the available area on the east side of the river is very limited for commercial/industrial uses.

The replacement study area is zoned for heavy industrial use (M3), and it is characterized by heavy and light industrial uses. It has good freeway access, but many surface routes were not designed for heavy truck traffic and are usually congested during business hours. Based on the FRIR, adequate resources appear to exist to relocate potentially affected businesses.

\textsuperscript{33} Final Relocation Impact Report 6\textsuperscript{th} Street Viaduct Seismic Improvement Project. April 2011.
Based on information from local real estate agents, the supply of potential replacement sites in other Los Angeles industrial regions is expected to remain adequate. Considering the existing congestion on local streets and/or other limitations of potential local replacement sites due to the aged infrastructure, some businesses may choose to re-establish in newer development areas (e.g., established industrial parks), thus benefiting from enhanced access and other infrastructure. In addition, market trends may compel some of the businesses to relocate outside of the displacement area.

All acquired property owners/businesses would receive fair market value for the project-required taking regardless of whether they are eligible for relocation benefits. Relocation assistance payments and counseling would be provided to persons and businesses subject to replacement in accordance with the Uniform Act. Based on the preliminary displacement study, properties are available for the affected businesses to move into within the CRA/LA Central Industrial Redevelopment Project area.

The City would work closely with businesses that are subject to partial acquisition to identify methods to minimize impacts to business operations as a result of the proposed project construction.

Special provisions to protect properties located adjacent to the viaduct would be included in the project construction specifications. Prior to demolition, the contractor would be required to submit the means and methods for demolition for City review and approval. During the demolition period, construction inspectors would ensure that the contractors adhere to the approved plan.

In addition, prior to the commencement of demolition and construction activities, the contractor would be required to submit a construction material hauling plan for review and approval by LADOT and LABOE. The material hauling plan would be developed to minimize traffic and noise impacts to the local residents and businesses by incorporating the following measures:

- Avoid hauling during peak hours
- Avoid using local streets that are heavily transited by commercial vehicles
- Avoid businesses and factories that generate high truck volumes
- Provide signing and flagging to promote traffic circulation
- Encourage night hauling if daytime traffic is too heavy
- Provide tow truck services along the designated hauling route(s)
3.5 Community Impacts – Environmental Justice

Potential environmental justice impacts are defined as those unavoidable adverse effects that would be disproportionately borne by minority and/or low-income populations. The information presented in this section is excerpted from the Community Impact Assessment prepared for this project.  

3.5.1 Regulatory Setting

All projects involving a federal action (i.e., funding, permit, or land) must comply with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which was 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 effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in project planning. 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.

Executive Order 12898

Executive Order 12898 focused attention on Title VI of the Civil Rights Act of 1964, which is a policy of the United States that prevents discrimination on the grounds of race, color, or national origin in connection with programs and activities receiving federal financial assistance, by providing that “each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

Department of Transportation Order 5610.2

In support of Executive Order 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, as embodied in the Executive Order, through the incorporation of those principles in all DOT programs, policies, and activities. The Order further states that this policy should be realized by

fully considering environmental justice principles throughout the planning and decision-making process using the principles of the National Environmental Policy Act, Title VI of the Civil Rights Act of 1964, the Uniform Relocation Assistance 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 address infrastructure planning and decision making.

The DOT Order (5610.2) on Environmental Justice provides clear definitions of the four minority groups addressed by the Executive Order. These groups are:

1. Black – a person having origins in any of the black racial groups of Africa
2. Hispanic – a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race
3. Asian American – a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands
4. American Indian and Alaskan Native – a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition

The FHWA Order defines "low-income" as "a person whose household income is at or below the Department of Health and Human Services (HHS) poverty guidelines." The HHS poverty guidelines are used as eligibility criteria for the Community Services Block Grant Program and a number of other federal programs; however, a state or locality may adopt a higher threshold for defining low income if the higher threshold is not selectively implemented and is inclusive of all persons at or below the HHS poverty guidelines. The 1999 poverty threshold for an average family size of four was $16,700 (note that 1999 is used to be consistent with the census data 2000).

DOT further clarifies that neighborhood and community boundaries and impacts should be considered in planning, programming, and project development activities, whether there are minority or low-income populations involved or not. Most importantly, the public should always be involved in defining the affected "neighborhood" and "community" through the public-involvement process, since the identification or definition of neighborhood and community boundaries can be subjective.

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
Enacted in 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) placed additional emphasis on environmental stewardship, as well as consideration of environmental issues, as a part of metropolitan and statewide transportation
planning, and the linking of planning and the environmental assessment process. Each of these aspects strengthens the linkages between planning and environmental protection and creates opportunities to examine the potential for environmental justice issues early on and throughout the project development process.

**Federal-Aid Highway Act of 1970**

This law established further basis for equitable treatment of communities affected by transportation projects. Agencies must assure that the adverse economic, social, and environmental effects of a federally supported highway project have been fully considered in developing the project, and that the final decisions on the project are made in the best overall public interest, taking into consideration the need for fast, safe, and efficient transportation; public services; and the costs of eliminating or minimizing such adverse effects.

**Executive Order 13166 – Improving Access to Services for Persons with Limited English Proficiency**

Executive Order 13166, which was issued by President Clinton in August 2000, requires federal agencies to “develop a system by which limited-English proficiency persons can meaningfully access…[federal] services [including participation in the project planning process] without unduly burdening the fundamental mission of the agency.” Federal agency response to this order has included the provision for oral language assistance, translating vital documents in languages other than English, and training staff to serve non-English speakers. As it applies to the proposed project, the Executive Order requires that written materials and oral presentations prepared for public dissemination be made available to limited-English speakers and readers.

### 3.5.2 Affected Environment

Based on population demographic data presented in Section 3.3.2, the study area (Census Tracts 2060.40, 2060.50, and 2046) is considered a predominantly minority community compared to the larger population within Los Angeles County. Based on socioeconomic data described in Section 3.3.2, the study area population is also considered to be low income based on the “need-based” poverty threshold for Los Angeles County.

### 3.5.3 Environmental Consequences

#### 3.5.3.1 Construction Impacts

A range of impacts from construction activities that were considered in the environmental justice analysis includes business and community disruption, minority-owned or low-income residential and business displacement, air quality, noise, and traffic disruption and detours from

---

construction activities resulting from closure of traffic lanes or the viaduct. Of these impacts, only traffic impacts would be predominately borne by the near-construction-zone community, while the benefits of the completed project would be enjoyed by the entire region; thus, the proposed construction impacts would cause disproportionately high adverse effects on minority and low-income populations for both the retrofit and replacement alternatives.

**Alternative 1 – No Action**

No disproportionate impacts to minority or low-income populations would occur under the No Action Alternative as long as the viaduct remains in service. In the event the viaduct is determined to be unserviceable, it is the responsibility of the City of Los Angeles to seek emergency funding sources to replace it. Under this scenario, Alternative 1 would cause disproportionately high adverse effects on nearby minority and/or low-income populations, related to more circuitous transit, bicycle, and pedestrian circulation, per Executive Order 12898 regarding environmental justice.

**Alternative 2 – Retrofit**

Alternative 2 would cause some inconvenience to local residents and business owners within the project area and its vicinity over the duration of construction (up to 2.5 years) due to periodic lane closures, traffic congestion, and access restrictions. Although full closure of the viaduct may be necessary on an occasional basis, long-term detours are not anticipated. 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. Residents and businesses in the area adjacent to the viaduct would experience impacts from traffic congestion resulting from material hauling along the designated hauling route(s) and occasional closures of traffic lanes near or on the viaduct. Nearby residents who are dependent on public transit, bicycles, or walking within the area near the viaduct would be more affected by the temporary closure of traffic lanes, bicycle paths, and pedestrian routes.

No residences would require relocation as a result of proposed construction activities. One city facility (Maintenance Facility) would need to be relocated. As described in Section 3.4.3.3, this relocation is not expected to cause any loss of employment and is not anticipated to create an adverse impact to local workers.

Occasionally, some homeless people are present near and around the bridges along the Los Angeles River, including the 6th Street Viaduct. The City of Los Angeles would assist the homeless in finding shelters in accordance with Los Angeles Municipal Code Section 41.49, the Los Angeles Homeless Services Authority (LAHSA). No impacts to the homeless would occur.
Because nearby residents who are dependent on public transit, bicycle, or walking within the area near the viaduct would be more affected by the temporary closure of traffic lanes, bicycle paths, and pedestrian walkways, 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.

**Alternative 3 – Replacement**

The level of impacts pertaining to environmental justice would be the same for any bridge concept or alignment alternative.

The study area is considered a predominantly minority community compared to the larger population within Los Angeles County, and the population is considered low income; therefore, the proposed 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, as discussed in the following paragraphs.

The construction of Alternative 3 is estimated to take up to 4 years, and the viaduct would be fully closed during this time. As a result, traffic along the local street networks on both sides of the river would have to be rerouted away from the 6th Street Viaduct, which would increase the volume of motor vehicles on other streets within the project area (see Section 3.7 for a discussion of the detour routes and traffic impacts during construction). Residents living closer to the construction site, the detour routes, or the construction materials hauling routes would receive disproportionately high adverse effects from traffic congestion compared to the larger populations.

Local trips utilizing the 6th Street Viaduct total approximately 11,500 vehicles per day, out of the daily average of 13,260 (see Section 3.7.2.3). Based on this information, it appears that the 6th Street Viaduct serves the local population more than regional commuters; therefore, the predominantly minority community would also be disproportionately impacted by greater travel time and cost when traveling east-west on the less convenient, out-of-direction detour routes for the 4-year construction period.

As indicated in Table 3.4-1, several businesses within the proposed project limits would need to be permanently relocated as a result of right-of-way (ROW) acquisition. Based on the results of the business survey (Table 3.4-2), owners of potentially affected properties are either public agency or privately owned businesses. None of the privately owned business owners identified themselves as being minority owners; therefore, environmental justice impacts in this regard are not anticipated.
Relocation of the businesses described above could also cause low-income and likely predominantly minority workers (note that accurate information regarding the racial composition of workers is not available) to lose their jobs. Several business owners stated during the Draft EIR/EIS public hearings that they would like to keep their businesses in Downtown Los Angeles even though they may have to move from the present location. It is likely that the workers from businesses subject to relocation would be hired back by their employers once the relocation is completed.

Based on the FRIR\textsuperscript{36} for this proposed project, there appears to be adequate space within the CRA/LA Central Redevelopment Project area for potentially impacted businesses to relocate. The affected business owners would be offered relocation benefits to the extent allowed by law in accordance with the provisions of the Uniform Act.

Alternative 3 would not require any temporary or permanent residential displacements; therefore, no minority or low-income residents would be relocated.

Occasionally, some homeless people are present under the 6\textsuperscript{th} Street Viaduct. In accordance with Los Angeles Municipal Code Section 41.49, the LAHSA would be contacted to provide services to any homeless people found within the project area prior to construction. No impacts to the homeless population would occur.

### 3.5.3.2 Permanent Impacts

**Alternative 1 – No Action**

With the No Action Alternative, there would be no impacts to local residents or area business owners as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would have to seek emergency funding sources to replace it in order to maintain this important transportation link between the Boyle Heights community and the Downtown area. As described in Section 3.5.3.2, minority and low-income populations who live closer to the viaduct and traffic detour routes would receive disproportionately higher and adverse effects than the larger populations for a longer period of time; however, after construction of the new viaduct, no impacts pertaining to environmental justice would remain.

**Alternative 2 – Retrofit**

No disproportionately high and adverse effects on minority or low-income populations would occur on a permanent basis with implementation of the Retrofit Alternative.

\textsuperscript{36} Final Relocation Impact Report 6\textsuperscript{th} Street Viaduct Seismic Improvement Project. April 2011.
Alternative 3 – Replacement

The project does not propose construction of additional traffic lanes on the viaduct; therefore, there would be no long-term (i.e., postconstruction) traffic volume increase to the Boyle Heights and downtown industrial area as a result of Alternative 3. Although Alternative 3 proposes to construct a wider viaduct, this is to provide standard sidewalks, shoulders/bikeways, and a safety median.

Based on the above discussion and analysis, the replacement viaduct (Alternative 3) would not cause disproportionately high and adverse effects on minority or low-income populations.

In addition, Alternative 3 is compatible with two planning visions for this location: 1.) the LARRMP, and 2.) the CCNCP and the Boyle Heights Community Plan. Consistent with the LARRMP, the replacement viaduct could create economic development opportunities to enhance and improve river-adjacent communities, including potential development of retail spaces, educational facilities, or other public institutions on the unused portions of the acquired land, as well as providing public access to the river. Alternatively, consistent with the CCNCP and the Boyle Heights Community Plan, the replacement viaduct could create industrial development opportunity sites for needed job-producing uses on the unused portions of the acquired land. Figure 3.4-3 in Section 3.4.3 shows the areas where existing buildings would be either partially or fully acquired to provide ROW for the new viaduct.

It should be noted that land immediately adjacent to the 6th Street Viaduct is zoned for heavy industrial uses. Future redevelopment of the vacated land resulting from the proposed replacement alternative would have to go through the planning process established by the City of Los Angeles Planning Department. Impacts from potential redevelopment of the unused portion of acquired land are beyond the scope of this project.

3.5.3.3 Indirect Impacts

No indirect impacts pertaining to environmental justice have been identified with implementation of Alternative 2 – Retrofit or Alternative 3 – Replacement. Under Alternative 1 – No Action, if the viaduct was determined to be unserviceable, the City would have to seek emergency funding sources to replace it in order to maintain this important transportation link between the Boyle Heights community and the Downtown area. The viaduct would have to be closed for up to 7 years. Minority and low-income populations who live closer to the viaduct and traffic detour routes would receive disproportionately higher and adverse effects than the larger populations for a longer period of time. The level of impacts may be elevated if other

construction activities are taking place during that same period in close vicinity of the 6th Street Viaduct.

3.5.4 Avoidance, Minimization, and Mitigation Measures

**Alternative 1 – No Action**

No mitigation is required under this alternative as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, then the City would have to seek emergency funding sources to replace it in a timely manner to maintain this important transportation link between the Boyle Heights community and the Los Angeles Downtown area. Mitigation measures described under Alternative 3 below would be applicable during construction of the new viaduct.

**Alternative 2 – Retrofit**

The following mitigation measures would be implemented to minimize disproportionately high and adverse impact to the area residents:

- 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 would also identify and provide alternate traffic detour routes, construction materials hauling routes, bus stops, transit routes and operation hours, pedestrian and bicycle routes, and residential and commercial access routes to be used during the construction period.

- Prior to the commencement of demolition and construction activities, the contractor would be required to submit a material hauling plan for review and approval by Caltrans, LADOT, and LABOE. The material hauling plan would be developed to minimize traffic and noise impacts to the local residents and businesses by incorporating the following measures:
  - Avoid hauling during peak hours
  - Avoid using local streets that are heavily transited by commercial vehicles
  - Avoid businesses and factories that generate high truck volumes
  - Provide signing and flagging to promote traffic circulation
  - Encourage night hauling if daytime traffic is too heavy
  - Provide tow truck services along the designated hauling route

- The construction contractor would be required to adhere to the requirements of existing rules and regulations set forth by the South Coast Air Quality Management District (SCAQMD), as outlined in Section 3.15.4 of this EIR/EIS.
• The construction contractor would be required to implement equipment noise control and administrative measures outlined in Section 3.16.4 of this EIR/EIS.

• The Los Angeles Homeless Services Authority (LAHSA) would be contacted to provide services to any homeless people found within the project area prior to construction.

**Alternative 3 – Replacement**

In addition to the mitigation measures described under Alternative 2 above, the City would implement the following measures to further minimize impacts to the area residents as a result of Alternative 3 implementation.

• Prior to demolition activities, the contractor will be required to submit the means and methods for demolition to Caltrans and City of Los Angeles for review and approval. During the demolition period, construction inspectors will ensure that the contractors adhere to the approved plan.

• Implement mitigation measures proposed in Section 3.7.4 to minimize impacts at 2 of the 13 affected intersections. The rest of the impacted intersections could not be mitigated without causing further ROW impacts. These two mitigation measures consist of:
  - Install new traffic signals at the intersection of 4th Street and I-5 SB on-/off-ramps/Gertrude Street, and connect to Los Angeles City ATSAC system.
  - Restripe to add an EB right-turn lane at the intersection of 4th Street and Soto Street.

• The City of Los Angeles would actively participate in the community planning process to redevelop the vacated area around the 6th Street Viaduct with consideration to provision of recreational, retail, cultural, or other amenities through the planning process.

• The City of Los Angeles would provide improvements to enhance the aesthetics of the affected intersections along the proposed detour routes.

• The City of Los Angeles would actively participate in implementation planning for the LARRMP to improve the area near the 6th Street Viaduct to the extent feasible, in accordance with the objectives set forth in the Master Plan.

✧ ✧ ✧
3.6 Utilities and Emergency Services

This section addresses potential impacts to public utilities and emergency services that would result from construction and operation of the proposed project. Public utilities include electricity, natural gas, water and wastewater facilities, storm drains, telecommunications, oil pipelines, and solid waste disposal. Emergency services include law enforcement, fire protection, and ambulance service. For each of the utilities and service systems discussed, existing infrastructure, levels of service, and capacity are described.

3.6.1 Affected Environment

The study area for utilities and emergency services impact assessment includes the area immediately adjacent to the 6th Street Viaduct and surrounding area that is likely to experience increased vehicle movements associated with construction-related detour traffic. The potentially affected area is generally bound by 1st Street to the north, 7th Street to the south, Central Avenue to the west, and Soto Street to the east.

3.6.1.1 Utilities

Electricity

The LADWP currently supplies electricity to the study area. LADWP owns and operates several overhead and underground transmission and distribution lines in the project area. One 230-kilovolt (kV) underground transmission line runs along the north frontage road and two 230-kV underground lines run along the South Frontage Road from Mateo Street to a substation yard on Santa Fe Avenue just south of south frontage road. LADWP poles located along the north and south frontage roads support 34.5-kV overhead electrical transmission lines from Mateo Street toward Santa Fe Avenue. Along both sides of the river embankment, four transmission towers are located within the vicinity of the 6th Street Viaduct, two each on the north and south sides of the viaduct (see Figure 1-3). The closest tower to the south is located on the east bank approximately 45 ft from the southern edge of the viaduct, and the closest tower on the north side is located on the west bank approximately 104 ft from the northern edge of the viaduct. In addition, electrical conduits and overhead lines run along the same alignment as the transmission lines, as well as along the streets that intersect the viaduct from Mateo Street to Clarence Street. The 6th Street Viaduct is also lined with lampposts owned by the City of Los Angeles.

Natural Gas

The Southern California Gas Company supplies natural gas to the project area. There are approximately 13 gas distribution pipelines within the project area, 3 of which are abandoned. The gas lines are owned and operated by the Southern California Gas Company. Two active lines run along the 6th Street frontage roads – a 6-inch line at the south frontage road and a 4-inch line at the north frontage road from Mateo Street to Santa Fe Avenue. The remaining gas lines in the
project area are mostly located under the viaduct at the intersecting streets (i.e., Mateo Street, Imperial Street, Santa Fe Avenue, Mesquit Street, Mission Road, Anderson Street, and Clarence Street).

**Water**
LADWP provides domestic water to the project area. Three active water lines run along the frontage roads – an 8-inch line on the north frontage road and a 6-inch line and 8-inch line on the South Frontage Road, respectively. There is also a 6-inch abandoned water line along south frontage road. These four lines run from Mateo Street eastbound (EB) ending at the intersection with Mesquit Street. There is also an active 8-inch water line that runs from Clarence Street to the east and under the viaduct.

There are four additional active water lines that cross under the viaduct at the intersections with Santa Fe Avenue (8-inch line), Mission Road (8-inch line), Anderson Street (8-inch line), and Clarence Street (12-inch line).

**Storm Drains**
The City owns and operates the storm drain systems in the study area, and the United States Army Corp of Engineers (USACE) owns the Los Angeles River Channel. The stormwater flows generated in the study area ultimately discharge into the Los Angeles River. For the area under the viaduct and west of the Los Angeles River, two storm drain lines (15-inch-diameter and 36-inch-diameter) appear to collect locally generated flows. The 15-inch storm drain located at the corner of Mateo Road discharges into a 36-inch line, which is tributary to the 97-inch storm drain sewer No. 3. The 36-inch storm drain, which appears abandoned, runs from Mateo Street along the south frontage road toward a manhole east of Mesquit Street and west of the Los Angeles River, and finally discharges to the river channel.

The area north of the viaduct and east of the river channel is a mostly industrial area that is served by two major drain lines: a 30-inch line running north to south along Mission Road and a 42-inch line running along Clarence Street and discharging into a 62-inch trunk line at the intersection with Jesse Street. The 62-inch storm drain also collects the flows conveyed by two large pipes draining areas north of the viaduct and west of US 101.

In addition, a drainage network placed underneath the concrete-lined Los Angeles River channel was built by USACE.

**Wastewater**
The City of Los Angeles Bureau of Sanitation provides wastewater and sanitary sewer services for the project area. There are 10 active sewer lines within the project limits. An 8-inch line serves the north frontage road, and two 8-inch lines serve the south frontage road from Mateo
Street to Santa Fe Avenue prior to connecting to a 36-inch main sewer line at Santa Fe Avenue. There is also one 8-inch abandoned sewer line underneath the viaduct from Mateo Street to Santa Fe Avenue. Sewage flows generated by the industrial area north of the viaduct at Mission Road are transported via a large twin-concrete siphon conduit crossing under the Los Angeles River bed to the west bank of the river and continue to join the 36-inch main at Santa Fe Avenue. The project area east of the river channel at the intersection with Mission Road, Anderson Street, and Clarence Street includes large sewer pipes (60-inch, 10-inch, and 12-inch-diameter lines, respectively), all flowing in a southerly direction.

**Telephone, Cable, and Fiber Optics**
Multiple telephone, cable, and fiber-optic lines are located in the study area. These facilities run above and below the ground, along the viaduct sidewalk, and along south frontage road and Mesquit Street. The following companies own and operate telephone, cable, and/or fiber-optic lines in the project area:

- AT&T
- Bell System
- Western Union

**Solid Waste**
The City of Los Angeles Bureau of Sanitation provides curbside pickup for solid waste within the project study area. Regional planning for solid waste facilities in the area is under the jurisdiction of Los Angeles County, which is the local enforcement agency under integrated waste management laws. The Los Angeles County Sanitation District oversees the operation of landfills that would accept solid waste generated during construction of the proposed project. The County and City encourage source reduction and recycling objectives that meet or exceed the requirements of State Assembly Bill (AB) 939. AB 939 mandates a 50 percent reduction in waste volumes from 1990 levels by 2010. The Solid Waste Resources Citywide Recycling Division of the Bureau of Sanitation provides guidance for the recycling of construction and demolition debris. In addition, hazardous waste can be landfilled or recycled at several facilities throughout the state. Any hazardous waste generated within the study area is managed in accordance with federal and state requirements. The nearest landfill to the proposed project site is Puente Hills Landfill, which is located in the City of Industry. The newly opened Puente Hills Material Recovery Facility is at the same location and could be used for material recycling purposes.

**3.6.1.2 Railroads**
Railroad corridors exist along the east and west banks of the river. On the west bank of the river, the two tracks closest to the river are owned by SCRRRA and are used primarily by Metrolink
trains. The five tracks west of the SCRRA tracks are owned by BNSF, and the rest of the tracks are owned and operated by the MTA. Amtrak also operates trains on a BNSF track and an MTA track on the west bank. On the east bank, the two tracks closest to the river are owned by SCRRA, while Metrolink and the UPRR use those tracks. The remainder of the ten tracks are owned by UPRR and utilized by UPRR and Ventura Foods Spur.

3.6.1.2 River Access Tunnel
A City of Los Angeles tunnel is located under the 6th Street Viaduct on the west side of the river. The tunnel was constructed as part of the viaduct, and consists of an access ramp with retaining wall on both sides of the ramp, portals (entrance), and tunnel (see Figure 1.3). It provides access to the Los Angeles River from the frontage road on the south side of the viaduct at the Santa Fe Avenue intersection.

3.6.1.3 Emergency Services
The project study area is under the jurisdiction of the Los Angeles Police Department (LAPD) Central Bureau. The project area west of the Los Angeles River is served by the Central Area Community Police Station, which is located approximately 1-mile west of the proposed project. The project area east of the Los Angeles River is served by the Hollenbeck Community Police Station, which is located approximately 2 miles northeast of the project site.

The Los Angeles Fire Department (LAFD) provides fire protection and other emergency services throughout the project area. Two fire stations are located near the proposed project: LAFD #9, which is located approximately 1-mile west of the project site, and LAFD #25, which is located approximately 2 miles east of the project site.

Table 3.6-1 lists the locations of the police and fire stations serving the project area.

3.6.2 Environmental Consequences
3.6.2.1 Construction Impacts
Alternative 1 – No Action
Under this alternative, there would be no construction activities on the viaduct or its vicinity; therefore, there would be no temporary impacts to utilities and emergency services within the project study area as long as the viaduct is in operation.

If the viaduct was determined to be unserviceable, the City would have to seek emergency funding sources to replace it in order to maintain this important transportation link between the Boyle Heights community and the Downtown area. The viaduct would have to be closed for up to 7 years to complete construction. Traffic detours to the 4th Street and 7th Street viaducts, and connecting north-south streets, would occur. Impacts to utilities and emergency services would be the same as described under Alternative 3, but for a longer period of time.
Table 3.6-1
Emergency Response Providers in the Project Study Area

<table>
<thead>
<tr>
<th>Emergency Provider</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Community Police Station</td>
<td>251 E. 6th Street, Los Angeles, CA 90014</td>
</tr>
<tr>
<td>Hollenbeck Community Police Department</td>
<td>1936 E. 1st Street, Los Angeles, CA 90033</td>
</tr>
<tr>
<td>Los Angeles Fire Station #9</td>
<td>430 E. 7th Street, Los Angeles, CA 90014</td>
</tr>
<tr>
<td>Los Angeles Fire Station #25</td>
<td>2927 Whittier Boulevard, Los Angeles, CA 90023</td>
</tr>
</tbody>
</table>

Source: Community Impact Assessment (Parsons, 2011).

Alternative 2 – Retrofit

Utilities

Construction of Alternative 2 could result in temporary impacts to utilities, such as an increase in utility demand and solid waste volume. Construction activities would utilize machinery and tools that require more electrical power consumption than is currently used for the 6th Street Viaduct, local streets, and affected properties. This increase in electrical usage would be temporary, and the contractor would be able to tap into the City of Los Angeles’ existing power grid or would generate power onsite. Construction activities for Alternative 2 would not cause a substantial increase in the existing demand for electricity or require the development of new sources.

Construction of Alternative 2 would involve foundation work that would require temporary relocation of many underground utility lines, such as sewer pipes and storm drain lines. The City of Los Angeles would work in close coordination with the utility providers to develop a relocation plan to minimize possible impacts and disruption to service utilities.

Construction of the Retrofit Alternative is not expected to result in a large amount of solid waste. No impacts to local solid waste facilities are anticipated.

Railroads

Construction of Alternative 2 would result in potential periodic shutdown of some railroad tracks on each side of the river to modify existing bent columns and foundations, and to construct shear walls. Interruptions of railroad activity would be temporary and scheduled to accommodate their continuing use. Table 3.6-2 summarizes anticipated impacts to railroad operations due to the proposed construction activities. Bent 12 would be excluded from retrofitting because of the lack of room available for construction of the column encasement due to the proximity to the railroad tracks. Written construction agreements would be entered into with the railroad companies. Close coordination with the railroad owners to gain agreement on allowable work near the railroads during periods when they are not in operation and avoidance of track closures would minimize the impacts to railroad operations. In addition, the California Public Utilities Code requires approval from the Public Utilities Commission (PUC) for construction or alteration of
crossings, and it grants the PUC exclusive power on design, alteration, and closure of crossings. A request of authorization would be submitted to the Rail Crossing Engineering Section (RCES). The design criteria of the proposed project would comply with the PUC General Orders (GOs), such as GO 26-D: “Clearance on railroads and street railroads as to side and overhead structures, parallel tracks and crossings.”

### Table 3.6-2
**Potential Impacts to Railroads under Retrofit Alternative**

<table>
<thead>
<tr>
<th>Railroad Facility</th>
<th>Existing Condition</th>
<th>Owner/Operator</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railroad (West Bank)</td>
<td>First and second tracks starting from west side (both tracks are electrified Yard Tracks)</td>
<td>MTA</td>
<td>Potential periodic or long-term shut down of railroad operation on track #2 to modify existing Bent #11 columns, foundation, and add shear wall.</td>
</tr>
<tr>
<td>Railroad (West Bank)</td>
<td>Third through seventh tracks starting from west side. Most westerly track in this group of tracks is also used by Amtrak trains. Fourth and fifth tracks are primarily used as storage tracks. Sixth and seventh tracks are used as storage tracks and for yard train movements.</td>
<td>BNSF Railway</td>
<td>Potential periodic or long-term shut down of railroad operation on track #3 (also being used by Amtrak) to modify existing Bent #11 columns, foundation and add shear wall.</td>
</tr>
<tr>
<td>Railroad (West Bank)</td>
<td>Third track starting from west side.</td>
<td>Amtrak (operates on BNSF most westerly track)</td>
<td>Potential periodic or long-term shut down of railroad operation on track #3 (also being used by BNSF) to modify existing Bent #11 columns foundation, and add shear wall.</td>
</tr>
<tr>
<td>Railroad (West Bank)</td>
<td>Eighth and ninth tracks starting from west side are used primarily by Metrolink trains. BNSF is using these tracks for accessing the BNSF yard tracks.</td>
<td>SCRRA (Metrolink)</td>
<td>Potential periodic or long-term shut down of railroad operation on track #9 to modify existing west bank pier foundation and add shear wall.</td>
</tr>
<tr>
<td>Railroad (East Bank)</td>
<td>First and second tracks starting from west side are primarily used by Metrolink trains. UPRR is using these tracks for accessing the UPRR yard tracks and for some through train movements from the Los Angeles/Long Beach area destined for North Carolina or Seattle.</td>
<td>SCRRA (Metrolink)</td>
<td>Potential periodic or long-term shut down of railroad operation on track #1 to modify existing east bank pier foundation and add shear wall.</td>
</tr>
<tr>
<td>Railroad (East Bank)</td>
<td>Third through ninth track starting from west side, third and fourth tracks seems to be primarily used for local through movements of UPRR trains, fifth through eighth tracks are used as storage tracks, and ninth rack is collector track for various industry spurs.</td>
<td>UPRR</td>
<td>No impact (no retrofit is proposed for existing Bent #12 located within UPRR tracks area).</td>
</tr>
<tr>
<td>Railroad (East Bank)</td>
<td>Tenth track (industry spur) starting from west side, north end of the track ends just below the southern portion of the existing bridge. This track primarily serves Ventura Foods, Inc.</td>
<td>UPRR/Ventura Foods Spur</td>
<td>Potential long-term shut down and removal of north end of the track #10 from west side (which serves Ventura Foods, Inc.) to modify existing Bent #13 columns foundation, and add shear wall.</td>
</tr>
</tbody>
</table>

Source: Moffat & Nichol, 2009
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

River Access Tunnel
Construction of Alternative 2 would not affect the river access tunnel.

Emergency Services
Construction of Alternative 2 would require some traffic lane closures on the viaduct and nearby roadways along the viaduct footprint, including the frontage roads on each side of the Los Angeles River. In addition, temporary closure of the viaduct may be required occasionally to accommodate construction activities. During the proposed project construction period, delays in emergency response time could occur due to roadway obstruction and partial roadway closure. A mandatory WATCP outlined in the Standard Specifications for Public Works Construction and the Work Area Traffic Control Handbook, adopted by the City, would be implemented at the construction site and its vicinity. In addition, a TMP would be prepared by the contractor to identify roadway closures and detour routes within the affected area during construction. All affected emergency routes would be identified in the TMP. The TMP would be reviewed and approved by LADOT before initiation of construction activities. The approved TMP, along with viaduct construction schedules, would be made available to LAPD and LAFD. All residents, businesses, and organizations within the affected area would also be notified in advance of the construction schedules, roadway closures, and detour routes as a safety precaution. The approved TMP would be strictly implemented during each phase of the project to avoid adverse impacts to emergency services within the area.

Alternative 3 – Replacement
The level of impacts on utilities and emergency responses would be the same for any bridge concept or alignment alternative.

Utilities
Similar to Alternative 2, construction of Alternative 3 would result in temporary impacts to utilities, such as an increase in utility demand and solid waste volume, but to a greater extent due to the larger scope of construction work and construction area involved; however, temporary incremental impacts to local or regional energy supplies, or change in the efficiency of energy usage can be anticipated.

Construction of Alternative 3 would involve foundation work that would affect some underground utility lines. This impact could be minimized by locating the columns and foundations to avoid conflicts with utility lines where feasible, such as the tunnel, sewer lines, and overhead power transmission lines. Where avoidance is not possible, the City of Los Angeles would work in close coordination with the utility providers to develop a relocation plan to minimize possible impacts and disruption to service utilities. For example, construction of
Bridge Concept 4 on any alignment alternative and Concept 5 on Alignment 3B would impact the existing sewer siphon located on the north side of the viaduct on the west side of the river.

Construction activities associated with Alternative 3 would require demolition of the existing viaduct, thus generating a large amount of solid waste (see Section 2.4.3.4). Solid waste that remains after recycling would be disposed of at appropriate landfills within the region. Any hazardous waste produced by construction activities would be properly handled and disposed of, as discussed in Section 3.14 – Hazardous Waste/Materials.

**Railroads**

Construction of Alternative 3 would require demolition of the existing viaduct, including the columns in the railroad track area, and construction of falsework and new foundations. Construction of falsework and foundations could affect the railroad operations on both sides of the river; however, impacts to railroad operations under this alternative would be less than with the Retrofit Alternative since the new viaduct would be designed to span over the railroad tracks. Table 3.6-3 summarizes anticipated impacts to railroad operations due to the proposed construction activities for all bridge concepts. Written construction agreements would be negotiated with the railroad companies by the City and be binding upon the Contractor. Close coordination with the railroad owners to gain agreement on allowable work near the railroads during periods when they are not in operation and avoidance of track closures would minimize the impacts to railroad operations. In addition, the California Public Utilities Code requires approval from the PUC for construction or alteration of crossings, and it grants the PUC exclusive power on design, alteration, and closure of crossings. A request of authorization would be submitted to RCES. The design criteria of the proposed project would comply with the PUC GOs, such as GO 26-D: “Clearance on railroads and street railroads as to side and overhead structures, parallel tracks and crossings.”

**River Access Tunnel**

Construction of the new viaduct could require reconstruction of the river access ramp, tunnel, and portals to accommodate the construction of new columns and foundation. The tunnel may be impacted under any of the replacement alternatives depending on how the new west main span abutment/bent is configured. If the selected bridge type requires the tunnel and access ramp to be reconstructed, it could be designed to match the architectural style and theme of the new viaduct, including both the entry access point and the portal at the river bank.
Table 3.6-3
Potential Impacts to Railroads under Replacement Alternative

<table>
<thead>
<tr>
<th>Railroad Facility</th>
<th>Existing Condition</th>
<th>Owner/Operator</th>
<th>Potential Impact</th>
<th>Alignment 3A</th>
<th>Alignment 3B</th>
<th>Alignment 3C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railroad (West Bank)</td>
<td>First and second tracks starting from west side (both tracks are electrified Yard Tracks)</td>
<td>MTA</td>
<td>During demolition and reconstruction, falsework and platform installation work would be done during railroad-approved work windows and in presence of a flagger assigned by MTA. Demolition of existing Bent #11 would have to be performed during approved work windows on Track #2.</td>
<td>Same as Alignment 3A</td>
<td>Same as Alignment 3A</td>
<td></td>
</tr>
<tr>
<td>Railroad (West Bank)</td>
<td>Third through seventh tracks starting from west side. Most westerly track in this group of tracks is also used by AMTRAK trains. Fourth and fifth tracks are primarily used as storage tracks. Sixth and seventh tracks are used as storage tracks and for yard train movements.</td>
<td>BNSF Railway</td>
<td>Loss of track #6 during demolition to support the platform falsework. During demolition and reconstruction, falsework and platform installation work would be done during railroad-approved work windows and in presence of a flagger assigned by BNSF. Demolition of existing Bent #11 would have to be performed during approved work windows on Track #2.</td>
<td>Same as Alignment 3A</td>
<td>Same as Alignment 3A</td>
<td></td>
</tr>
<tr>
<td>Railroad (West Bank)</td>
<td>Third track starting from west side</td>
<td>AMTRAK (operates on BNSF most westerly track)</td>
<td>During demolition and reconstruction, falsework and platform installation work would be done during railroad-approved work windows and in presence of a flagger assigned by BNSF. Demolition of existing Bent #11 would have to be performed during approved work windows on Track #2.</td>
<td>Same as Alignment 3A</td>
<td>Same as Alignment 3A</td>
<td></td>
</tr>
<tr>
<td>Railroad (West Bank)</td>
<td>Eighth and ninth tracks starting from west side are used primarily by Metrolink trains. BNSF is using these tracks for accessing the BNSF yard tracks.</td>
<td>SCRRA (Metrolink)</td>
<td>During demolition and reconstruction, falsework and platform installation work would be done during railroad-approved work windows and in presence of a flagger assigned by SCRRA. Shoring may be required to support track #9 during existing west pier foundation removal and during construction of new pier bent. Battered piles may be required at the river bank pier foundations for Alternatives 3A1 and 3A3, extending below the railroad ROW. Demolition of existing west bank Pier would have to be performed during approved work windows on Track #9.</td>
<td>Same as Alignment 3A</td>
<td>Same as Alignment 3A</td>
<td></td>
</tr>
<tr>
<td>Railroad</td>
<td>First and second tracks</td>
<td>SCRRA</td>
<td>During demolition and reconstruction, falsework and platform installation work would be done during railroad-approved work windows and in presence of a flagger assigned by SCRRA.</td>
<td>Same as Alignment 3A</td>
<td>Same as Alignment 3A</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3.6-3
**Potential Impacts to Railroads under Replacement Alternative**

<table>
<thead>
<tr>
<th>Railroad Facility</th>
<th>Existing Condition</th>
<th>Owner/Operator</th>
<th>Potential Impact</th>
<th>Alignment 3A</th>
<th>Alignment 3B</th>
<th>Alignment 3C</th>
</tr>
</thead>
</table>
| (East Bank)       | starting from west side are primarily used by Metrolink trains. UPRR is using these tracks for accessing the UPRR yard tracks and for some through train movements from Los Angeles/Long Beach area destined for North Carolina or Seattle. | (Metrolink) | platform installation work would be done during railroad-approved work windows and in presence of a flagger assigned by SCRRA.  
- Shoring may be required to support track #1 from west side during existing east pier foundation removal and during construction of new pier bent.  
- Battered piles may be required at the river bank pier foundations extending below the railroad ROW.  
- Demolition of existing east bank Pier would have to be performed during approved work windows on Track #1. | | | |
| Railroad (East Bank) | Third through ninth track starting from west side, Third and fourth tracks seem to be primarily used for local through movements of UPRR trains, fifth through eighth tracks are used as storage tracks, and ninth track is collector track for various industry spurs. | UPRR | • Loss of track #7 during demolition to support the platform falsework.  
• During demolition and reconstruction, falsework and platform installation work would be done during railroad-approved work windows and in presence of a flagger assigned by UPRR.  
• Demolition of existing Bent #12 would have to be performed during approved work windows on Tracks #4 and #5. | Same as Alignment 3A | Same as Alignment 3A |
| Railroad (East Bank) | Tenth track (industry spur) starting from west side, north end of the track ends just below the southern portion of the existing bridge. This track primarily serves Ventura Foods, Inc. | UPRR/Ventura Foods Spur | • During demolition and reconstruction, falsework and platform installation work would be done during railroad-approved work windows and in presence of a flagger assigned by UPRR.  
• Demolition of existing Bent #13 and reconstruction of new bent would require removal of the north end of track #10 from west side, which serves Ventura Foods, Inc. | Same as Alignment 3A | Same as Alignment 3A |

Source: Moffat & Nichol, 2009
Emergency Services
Construction of Alternative 3 would require closure of the existing viaduct for up to 4 years, resulting in delays in emergency response time. The Contractor would work closely with LAPD and LAFD to notify them in advance of the proposed detour routes on the east and west sides of the Los Angeles River. In addition, implementation of the mandatory Work Area Traffic Control Plan (WATCP) and the Traffic Management Plan (TMP) to be developed for implementation, as described in Section 3.3.4, would seek to minimize the impacts to emergency services at locations in close proximity to the construction site.

3.6.2.2 Permanent Impacts
Alternative 1 – No Action
No direct impacts to utilities and emergency services would occur within the study area under the No Action Alternative as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would have to seek emergency funds to replace it. It is anticipated that it would take up to 7 years before the new viaduct would be constructed. Impacts to utility service facilities, emergency services, or railroads during this period would be the same as described under Alternative 3 – Replacement.

Alternative 2 – Retrofit
Utilities
Operation of Alternative 2 would not require a substantial increase in utility usage. No permanent impacts would occur.

Railroads
Implementation of Alternative 2 would result in reducing horizontal clearance between the existing tracks and the retrofitted columns of the viaduct. The current horizontal clearance between the center of the tracks and the columns is approximately 8 ft, which is less than the current standard of 8.5 ft required by BNSF and 10 ft required by Metrolink. Implementation of the proposed heavy steel casing column retrofit would further reduce the horizontal clearance by approximately 1 ft. This impact is adverse and unavoidable.

River Access Tunnel
There would be no permanent impact to the river access tunnel under the Retrofit Alternative.

Emergency Services
No fire or police facilities would be displaced as a result of proposed project implementation. No permanent adverse impacts to fire and police protection would occur.
Alternative 3 – Replacement
The level of impacts on utilities and emergency responses would be the same for any bridge concept or alignment alternative.

Utilities
Operation of Alternative 3 would not require an appreciable increase in utility usage. Although lighting levels may be increased above existing conditions due to the need to meet current lighting standards, the additional electricity required would not represent a substantial demand on local supplies when compared to the regional capacity provided by LADWP. No permanent impacts would occur.

River Access Tunnel
As indicated earlier, construction of the new viaduct could require reconstruction of the river access ramp, tunnel, and portals to accommodate the construction of new columns and foundation. Once reconstructed, the tunnel would continue to provide access to the river.

Railroads
Once construction of the proposed project is completed, except for routine maintenance of the viaduct, no impacts to railroad operations are anticipated.

Emergency Services
No fire or police facilities would be displaced for construction of the proposed project. No permanent adverse impacts to fire and police protection would occur.

3.6.2.3 Indirect Impacts
Alternative 1 – No Action
No indirect impacts on utility service facilities, emergency services, or railroads would occur with the No Action Alternative as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would have to seek emergency funds to replace it. It is anticipated that it would take up to 7 years before the new viaduct would be constructed. Indirect impacts on utility service facilities, emergency services, or railroads would be the same as the impacts described under Alternative 3 – Replacement.

Alternative 2 – Retrofit
The proposed project is not growth-inducing; therefore, it would not create a need for additional fire and police protection facilities. No indirect impacts on utility service facilities, emergency services, or railroads would occur with the implementation of Alternative 2.
Alternative 3 – Replacement
No indirect impacts on utility service facilities, emergency services, or railroads would occur with the implementation of Alternative 3.

3.6.3 Avoidance, Minimization, and Mitigation Measures

Alternative 1 – No Action
No mitigation is required under this alternative as long as the viaduct remains in service. If the viaduct was determined unserviceable, mitigation measures described under Alternative 3 – Replacement would apply.

Alternative 2 – Retrofit
The proposed project would be designed to avoid adverse effects to existing service utilities, emergency services, and railroad operations. Bent 12 would not be retrofitted due to the limited room available for construction. The requirement for close coordination with the utility service providers in advance of the construction activities to relocate affected utilities is one component of the Standard Specifications. Temporary impacts to emergency services within the project area would be minimized by implementation of the WATCP, mandated by the City, and the provision of advance notice to emergency service providers of the construction schedule, especially the scheduled traffic lane closures that could happen occasionally.

During the final design phase, the City would meet with RCES staff to discuss relevant safety issues and rail crossing alteration/replacement permit requirements. Written construction maintenance agreements would be entered into with the railroad companies. Close coordination with the railroads’ owners or operators to work on the railroad during the period when the railroad is not in operation and to avoid track closures would minimize the impacts to railroad operations.

No measures are available to mitigate the reduction in horizontal railroad clearance if Alternative 2 is implemented.

Alternative 3 – Replacement
Impacts to utility services and railroads would be mitigated in a similar fashion as that described under Alternative 2. Impacts to emergency services within the affected area (i.e., project vicinity and detour routes) would be minimized by implementation of the City-mandated WATCP, the TMP that would outline the detour routes, and the provision of advance notice to emergency service providers of construction schedule closures of the viaduct. In addition, the affected intersections along the detour routes would be mitigated as determined practicable by LADOT, as discussed in Section 3.7 – Traffic and Transportation/Pedestrian and Bicycle Facilities.
In compliance with the Integrated Waste Management Act of 1989 (Assembly Bill 939), a demolition waste recycling program would be developed to reduce the amount of waste to be disposed of in local landfills. The program would be developed by the City prior to initiation of construction, and it would be implemented by the Contractor during demolition activities.
3.7 Traffic and Transportation/Pedestrian and Bicycle Facilities

This section addresses potential impacts to vehicular traffic and circulation associated with implementation of each of the proposed project alternatives. The traffic and circulation impact analysis is based on the results of a traffic study conducted for the project.38

3.7.1 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). Special needs of the elderly and disabled must also be considered in all federal-aid projects that include pedestrian facilities. When 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 users who share the facility.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR part 27) implementing Section 504 of the Rehabilitation Act (29 U.S.C. 794). FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to Federal-aid projects, including Transportation Enhancement Activities.

3.7.2 Affected Environment

3.7.2.1 Study Area Definition

The 6th Street Viaduct provides a major link between downtown Los Angeles and various communities on the east side of the Los Angeles River. In the project vicinity, 6th Street/Whittier Boulevard is directly connected to four major north-south streets – Central Avenue and Alameda Street located to the west of the viaduct and Boyle Avenue and Soto Street located to the east. Sixth Street is connected to US 101 through a northbound (NB) on-ramp immediately east of the project limit. The area surrounding the project area is fully developed with residential, commercial, and industrial buildings. Figure 3.7-1 shows the project area and surrounding roadway and intersection system.

3.7.2.2 Existing Roadway System

Classifications and descriptions of the existing roadways within the study area, as defined by the LADOT, are summarized below.

---

Figure 3.7-1 Traffic Study Intersections and Existing Lane Configurations

Source: Modified from Traffic Analysis Report, (ACT Consultant, 2007)
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

East-West Streets

1st Street – First Street is the northern boundary of the project study area. It is designated as a Major Highway west of the Los Angeles River and a Secondary Highway east of the river. It has two lanes in each direction, except at certain sections between Mission Road and US 101 that were striped to one lane in each direction due to ongoing construction activities, and left-turn pockets at most signalized intersections. The posted speed on 1st Street is 25 mph. The 1st Street Viaduct spans over the Union Pacific Railroad (UPRR), the Los Angeles River, and the Burlington Northern Santa Fe (BNSF) Railway facilities. The 1st Street Viaduct and Street Widening Project is currently under construction in combination with the Gold Line Eastside Extension light rail transit line. Sections of the street were restriped to one lane in each direction, and intersection approach lanes were also reduced during construction. The 1st Street construction work will be completed by 2010.

4th Street – Within the project study area, 4th Street is designated as a Major Highway between I-5 and Santa Fe Avenue. It is a Secondary Highway west of Santa Fe Avenue and east of I-5. Fourth Street has two lanes in each direction and a median lane allowing left turns during off-peak hours. The median lane operates as a reversible lane during peak periods. It provides an additional westbound (WB) through lane during the morning peak period and is reversed in the eastbound (EB) direction during the afternoon peak period. Fourth Street becomes a WB one-way street west of the intersection with 3rd Street. The posted speed on 4th Street is 35 mph. Within the project study area, 4th Street carries more traffic than all three other east-west streets combined. The 4th Street Viaduct spans over the MTA and UPRR tracks, the Los Angeles River, and the MTA and BNSF tracks.

6th Street – Sixth Street is designated as a Secondary Highway within the project study area. It becomes Whittier Boulevard east of I-5. Sixth Street has two lanes in each direction and left-turn pockets at most signalized intersections. The posted speed on 6th Street is 35 mph. The 6th Street Viaduct spans over Santa Fe Avenue, the MTA and UPRR tracks, the Los Angeles River, the MTA and BNSF tracks, and US 101.

7th Street – Seventh Street is the southern boundary of the project study area. It is a Secondary Highway within the project study area. It has two lanes in each direction and left-turn pockets at most signalized intersections. The posted speed on 7th Street is 35 mph. The 7th Street Viaduct spans over the MTA and UPRR tracks, the Los Angeles River, and the MTA and BNSF tracks.

North-South Streets

Central Avenue – Central Avenue is the western boundary of the project study area. It is designated as a Major Highway, except for the segment north of 3rd Street, which becomes a
Secondary Highway. It has two lanes in each direction and left-turn pockets at most signalized intersections. The posted speed on Central Avenue is 35 mph. It is connected to the four east-west streets within the study area with signalized intersections.

**Alameda Street** – Alameda Street is designated as a Major Highway with two lanes in each direction and left-turn pockets at most signalized intersections. The posted speed on Alameda Street is 35 mph. It intersects with the four east-west streets within the study area with signalized intersections.

**Mateo Street** – Mateo Street is designated as a Secondary Highway with one lane in each direction. It is connected to 6th Street and 7th Street with signalized intersections and terminates at Santa Fe Avenue before crossing under the 4th Street Viaduct. Mateo Street is the first intersection with the 6th Street Viaduct west of the Los Angeles River. The posted speed on Mateo Street is 30 mph. It serves the warehouses and businesses in the area.

**Santa Fe Avenue** – Santa Fe Avenue is designated as a Secondary Highway south of 4th Street and becomes a Major Highway north of 4th Street. It has two lanes in each direction. It traverses under the viaducts of 1st Street, 4th Street, and 6th Street, and it connects with 7th Street via a signalized intersection. This street provides access to warehouses and light industrial land uses in the area. The posted speed on Santa Fe Avenue is 30 mph.

**Boyle Avenue** – Boyle Avenue is designated as a Secondary Highway with one lane in each direction and a central left-turn lane. It is connected to the four east-west streets within the study area with signalized intersections. The posted speed is 35 mph.

**Soto Street** – Soto Street is the eastern boundary of the project study area. It is designated as a Major Highway south of 6th Street (Whittier Boulevard) and a Secondary Highway north of Whittier Boulevard. It has two lanes in each direction and left-turn pockets at most signalized intersections. It intersects with the four east-west streets within the study area via signalized intersections. The posted speed on Soto Street is 35 mph.

**Traffic Study Intersections**
The traffic study analyzed 31 intersections, including several freeway on- and off-ramps. Intersection locations and control types are listed in Table 3.7-1.
### Table 3.7-1  
**Studyed Intersections**

<table>
<thead>
<tr>
<th>No.</th>
<th>Intersection</th>
<th>Control Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1st Street and Alameda Street</td>
<td>Signal</td>
</tr>
<tr>
<td>2</td>
<td>3rd Street and Alameda Street</td>
<td>Signal</td>
</tr>
<tr>
<td>3</td>
<td>4th Street and Alameda Street</td>
<td>Signal</td>
</tr>
<tr>
<td>4</td>
<td>6th Street and Alameda Street</td>
<td>Signal</td>
</tr>
<tr>
<td>5</td>
<td>7th Street and Alameda Street</td>
<td>Signal</td>
</tr>
<tr>
<td>6</td>
<td>Whittier Boulevard and Soto Street</td>
<td>Signal</td>
</tr>
<tr>
<td>7</td>
<td>6th Street and Mateo Street</td>
<td>Signal</td>
</tr>
<tr>
<td>8</td>
<td>7th Street and Mateo Street</td>
<td>Signal</td>
</tr>
<tr>
<td>9</td>
<td>6th Street (Frontage Road) and Santa Fe Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>10</td>
<td>7th Street and Santa Fe Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>11</td>
<td>1st Street and US 101 SB Off-Ramps</td>
<td>Stop Sign</td>
</tr>
<tr>
<td>12</td>
<td>1st Street and US 101 NB On-/Off-Ramps</td>
<td>Signal</td>
</tr>
<tr>
<td>13</td>
<td>4th Street - Pecan Street/US 101 SB On-Ramp</td>
<td>Stop Sign</td>
</tr>
<tr>
<td>14</td>
<td>4th Street and US 101 SB Off-Ramp</td>
<td>Stop Sign</td>
</tr>
<tr>
<td>15</td>
<td>4th Street and US 101 NB Off-Ramp</td>
<td>Signal</td>
</tr>
<tr>
<td>16</td>
<td>7th Street and Soto Street</td>
<td>Signal</td>
</tr>
<tr>
<td>17</td>
<td>1st Street and Boyle Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>18</td>
<td>4th Street and Boyle Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>19</td>
<td>4th Street and I-5 SB On-/Off-Ramps/Gertrude Street</td>
<td>Stop Sign</td>
</tr>
<tr>
<td>20</td>
<td>4th Street and I-5 NB On-/Off-Ramps/Cummings Street</td>
<td>Signal</td>
</tr>
<tr>
<td>21</td>
<td>Whittier Boulevard and US 101 NB On-Ramp</td>
<td>Stop Sign</td>
</tr>
<tr>
<td>22</td>
<td>Whittier Boulevard and Boyle Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>23</td>
<td>7th Street and Boyle Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>24</td>
<td>SR 60 EB On-Ramp and Soto Street</td>
<td>No Control</td>
</tr>
<tr>
<td>25</td>
<td>1st Street and Soto Street</td>
<td>Signal</td>
</tr>
<tr>
<td>26</td>
<td>4th Street and Soto Street</td>
<td>Signal</td>
</tr>
<tr>
<td>27</td>
<td>1st Street and Central Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>28</td>
<td>3rd Street and Central Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>29</td>
<td>4th Street and Central Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>30</td>
<td>6th Street and Central Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>31</td>
<td>7th Street and Central Avenue</td>
<td>Signal</td>
</tr>
</tbody>
</table>

**Notes:**

NB = Northbound  SB = Southbound  EB = Eastbound

### 3.7.2.3 Existing Traffic Volumes

Existing (2007) traffic volumes were defined based on traffic counts conducted in December 2006 and May 2007. Daily traffic volumes and vehicle classification counts were conducted on selected streets. Average Daily Traffic (ADT) for all roadway segments within the project study area in terms of annual average value (AADT) is summarized in Table 3.7-2. The AADT for segments without daily traffic counts was estimated using the base year (2000) volumes provided by the Southern California Association of Governments (SCAG). The SCAG volumes were projected to 2007 volumes using a compound growth rate of 1 percent per year.

#### Table 3.7-2

**Existing Average Daily Traffic Volumes and Vehicle Classifications**

<table>
<thead>
<tr>
<th>Street</th>
<th>Segment and Intersection #</th>
<th>AADT</th>
<th>Truck AADT</th>
<th>% Truck</th>
<th>AM Peak Hour – Truck</th>
<th>PM Peak Hour – Truck</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EB Truck</td>
<td>WB Truck</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Med Truck Heavy</td>
<td>Med Truck Heavy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Truck</td>
<td>Truck</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EB</td>
<td>WB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Med Truck Heavy</td>
<td>Med Truck Heavy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Truck</td>
<td>Truck</td>
</tr>
<tr>
<td>6th</td>
<td>Soto (6) to Boyle (22)</td>
<td>14,900</td>
<td>894</td>
<td>6</td>
<td>8</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Boyle (22) to US 101 NB on-ramp (21)</td>
<td>13,260</td>
<td>796</td>
<td>6</td>
<td>47</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>US 101 NB on-ramp (21) to Mateo (7)</td>
<td>13,220</td>
<td>793</td>
<td>6</td>
<td>45</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Mateo (7) to Alameda (4)</td>
<td>12,290</td>
<td>737</td>
<td>6</td>
<td>36</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Alameda (4) to Central (30)</td>
<td>12,340</td>
<td>740</td>
<td>6</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>1st</td>
<td>Soto (25) to Boyle (17)</td>
<td>10,880</td>
<td>544</td>
<td>5</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Boyle (17) to US 101 NB on-off-ramps (12)</td>
<td>10,420</td>
<td>521</td>
<td>5</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>US 101 NB on-off-ramps (12) to SB on-off-ramps (11)</td>
<td>12,470</td>
<td>624</td>
<td>5</td>
<td>40</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>US 101 SB on-off-ramps (11) to Alameda (1)</td>
<td>12,690</td>
<td>635</td>
<td>5</td>
<td>41</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Alameda (1) to Central (27)</td>
<td>21,420</td>
<td>1,071</td>
<td>5</td>
<td>29</td>
<td>13</td>
</tr>
<tr>
<td>4th</td>
<td>Soto (26) to I-5 NB on-off-ramps/ Cummings (20)</td>
<td>27,520</td>
<td>1,376</td>
<td>5</td>
<td>39</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>I-5 NB on-off-ramps/ Cummings (20) to SB on-off-ramps (19)</td>
<td>21,050</td>
<td>1,053</td>
<td>5</td>
<td>50</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>I-5 SB on-off-ramps (19) to Boyle (18)</td>
<td>17,780</td>
<td>889</td>
<td>5</td>
<td>45</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Boyle (18) to US 101 NB off-ramp (15)</td>
<td>17,470</td>
<td>874</td>
<td>5</td>
<td>48</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>US 101 NB off-ramp (15) to SB off-ramp (14)</td>
<td>17,840</td>
<td>892</td>
<td>5</td>
<td>31</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>US 101 SB off-ramp (14) to Pecan/US 101 SB on-ramp (13)</td>
<td>17,680</td>
<td>884</td>
<td>5</td>
<td>75</td>
<td>8</td>
</tr>
<tr>
<td>4th</td>
<td>Pecan/US 101 SB on-ramp (13) to Alameda (2)</td>
<td>23,850</td>
<td>1,193</td>
<td>5</td>
<td>72</td>
<td>12</td>
</tr>
</tbody>
</table>
Table 3.7-2
Existing Average Daily Traffic Volumes and Vehicle Classifications

<table>
<thead>
<tr>
<th>Street</th>
<th>Segment and Intersection #</th>
<th>AADT</th>
<th>Truck AADT</th>
<th>% Truck</th>
<th>AM Peak Hour – Truck</th>
<th>PM Peak Hour – Truck</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EB Med Truck</td>
<td>Heavy Truck</td>
</tr>
<tr>
<td>Alameda to Central, EB: (29) to (3), WB: (2) to (28)</td>
<td>25,770</td>
<td>1,289</td>
<td>5</td>
<td>11</td>
<td>8</td>
<td>71</td>
</tr>
<tr>
<td>7th Street</td>
<td>Soto (16) to Boyle (23)</td>
<td>12,170</td>
<td>730</td>
<td>6</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Boyle (23) to Santa Fe (10)</td>
<td>11,280</td>
<td>677</td>
<td>6</td>
<td>16</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Santa Fe (10) to Mateo (8)</td>
<td>13,460</td>
<td>808</td>
<td>6</td>
<td>14</td>
<td>9</td>
<td>33</td>
</tr>
<tr>
<td>Mateo (8) to Alameda (5)</td>
<td>13,470</td>
<td>808</td>
<td>6</td>
<td>19</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>Alameda (5) to Central (31)</td>
<td>12,730</td>
<td>764</td>
<td>6</td>
<td>16</td>
<td>11</td>
<td>33</td>
</tr>
<tr>
<td>Central Avenue</td>
<td>1st Street (27) to 3rd Street (28)</td>
<td>6,530</td>
<td>392</td>
<td>6</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>3rd Street (28) to 4th Street (29)</td>
<td>9,010</td>
<td>541</td>
<td>6</td>
<td>12</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>4th Street (29) to 6th Street (30)</td>
<td>12,890</td>
<td>773</td>
<td>6</td>
<td>30</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>6th Street (30) to 7th Street (31)</td>
<td>12,440</td>
<td>746</td>
<td>6</td>
<td>17</td>
<td>12</td>
<td>31</td>
</tr>
<tr>
<td>1st Street (1) to 3rd Street (2)</td>
<td>19,340</td>
<td>967</td>
<td>5</td>
<td>27</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td>3rd Street (2) to 4th Street (3)</td>
<td>19,730</td>
<td>987</td>
<td>5</td>
<td>26</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>4th Street (3) to 6th Street (4)</td>
<td>20,210</td>
<td>1,011</td>
<td>5</td>
<td>26</td>
<td>17</td>
<td>29</td>
</tr>
<tr>
<td>6th Street (4) to 7th Street (5)</td>
<td>21,370</td>
<td>1,069</td>
<td>5</td>
<td>27</td>
<td>18</td>
<td>34</td>
</tr>
<tr>
<td>Mateo Street</td>
<td>6th Street (7) to 7th Street (8)</td>
<td>2,730</td>
<td>300</td>
<td>11</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Santa Fe Avenue</td>
<td>6th Street/Frontage Road (9) to 7th Street (10)</td>
<td>6,170</td>
<td>679</td>
<td>11</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td>Boyle Avenue</td>
<td>1st Street (17) to 4th Street (18)</td>
<td>9,190</td>
<td>368</td>
<td>4</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>4th Street (18) to 6th Street (22)</td>
<td>12,770</td>
<td>511</td>
<td>4</td>
<td>14</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>6th Street (22) to 7th Street (23)</td>
<td>14,190</td>
<td>568</td>
<td>4</td>
<td>13</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>Soto Street</td>
<td>1st Street (25) to 4th Street (26)</td>
<td>27,280</td>
<td>1,364</td>
<td>5</td>
<td>32</td>
<td>21</td>
</tr>
<tr>
<td>4th Street (26) to 6th Street/Whittier (6)</td>
<td>29,740</td>
<td>1,487</td>
<td>5</td>
<td>20</td>
<td>13</td>
<td>47</td>
</tr>
<tr>
<td>6th Street/Whittier (6) to 7th Street (16)</td>
<td>15,960</td>
<td>798</td>
<td>5</td>
<td>23</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>7th Street (16) to SR 60 EB on-ramp (24)</td>
<td>23,150</td>
<td>1,158</td>
<td>5</td>
<td>41</td>
<td>27</td>
<td>24</td>
</tr>
</tbody>
</table>

Notes: AADT = Annual Average Daily Traffic; NB = Northbound; SB: Southbound; EB = Eastbound

Analysis of a 3-mile stretch of residential areas along 6th Street and Whittier Boulevard in the vicinity of the viaduct bounded by 4th Street and 7th Street, using trip generation codes published by the Institution of Transportation Engineers, determined that local trips utilizing the 6th Street Viaduct total approximately 11,500 vehicles per day (out of the daily average of 13,260); these are predominantly passenger cars. Based on this information, it appears that the 6th Street Viaduct serves the local population more than regional commuters.

3.7.2.4 Existing Intersection Levels of Service

The efficiency of traffic operations on a transportation facility is measured in terms of Level of Service (LOS). Street intersections, as the critical location of surface transportation systems, are normally selected to describe traffic performance. LOS is a measure of average operating conditions at intersections during an hour. It is based on turn movement traffic volumes from each street approach (V), traffic handling capacity of each street approach per traffic control at each street approach (C), and the volume-to-capacity (V/C) ratio determined by dividing the volume of the traffic handled by the intersection during the hour by the total capacity (i.e., the maximum traffic volume that the intersection is capable of handling during an hour). LOS ranges from A to F, with A representing excellent (free-flow) conditions and F representing congestion. Intersections with a vehicular volume at or near its capacity experience greater congestion and longer vehicle delays than intersections with a smaller vehicular volume to available capacity. Table 3.7-3 describes the LOS concept and the operating conditions expected under each LOS for signalized intersections.

<table>
<thead>
<tr>
<th>LOS</th>
<th>Interpretation</th>
<th>Volume/Capacity Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.</td>
<td>0.000-0.6000</td>
</tr>
<tr>
<td>B</td>
<td>Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized, and traffic queues start to form.</td>
<td>0.601-0.700</td>
</tr>
<tr>
<td>C</td>
<td>Good operation. Occasionally backups may develop behind turning vehicles. Most drivers feel somewhat restricted.</td>
<td>0.701-0.800</td>
</tr>
<tr>
<td>D</td>
<td>Fair operation. There are no long-standing traffic queues. This level is typically associated with peak traffic periods.</td>
<td>0.801-0.900</td>
</tr>
<tr>
<td>E</td>
<td>Poor operation. Some long-standing vehicular queues develop on critical approaches.</td>
<td>0.901-1.000</td>
</tr>
<tr>
<td>F</td>
<td>Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop-and-go type traffic flow.</td>
<td>Over 1.000</td>
</tr>
</tbody>
</table>


Level of service (LOS) was calculated for the study intersections using the CalcaDB Model, which is a spreadsheet developed by LADOT using the CMA Circular 212 method. Capacity per lane was set at 1,500 vehicles at signalized intersections and 1,200 vehicles at non-signalized intersections. The LADOT allows a reduction of 0.100 in vehicles per capacity (V/C) for...
intersections connected to the LADOT Automated Traffic Surveillance and Control (ATSAC) System. All of the signalized intersections studied are part of the ATSAC system; therefore, they were subject to the 0.100 V/C reduction for each CMA run.

Existing LOS determined by the CMA method are summarized in Table 3.7-4. Existing peak-hour LOS are shown in Figure 3.7-2.

Table 3.7-4
Existing Levels of Service at Study Intersections

<table>
<thead>
<tr>
<th>No.</th>
<th>Intersection</th>
<th>AM</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LOS</td>
<td>V/C</td>
</tr>
<tr>
<td>1</td>
<td>1st Street and Alameda Street</td>
<td>A</td>
<td>0.537</td>
</tr>
<tr>
<td>2</td>
<td>3rd Street and Alameda Street</td>
<td>C</td>
<td>0.706</td>
</tr>
<tr>
<td>3</td>
<td>4th Street and Alameda Street</td>
<td>A</td>
<td>0.290</td>
</tr>
<tr>
<td>4</td>
<td>6th Street and Alameda Street</td>
<td>A</td>
<td>0.528</td>
</tr>
<tr>
<td>5</td>
<td>7th Street and Alameda Street</td>
<td>A</td>
<td>0.566</td>
</tr>
<tr>
<td>6</td>
<td>Whittier Boulevard and Soto Street</td>
<td>A</td>
<td>0.549</td>
</tr>
<tr>
<td>7</td>
<td>6th Street and Mateo Street</td>
<td>A</td>
<td>0.319</td>
</tr>
<tr>
<td>8</td>
<td>7th Street and Mateo Street</td>
<td>A</td>
<td>0.248</td>
</tr>
<tr>
<td>9</td>
<td>6th Street (Frontage Road) and Santa Fe Avenue</td>
<td>A</td>
<td>0.141</td>
</tr>
<tr>
<td>10</td>
<td>7th Street and Santa Fe Avenue</td>
<td>A</td>
<td>0.403</td>
</tr>
<tr>
<td>11</td>
<td>1st Street and US 101 SB Off-Ramps</td>
<td>F</td>
<td>1.133</td>
</tr>
<tr>
<td>12</td>
<td>1st Street and US 101 NB On-/Off-Ramps</td>
<td>D</td>
<td>0.815</td>
</tr>
<tr>
<td>13</td>
<td>4th Street - Pecan Street/US 101 SB On-Ramp</td>
<td>F</td>
<td>1.037</td>
</tr>
<tr>
<td>14</td>
<td>4th Street and US 101 SB Off-Ramp</td>
<td>F</td>
<td>1.047</td>
</tr>
<tr>
<td>15</td>
<td>4th Street and US 101 NB Off-Ramp</td>
<td>F</td>
<td>0.109</td>
</tr>
<tr>
<td>16</td>
<td>7th Street and Soto Street</td>
<td>A</td>
<td>0.557</td>
</tr>
<tr>
<td>17</td>
<td>1st Street and Boyle Avenue</td>
<td>A</td>
<td>0.361</td>
</tr>
<tr>
<td>18</td>
<td>4th Street and Boyle Avenue</td>
<td>C</td>
<td>0.718</td>
</tr>
<tr>
<td>19</td>
<td>4th Street and I-5 SB On-/Off-Ramps/Gertrude Street</td>
<td>C</td>
<td>0.731</td>
</tr>
<tr>
<td>20</td>
<td>4th Street and I-5 NB On-/Off-Ramps/Cummings Street</td>
<td>B</td>
<td>0.670</td>
</tr>
<tr>
<td>21</td>
<td>Whittier Boulevard and US 101 NB On-Ramp</td>
<td>A</td>
<td>0.534</td>
</tr>
<tr>
<td>22</td>
<td>Whittier Boulevard and Boyle Avenue</td>
<td>A</td>
<td>0.551</td>
</tr>
<tr>
<td>23</td>
<td>7th Street and Boyle Avenue</td>
<td>A</td>
<td>0.339</td>
</tr>
<tr>
<td>24</td>
<td>SR 60 EB On-Ramp and Soto Street</td>
<td>A</td>
<td>0.218</td>
</tr>
<tr>
<td>25</td>
<td>1st Street and Soto Street</td>
<td>A</td>
<td>0.408</td>
</tr>
<tr>
<td>26</td>
<td>4th Street and Soto Street</td>
<td>F</td>
<td>0.102</td>
</tr>
<tr>
<td>27</td>
<td>1st Street and Central Avenue</td>
<td>A</td>
<td>0.258</td>
</tr>
<tr>
<td>28</td>
<td>3rd Street and Central Avenue</td>
<td>A</td>
<td>0.380</td>
</tr>
<tr>
<td>29</td>
<td>4th Street and Central Avenue</td>
<td>A</td>
<td>0.082</td>
</tr>
<tr>
<td>30</td>
<td>6th Street and Central Avenue</td>
<td>A</td>
<td>0.337</td>
</tr>
<tr>
<td>31</td>
<td>7th Street and Central Avenue</td>
<td>A</td>
<td>0.443</td>
</tr>
</tbody>
</table>

Notes: NB = Northbound; SB: Southbound; EB = Eastbound

Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Figure 3.7-2  Existing Level of Service (2007)

Source: Modified from Traffic Analysis Report, (ACT Consultant, 2007)
It should be noted that except for several intersections along 4th Street, most of the intersections within the project study area are concurrently operating at LOS A or B during the morning and afternoon peak hours. Existing LOS F condition, defined by LADOT as FAILURE, occurs at the following locations:

- 1st Street/US 101 Southbound (SB) Off-Ramp, AM peak hour
- 4th Street/Pecan Street, AM peak hour
- 4th Street/US 101 SB Off-Ramp, AM peak hour
- 4th Street/US 101 NB Off-Ramp, AM peak hour
- 4th Street/Soto Street, AM and PM peak hours

### 3.7.2.5 Future Year (2038) Traffic Forecast

The traffic study predicted traffic volume and LOS for the year 2038 to cover the 20-year design life. Since the project would not increase traffic volume capacity, year 2038 traffic volume under the No Action and build alternatives would be the same.

Future year traffic volumes were derived from traffic model outputs provided by SCAG. The SCAG model covered all of the Major and Secondary Highways in the traffic study area for this proposed project. Maps in Geographic Information System (GIS) format and databases for 2000 (base year) and 2030 were provided by SCAG. The databases include directional volumes for ADT volumes, morning peak period, and afternoon peak period for each link (street segment) within the study area.

Year 2030 traffic volumes were originally projected to Future Year 2035 using growth rates derived from Year 2000 and 2030 data. These growth rates are link specific and range from 0.1 to 1.4 percent; the higher growth rates were generally observed on directions with relatively low Year 2000 volumes. The peak period data provided by SCAG included volumes for 3 consecutive hours in the AM peak period and 4 hours during the PM peak period. For the purpose of intersection capacity analysis, the peak-period volumes were converted to peak-hour volumes by using the factor of 0.38 for the AM peak period and 0.28 for the PM peak period; these factors were provided by SCAG.

Because of funding delays and anticipated ROW acquisition issues, the construction year has been pushed back from the original estimate of 2011-2014 in the Draft EIR/EIS to 2014-2017, with a new opening year of 2018 rather than 2014. As a result, new Future Year 2038 traffic volumes were projected for analysis purposes instead of Year 2035, as previously analyzed. An updated traffic study was prepared to validate the original 2008 Traffic Analysis Report Validation Findings Technical Memorandum.

---

of 2009-2010 traffic volumes recorded by LADOT and 2011 field count data with the 2008 Traffic Study Report counts shows an overall decrease in traffic volumes within the traffic study area of 16 percent, which is consistent with other parts of the City of Los Angeles during the same period; therefore, the traffic validation study concluded that there would be no significant changes to the projected traffic volumes for Year 2038 from Year 2035, and the results of the 2008 Traffic Analysis Report are still applicable.

Figure 3.7-3 shows the projected 2038 ADT and AM and PM peak-hour volumes, respectively, and the estimated LOS at intersections. The peak-hour turning movements at intersections were derived from the directional peak-hour volumes using the existing turning movement patterns. It was assumed that vehicle classification would remain the same as the existing condition shown in Table 3.7-2.

### 3.7.2.6 Transit, Truck, Parking, and Pedestrian Conditions

**Existing Transit Service** – The MTA operates two bus routes on the 6th Street Viaduct: Route 18 and Route 720. Neither line has stops on the viaduct. Westbound buses stop at the southwest corner of Whittier Boulevard and Mott Street, and EB buses stop at the northwest corner of 6th Street and Alameda Street. Route 720 is a Metro Rapid Service that runs between the communities of Commerce and Santa Monica via Whittier Boulevard, 6th Street, and Wilshire Boulevard; there are no local stops along the 6th Street Viaduct.

**Existing Truck Conditions** – Table 3.7-2 documents truck percentages at various intersections along 6th Street within the study area. Based on the data shown in Table 3.7-2, truck use on the 6th Street Viaduct is on an average of 6 percent, with the higher number of trucks traveling WB during the AM peak hours and EB during the PM peak hours.

**Existing Parking Conditions** – Parking is not permitted on the 6th Street Viaduct. Curb parking is available under the 6th Street Viaduct on the cross streets of Santa Fe Avenue, Mission Road, Anderson Street, and Clarence Street. The City of Los Angeles Street Maintenance Facility is located beneath the 6th Street Viaduct between Imperial Street and Santa Fe Avenue. Empty spaces underneath the viaduct on both sides of the river are also used by nearby businesses for parking. Privately owned parking spaces are available at most businesses and residences located to the northeast. Existing parking enforcement on the 6th Street Viaduct and near the viaduct is shown in Figure 3.7-4 and summarized in Table 3.7-5.
Figure 3.7-3  2038 Traffic Volumes and Level of Service
Figure 3.7-4 Parking within 6th Street Viaduct Construction Limits
Table 3.7-5
Existing Parking Enforcement in the Project Area

<table>
<thead>
<tr>
<th>Location</th>
<th>Parking Enforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th Street Viaduct between Mateo Street and Boyle Avenue</td>
<td>No stopping any time</td>
</tr>
<tr>
<td>6th Street (Frontage Roads) between Mateo Street and Mesquit Street</td>
<td>No parking any time</td>
</tr>
<tr>
<td>Santa Fe Avenue underneath 6th Street Viaduct</td>
<td>No parking any time</td>
</tr>
<tr>
<td>Mission Road underneath 6th Street Viaduct</td>
<td>Curb parking permitted</td>
</tr>
<tr>
<td>Anderson Street underneath 6th Street Viaduct</td>
<td>Curb parking permitted</td>
</tr>
<tr>
<td>Clarence Street underneath 6th Street Viaduct</td>
<td>Curb parking permitted</td>
</tr>
<tr>
<td>Space underneath 6th Street Viaduct between Imperial and Santa Fe Avenue</td>
<td>City of Los Angeles, Street Maintenance Parking Lot</td>
</tr>
</tbody>
</table>


**Existing Pedestrian Facilities** – A 5-ft-wide raised walkway exists on each side of the 6th Street Viaduct. Based on several observations, pedestrian traffic on the 6th Street Viaduct is low to moderate. The segment of 6th Street between Boyle Avenue and Mateo Street is elevated without cross street access for a distance of approximately 4,300 ft. The distance is discouraging to normal pedestrian activities. Another reason for the low pedestrian volume is that there is no major pedestrian destination at the east and west ends of the segment. Occasional pedestrians on the viaduct are not likely to be regular commuters.

The construction area below the 6th Street Viaduct is adjacent to industrial buildings. No commercial stores or food services are located within the vicinity of the viaduct. Pedestrian traffic consists mainly of workers traveling to the industrial buildings. Existing pedestrian volumes are not significant because the area is not currently served directly by buses, and the workers mainly commute by passenger cars.

**Bicycle Facility** – The City of Los Angeles Bicycle Plan\(^40\) does not currently designate 6th Street in the proposed project area as a bikeway. Bicyclists now use sidewalks or traffic lanes on the viaduct. There is no designated bikeway along any local street network within the vicinity of the 6th Street Viaduct on either side of the Los Angeles River.

3.7.3 Environmental Consequences
3.7.3.1 Construction Impacts

**Alternative 1 – No Action**

There would be no impacts to traffic circulation, pedestrian walkways, parking, and transit service within the project area as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would have to seek funding to replace it in order to maintain this transportation link between the Boyle Heights community and the Downtown area.

\(^{40}\) City of Los Angeles General Plan Transportation Element, 1999.
The viaduct would have to be closed during the period of construction. Traffic conditions and effects during the viaduct closure would be the same as closing the viaduct for construction under Alternative 3 – Replacement (described below), but could take longer (up to 7 years).

**Alternative 2 – Retrofit**

**Traffic and Circulation**
Implementation of Alternative 2 would not require full closure of the viaduct or adjacent streets; however, temporary lane closures on the viaduct would be likely to occur, and adjacent streets could experience episodes of increased congestion as a result of construction. Moreover, access to businesses situated adjacent to the viaduct could be restricted. Any such effects would be highly localized and temporary during the construction period.

**Parking**
Implementation of Alternative 2 would result in obstruction of parking spaces within the area under the viaduct and its immediate vicinity on a temporary basis. Although the impact would occur only during the construction period, businesses who are dependent on the use of these parking spaces could find it difficult to operate during the 2.5-year construction period. Loss of parking spaces underneath the viaduct and its adjacent area would constitute an adverse impact to nearby businesses; however, it should be noted that the parking spaces under the viaduct are either used without authorization or under revocable permits issued by the City of Los Angeles. The permits are subject to revocation at any time at the pleasure of the City. The City would choose not to renew the permit if construction of the Retrofit Alternative is undertaken.

**Pedestrian Traffic**
Occasional temporary traffic lane and sidewalk closures may be required on the viaduct and in areas beneath and adjacent to the viaduct during the retrofit construction to permit safe operation of equipment and transport of materials. These activities would cause some disruption to pedestrian traffic; however, no substantial impacts are anticipated with the provision of detour pedestrian walkways.

**Bicycle Facility**
During project construction, bicyclists may not be allowed to use the viaduct from time to time for safety reasons. They would have to use the 4th Street or 7th Street viaducts to travel from one side of the river to the other.

**Public Transit**
Occasional temporary lane closures would likely be required during the retrofit construction. Bus users may experience some 10- to 15-minute rush-hour travel delays along the 6th Street Viaduct as a result of the lane closures. The impacts are not considered substantial.
Alternative 3 – Replacement

The level of construction impacts on traffic and circulation would be the same for any bridge concept; however, compared to other alignments, Alignment 3C would cause greater localized traffic disruption and access restrictions to businesses located adjacent to the viaduct footprint.

Traffic Detour and Delay

Construction of any alignment would require full closure of the 6th Street Viaduct for up to 4 years (2014-2017). Traffic detours would occur along the street network east and west of the river due to the closure of the viaduct (see Figures 3.7-5 and 3.7-6). Traffic heading west to east to cross the Los Angeles River via the 6th Street Viaduct would be diverted at Central Avenue and Alameda Street to cross the river via the 4th Street Viaduct or 7th Street Viaduct. Traffic heading east to west to cross the Los Angeles River via the 6th Street Viaduct would be diverted at Soto Street to cross the river via the 4th Street Viaduct or 7th Street Viaduct. In addition, the 6th Street frontage roads on both sides of the viaduct would need to be vacated if any alignment under Alternative 3 is constructed, causing obstruction to the operations of adjacent businesses that are not subject to relocation but depend on the frontage roadways for access. Furthermore, greater access restriction would occur to businesses located adjacent to the viaduct footprint on the east side of the river with the Alignment 3C. The Alignment 3C is designed to minimize ROW impacts to buildings on the east side of the river, leaving almost no room between the viaduct and the front-row buildings for construction activities. Selection of other alignments would require certain buildings adjacent to the north side of the viaduct to be removed, providing more room for construction.

A traffic study was conducted to determine the level of impacts during the anticipated 4 years of construction with the viaduct closed.41 Year 2014 was previously used for analysis to represent the 4-year construction period when the viaduct would be closed. Year 2014 traffic volumes were used based on a 2011-2014 construction period assumed at the time the Draft EIR/EIS was circulated. Since that time, the projected 4-year construction period has been pushed back to 2014-2017 due to funding delays and anticipated ROW acquisition issues; therefore, year 2018 is now used for the analysis as the new opening year. As indicated earlier, a traffic validation study has been conducted and confirmed that the results of the 2008 Traffic Study Report are still valid.42 In assessing the traffic impacts of the with and without proposed project scenarios, the level of significance under CEQA is determined by comparing the increase in V/C value in accordance with the LADOT intersection criteria as follows:

Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Figure 3.7-5 Traffic Diversion Distribution – AM/PM Peak Hour
(From East to West of LA River)
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Figure 3.7-6  Traffic Diversion Distribution – AM / PM Peak Hour
(From West to East of L.A. River)
Table 3.7-6 shows the LOS at various study intersections in 2018 based on the traffic operational analysis with and without the detour required for closure of the 6th Street Viaduct. According to Table 3.7-6, the LOS at 13 intersections would be adversely impacted in either the AM or PM peak hour by the detoured traffic (as summarized in Table 3.7-7). The locations of the impacted intersections are denoted in Figure 3.7-7.

**Parking**

During demolition and construction activities, several roadways adjacent to the viaduct would be occasionally or continuously blocked, which would result in the loss of existing on-street parking. Based on the preliminary investigation, the following parking areas could be eliminated during the construction period:

- City of Los Angeles, Street Maintenance Parking Lot – 30 parking spaces
- Vacant spaces underneath the viaduct on both sides of the river, which are used by local businesses to park automobiles and trucks. These areas are not designated as public parking lots.
- Mission Road On-Street Parking – 8 spaces
- Anderson Street On-Street Parking – 8 spaces
- Clarence Street On-Street Parking – 8 spaces

Since the City Maintenance Facility would be relocated with this alternative, there would be no impact from the loss of parking for this facility. The temporary loss of public parking spaces would create some inconvenience to residents, business owners, and visitors in the area from having to park on adjacent streets and walking to destinations. The TMP would be developed to facilitate continuous roadway and pedestrian access to businesses and private parking lots within the project limits.
Table 3.7-6
Summary of Level of Service and Significant Impact Parameters

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM Peak Hour</td>
<td>PM Peak Hour</td>
<td>AM Peak Hour</td>
</tr>
<tr>
<td>1st Street/Alameda (1)</td>
<td>0.060 B</td>
<td>0.638 B</td>
<td>0.609 B</td>
</tr>
<tr>
<td>3rd Street/Alameda (2)</td>
<td>0.653 B</td>
<td>0.431 A</td>
<td>0.706 C</td>
</tr>
<tr>
<td>4th Street/Alameda (3)</td>
<td>0.294 A</td>
<td>0.629 B</td>
<td>0.304 A</td>
</tr>
<tr>
<td>6th Street/Alameda (4)</td>
<td>0.580 A</td>
<td>0.569 A</td>
<td>0.391 A</td>
</tr>
<tr>
<td>7th Street/Alameda (5)</td>
<td>0.619 B</td>
<td>0.630 B</td>
<td>0.748 C</td>
</tr>
<tr>
<td>Whittier Boulevard/ South Soto Street (6)</td>
<td>0.613 B</td>
<td>0.635 B</td>
<td>0.660 B</td>
</tr>
<tr>
<td>6th Street/Mateo Street (7)</td>
<td>0.351 A</td>
<td>0.316 A</td>
<td>0.046 A</td>
</tr>
<tr>
<td>7th Street/Mateo Street (8)</td>
<td>0.284 A</td>
<td>0.303 A</td>
<td>0.512 A</td>
</tr>
<tr>
<td>6th Street/Santa Fe (9)</td>
<td>0.159 A</td>
<td>0.117 A</td>
<td>0.159 A</td>
</tr>
<tr>
<td>7th Street/Santa Fe (10)</td>
<td>0.444 A</td>
<td>0.582 A</td>
<td>0.685 B</td>
</tr>
<tr>
<td>1st Street/US 101 SB Off-Ramps (11)</td>
<td>0.672 B</td>
<td>0.302 A</td>
<td>0.706 C</td>
</tr>
<tr>
<td>1st Street/US 101 NB Off-Ramps (12)</td>
<td>0.760 C</td>
<td>0.289 A</td>
<td>0.787 C</td>
</tr>
<tr>
<td>4th Street – Pecan Street/US 101 SB On-Ramp (13)</td>
<td>0.801 D</td>
<td>0.412 A</td>
<td>0.898 D</td>
</tr>
<tr>
<td>4th Street/US 101 SB Off-Ramp (14)</td>
<td>0.787 C</td>
<td>0.366 A</td>
<td>0.885 D</td>
</tr>
<tr>
<td>4th Street/US 101 NB Off-Ramp (15)</td>
<td>1.059 F</td>
<td>0.399 A</td>
<td>1.137 F</td>
</tr>
<tr>
<td>7th Street/South Soto Street (16)</td>
<td>0.605 B</td>
<td>0.725 C</td>
<td>0.712 C</td>
</tr>
<tr>
<td>1st Street/Boyle Avenue (17)</td>
<td>0.402 A</td>
<td>0.605 B</td>
<td>0.437 A</td>
</tr>
<tr>
<td>4th Street/Boyle Avenue (18)</td>
<td>0.804 D</td>
<td>0.669 B</td>
<td>0.899 D</td>
</tr>
<tr>
<td>4th Street and I-5 SB Off-Ramps/ Gertrude Street (19)</td>
<td>0.719 C</td>
<td>1.040 F</td>
<td>0.809 D</td>
</tr>
<tr>
<td>4th Street and I-5 NB Off-Ramps/ Cummings Street (20)</td>
<td>0.801 D</td>
<td>0.755 C</td>
<td>0.877 D</td>
</tr>
<tr>
<td>Whittier Boulevard/ US 101 NB On-Ramp (21)</td>
<td>0.564 A</td>
<td>0.062 A</td>
<td>0.062 A</td>
</tr>
<tr>
<td>Whittier Boulevard/ Boyle Avenue (22)</td>
<td>0.598 A</td>
<td>0.530 A</td>
<td>0.426 A</td>
</tr>
<tr>
<td>7th Street/Boyle Avenue (23)</td>
<td>0.371 A</td>
<td>0.365 A</td>
<td>0.836 D</td>
</tr>
</tbody>
</table>
### Table 3.7-6
Summary of Level of Service and Significant Impact Parameters

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM Peak Hour</td>
<td>PM Peak Hour</td>
<td>AM Peak Hour</td>
</tr>
<tr>
<td>SR 60 EB On-Ramp/ Soto Street (24)</td>
<td>0.254</td>
<td>A</td>
<td>0.329</td>
</tr>
<tr>
<td>1st Street/Soto Street (25)</td>
<td>0.451</td>
<td>A</td>
<td>0.532</td>
</tr>
<tr>
<td>4th Street/South Soto Street (26)</td>
<td>1.115</td>
<td>F</td>
<td>1.542</td>
</tr>
<tr>
<td>1st Street/Central Avenue (27)</td>
<td>0.290</td>
<td>A</td>
<td>0.486</td>
</tr>
<tr>
<td>3rd Street/Central Avenue (28)</td>
<td>0.415</td>
<td>A</td>
<td>0.181</td>
</tr>
<tr>
<td>4th Street/Central Avenue (29)</td>
<td>0.095</td>
<td>A</td>
<td>0.426</td>
</tr>
<tr>
<td>6th Street/Central Avenue (30)</td>
<td>0.388</td>
<td>A</td>
<td>0.475</td>
</tr>
<tr>
<td>7th Street/Central Avenue (31)</td>
<td>0.483</td>
<td>A</td>
<td>0.413</td>
</tr>
</tbody>
</table>

Notes: NB = Northbound; SB = Southbound; EB = Eastbound


### Table 3.7-7
Summary of Impacted Intersections

<table>
<thead>
<tr>
<th>Intersection</th>
<th>LOS with Detour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM</td>
</tr>
<tr>
<td>2</td>
<td>3rd Street and Alameda Street</td>
</tr>
<tr>
<td>5</td>
<td>7th Street and Alameda Street</td>
</tr>
<tr>
<td>6</td>
<td>Whittier Boulevard and Soto Street</td>
</tr>
<tr>
<td>10</td>
<td>7th Street and Santa Fe Avenue</td>
</tr>
<tr>
<td>13</td>
<td>4th Street-Pecan Street/US 101 SB On-Ramp</td>
</tr>
<tr>
<td>14</td>
<td>4th Street and US 101 SB Off-Ramp</td>
</tr>
<tr>
<td>15</td>
<td>4th Street and US 101 NB Off-Ramp</td>
</tr>
<tr>
<td>16</td>
<td>7th Street and Soto Street</td>
</tr>
<tr>
<td>18</td>
<td>4th Street and Boyle Avenue</td>
</tr>
<tr>
<td>19</td>
<td>4th Street and I-5 SB On-/Off-Ramps/Gertrude Street</td>
</tr>
<tr>
<td>20</td>
<td>4th Street and I-5 NB On-/Off-Ramps/Cummings Street</td>
</tr>
<tr>
<td>23</td>
<td>7th Street and Boyle Avenue</td>
</tr>
<tr>
<td>26</td>
<td>4th Street and Soto Street</td>
</tr>
</tbody>
</table>

EB – eastbound; LOS – level of service; NB – northbound; ROW – right-of-way; SB – southbound; WB – westbound

Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Figure 3.7-7 Impacted Intersections During Project Construction (2018)
Pedestrian Traffic
During the construction period, the 6th Street Viaduct would be closed for public use. Pedestrians using sidewalks on the existing 6th Street Viaduct would be diverted to use the nearest east-west crossing at 7th Street. The detour of pedestrian traffic would result in an additional walking distance of approximately 2,000 ft (0.4-mile).

Due to construction activities, north-south pedestrian movements underneath the 6th Street Viaduct would likely be impacted at Santa Fe Avenue west of the Los Angeles River and at Mission Road, Anderson Street, and Clarence Street east of the Los Angeles River.

Bicycle Use
During project construction, bicyclists would have to use the 4th Street or 7th Street viaducts to travel from one side of the river to the other.

Public Transit
Closure of the 6th Street Viaduct would obstruct bus operation (Route 18 and Route 720) along the viaduct. It is likely that the transit routes would be detoured to 7th Street. The detour of buses to the 7th Street Viaduct would result in approximately 0.4-mile of additional travel distance, which would add some delay in traveling time depending on traffic conditions.

The detour of buses would not impact bus stop locations or passenger service since there are no bus stops along 6th Street between Alameda Street and Soto Street. For WB buses, it is likely that the bus would travel along Whittier Boulevard passing the last bus stop at the southwest corner of Whittier Boulevard and Mott Street before turning south onto Soto Street to cross the Los Angeles River via the 7th Street Viaduct. For EB buses, the bus would travel along 6th Street and turn south onto Alameda Street to travel across the Los Angeles River via the 7th Street Viaduct.

3.7.3.2 Permanent Impacts
Alternative 1 – No Action
Implementation of Alternative 1 would not result in any permanent impacts on traffic circulation, parking, pedestrian traffic, and public transit as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would have to seek funding to replace it in order to maintain this transportation link between the Boyle Heights community and the Downtown area. The viaduct would have to be closed during the period of construction. After the viaduct was placed back in service, no permanent impacts to traffic circulation, parking, pedestrian traffic, and public transit would be anticipated, as described under Alternative 3 – Replacement.
Alternative 2 – Retrofit

Implementation of the Retrofit Alternative would not result in any permanent impacts on traffic circulation, parking, pedestrian traffic, and public transit once the retrofit is completed.

Alternative 3 – Replacement

The level of permanent impacts on traffic and circulation would be the same for any bridge concept or alignment alternative.

Year 2038 Traffic

Implementation of Alternative 3, with any bridge concept or viaduct alignment, would not increase traffic capacity; thus, traffic volumes in the future design year 2038 would be a result of normal traffic growth and other development projects that may occur in future years. The 2038 traffic forecast was presented earlier in Section 3.7.2.

Parking

Implementation of Alternative 3 would result in the loss of all parking spaces underneath the viaduct (i.e., City Maintenance Office and other empty spaces) and those along Mission Road, Anderson Street, and Clarence Street. On-street parking would be restored after construction is completed, depending on whether the area near the viaduct would be redeveloped for other uses. Because the City Maintenance Office would be subject to relocation, there would be no impact from the loss of parking for this use. If any remaining businesses would lose their private parking spaces, the City would help identify alternate parking facilities. The impact of the loss of parking would be unavoidable.

Pedestrian Traffic

The proposed project would improve pedestrian facilities. Standard 10-ft-wide sidewalks would be extended along both sides of the viaduct as part of Alternative 3. The viaduct design would be in compliance with ADA requirements. The sidewalks would be elevated with a standard curb between the traveled way and sidewalk. Sidewalks would be provided along the entire viaduct length of approximately 3,440 ft for all of the bridge concepts. Belvederes (i.e., elevated viewing platforms) would be provided for Bridge Concepts 1, 2, 3, 4, and 4A. These belvederes are provided for pedestrians, located outbound of the sidewalks away from the traveled way for comfort to the pedestrian and for viewing at the middle of the river or along the river banks. Across the river spans, Bridge Concepts 1, 2, and 3, would provide crash barriers between the traveled ways, protecting the steel arches from vehicular impact and providing additional separation between the traveled way and sidewalks. In addition, Bridge Concept 2 would use steel tie arches for the pedestrian ways across the river spans, creating a unique pedestrian experience while crossing the river with the sidewalks separated a few feet from the viaduct roadway. Bridge Concepts 4 and 4A would also provide crash barriers between the traveled ways.
ways, protecting the supporting cables from vehicular impact and providing additional separation between the traveled ways and sidewalks. These barriers would extend over the river spans and along the cable-supported spans.

The improvements, as described above, would be beneficial to area residents. No long-term adverse impacts to pedestrian traffic would occur.

**Bicycle Use**

The 2010 Bicycle Plan designates 6th Street and Whittier Boulevard within the project limits as a bicycle lane. Implementation of any of the Alternative 3 alignments would be consistent with the 2010 Bicycle Plan. The improvement under the Replacement Alternative would be a benefit for bicyclists.

**Public Transit**

Once the viaduct is reopened, all transit routes and bus stops along 6th Street in the project area would be reinstated. No long-term impacts are anticipated.

3.7.3.3 **Indirect Impacts**

**Alternative 1 – No Action**

No indirect impacts to local transportation and circulation, public transit, bicycle use, or pedestrian traffic would occur under this alternative as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would have to seek funding to replace it in order to maintain this transportation link between the Boyle Heights community and the Downtown area. The viaduct would have to be closed during the period of design and construction, which is anticipated to be up to 7 years. Indirect impacts under this scenario would be the same as the impacts described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**

Under this alternative, the City Maintenance Facility would have to be relocated. Since the buildings formerly occupied by Ventura Foods, Inc. are vacant, no relocation would be required. Relocation of the City Maintenance Facility could induce various traffic impacts proximate to the replacement area. Although this indirect impact cannot be accurately analyzed until the exact location is identified, it is assumed that the facility would be relocated to the area with compatible land use and zoning with adequate infrastructure to handle additional traffic to be generated by the facility; therefore, indirect impacts on traffic and transportation would not be expected to be substantial.

**Alternative 3 – Replacement**

Under this alternative, the City Maintenance Facility and several affected businesses would have to be relocated. Relocation of the affected businesses within the project area could create traffic
impacts at and near selected replacement areas. Although this indirect impact cannot be accurately analyzed until the exact locations are identified, it is assumed that the affected businesses would be relocated to areas with compatible land use and zoning with adequate infrastructure to handle additional traffic to be generated from their operations; therefore, indirect impacts on traffic and transportation would not be expected to be substantial.

3.7.4 Avoidance, Minimization, and Mitigation Measures

Alternative 1 – No Action
No mitigation measures are required as long as the viaduct remains in service. If the viaduct is determined to be unserviceable, it would have to be closed for up to 7 years for the City to identify the funds, finish the design, and construct the replacement structure. During the closure period, and prior to construction, the City would develop a TMP to identify traffic detour routes, transit routes, pedestrian and bicycle routes, and residential and commercial access routes to minimize area traffic impacts. Measures to minimize intersection impacts would be the same as Alternative 3 – Replacement, as described below.

Alternative 2 – Retrofit
During the construction period, the City would continue its public outreach activities to keep area residents and businesses informed of the proposed project schedule and progress. The City-mandated WATCP would be strictly implemented to minimize traffic impacts within the immediate vicinity of the construction site. In addition, a TMP would be developed to identify temporary traffic detour routes, pedestrian and bicycle routes, and residential and commercial access routes to be used as needed during the construction period.

For the loss of private parking, property owners would receive compensation through the ROW acquisition process.

Loss of on-street public parking during the construction period is unavoidable because the City has the right to revoke on-street public parking privileges for City-related projects as needed.

Alternative 3 – Replacement
During the construction period, the City would continue its public outreach activities to keep area residents and businesses informed of the proposed project schedule and progress. A TMP would be developed to identify temporary traffic detour routes, transit routes, pedestrian and bicycle routes, and residential and commercial access routes to minimize area traffic impacts due to the required closures of the 6th Street Viaduct and some local streets and frontage roads adjacent to the viaduct. Local residents, businesses, and emergency service providers would be informed in advance of the construction schedule and traffic detour routes as outlined in Figures 3.7-5 and 3.7-6. In addition, a traffic staging plan, as outlined in Section 2.3.3 of this EIR/EIS,
and a construction material hauling plan, as described in Section 3.4.4 of this EIR/EIS, would be implemented to minimize localized traffic impacts within the construction site vicinity.

Intersections to be impacted by traffic detours could be mitigated by implementing the measures outlined in Table 3.7-8; however, based on the results of the Traffic Study, only 3 out of 13 measures could be fully implemented without resulting in some consequential ROW impacts to the nearby area. These intersections include Intersections 2, 19, and 26 (see Figure 3.7-7); however implementation of mitigation measures at Intersection 2 would result in a loss of 25 curbside parking spaces, and implementation of mitigation measures at Intersection 19 would be completed by the Metropolitan Transportation Authority (MTA) as part of a separate project. Two additional measures could be partially implemented at Intersections 13 and 14 without resulting in some consequential ROW impacts. Since it is not a policy of LADOT to implement mitigation measures that would cause further ROW impacts, only measures 26 would be implemented, and Measures 13 and 14 would be partially implemented, as summarized below:

- Install new traffic signals at the intersection of 4th Street and US 101 on- and off-ramps, and connect to Los Angeles City ATSAC system.
- Restripe to add an EB right-turn lane at the intersection of 4th Street and Soto Street.

The impacts at other intersections are therefore unavoidable.

For the loss of private property parking, owners would receive compensation through the ROW acquisition process.

Loss of on-street public parking during the construction period is unavoidable because the City has the right to revoke on-street public parking privileges for City-related projects as needed.

**Table 3.7-8**

**Potential Mitigation Measures at Impacted Intersections**

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Proposed Mitigation Identified in Traffic Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 3rd Street and Alameda Street</td>
<td>Re-stripe existing one-way WB roadway from 4 WB through lanes to 5 lanes, extending from Alameda Street to Central Avenue. Implementation of this mitigation would impact (eliminate) up to 25 parking stalls along the south side of 3rd Street.</td>
</tr>
<tr>
<td>5 7th Street and Alameda Street</td>
<td>Widen 7th Street by 12 ft on the north and south sides, extending to 500 ft on each side of Alameda Street to provide an additional through lane at the EB and WB approaches to the intersection. Implementation of this mitigation would likely impact 24,000 square ft of private property.</td>
</tr>
<tr>
<td>6 Whittier Boulevard and Soto Street</td>
<td>Widen Soto Street by 12 ft along the east side to provide a protected NB right-turn lane and a second SB left-turn lane. Implementation of this mitigation would likely impact 6,000 square ft of private property.</td>
</tr>
<tr>
<td>10 7th Street and Santa Fe Avenue</td>
<td>Widen the 7th Street EB approach by 12 ft to provide a third through lane. Widen 7th Street east of Santa Fe Avenue by 300 ft to provide adequate tapering distance from 3 to 2 lanes. Implementation of this mitigation would likely impact 6,000 square ft of private property.</td>
</tr>
</tbody>
</table>
**Table 3.7-8**

**Potential Mitigation Measures at Impacted Intersections**

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Proposed Mitigation Identified in Traffic Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 4th Street-Pecan Street/US 101 SB On-Ramp</td>
<td>Widen the 4th Street WB approach by 12 ft to provide an additional WB lane. The US 101 overcrossing structure and 4th Street west of the ramp along the north side would have to be widened. Implementation of this mitigation would likely impact private property frontage and buildings for a distance of 300 ft. Install new traffic signals and connect to Los Angeles City ATSAC system.</td>
</tr>
<tr>
<td>14 4th Street and US 101 SB Off-Ramp</td>
<td>Same as Intersection Mitigation No. 13.</td>
</tr>
<tr>
<td>15 4th Street and US 101 NB Off-Ramp</td>
<td>Option 1: Widen the 4th Street WB approach by 12 ft to provide an additional WB lane and widen the US 101 overcrossing structure to accommodate the additional through lane. Implementation of this mitigation would likely impact 6,000 square ft of private property. Option 2: Widen the US 101 NB off-ramp to provide 2 NB left-turn lanes and a right-turn pocket. Implementation of this mitigation would impact Caltrans ROW.</td>
</tr>
<tr>
<td>16 7th Street and Soto Street</td>
<td>Option 1: Widen the west side of Soto Street to provide a second SB left-turn lane. Implementation of this mitigation would likely impact 7,000 square ft of private property. Option 2: Widen the south side of 7th Street to provide a new EB left-turn lane. Implementation of this mitigation would likely impact 7,000 square ft of private property.</td>
</tr>
<tr>
<td>18 4th Street and Boyle Avenue</td>
<td>Widen 4th Street by 12 ft on the north and south sides to provide an additional through lane at the EB and WB approach to the Boyle Avenue intersection. Implementation of this mitigation would likely impact 24,000 square ft of private property.</td>
</tr>
<tr>
<td>19 4th Street and I-5 SB On/-Off-Ramps/ Gertrude Street</td>
<td>Install new traffic signals and connect to Los Angeles City ATSAC system.</td>
</tr>
<tr>
<td>20 4th Street and I-5 NB On/-Off-Ramps/ Cummings Street</td>
<td>Widen the 4th Street WB approach by 12 ft to provide an additional WB lane and widen the roadway below the I-5 undercrossing structure west of the ramp to accommodate an additional through lane. Implementation of this mitigation would likely impact 4,000 square ft of private property and Caltrans ROW.</td>
</tr>
<tr>
<td>23 7th Street and Boyle Avenue</td>
<td>Widen 7th Street between Hollins Street and Boyle Avenue to add a second WB through lane. Remove traffic island and re-stripe to eliminate SB free right turn to accommodate an additional WB lane. Implementation of this mitigation would likely impact 170 ft of private property frontage.</td>
</tr>
<tr>
<td>26 4th Street and Soto Street</td>
<td>Restripe to add an EB right-turn lane.</td>
</tr>
</tbody>
</table>

**Source:** Traffic Analysis Report for 6th Street Viaduct Seismic Improvement Project, 2008.
3.8 Visual/Aesthetics

This section addresses potential visual and aesthetic impacts associated with various alternatives of the proposed project based on the results of the visual impact assessment prepared for this project.\footnote{Visual Impact Assessment for 6th Street Viaduct Improvement Project. August 2008; revised February 2011.} The visual analysis was prepared consistent with methodologies established by FHWA’s Visual Impact Assessment for Highway Projects.\footnote{USDOT, 1981. United States Department of Transportation, Federal Highway Administration, Office of Environmental Policy, Visual Impact Assessment for Highway Projects, U.S. Department of Transportation, Washington D.C. March.} This methodology divides the views into landscape or character units that have distinct, but not necessarily homogenous, visual appearance. Typical views, called key viewpoints, are selected for each unit to represent the views to/from the project. The view of the motorist is also considered as a separate character unit.

Existing and proposed visual quality, both from specific viewpoints, as well as for general landscape units, is evaluated based on three criteria – vividness, intactness, and unity:

- **Vividness**: the memorability of the components of a view as they combine to form striking or distinctive patterns in the landscape. This can include the prominence of a structure or feature as viewed against other elements, or the interplay of the different elements that create a striking view.
- **Intactness**: The integrity of visual order in the view and its freedom from visual encroachment. Both natural and man-made environments may be encroached upon by elements that detract from the overall composition of the view. The removal of elements may also have the same effect.
- **Unity**: the visual coherence and composition of the landscape viewed to form a harmonious visual pattern. Manmade environments with no visual relation to natural landform or landcover patterns display a lack of unity.

3.8.1 Regulatory Setting

NEPA establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 U.S.C. 4331[b][2]; emphasis added). To further emphasize this point, FHWA, in its implementation of NEPA (23 U.S.C. 109[h]), directs that final decisions regarding projects are made in the best overall public interest, taking into account adverse environmental impacts including, among others, the destruction or disruption of aesthetic values.
Likewise, 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.” (*Public Resources Code [PRC] Section 21001[b]; emphasis added*).

Applicable local policies that provide aesthetic guidelines within the project area include:

- The Central City North Community Plan (2000), which includes an objective that encourages the preservation and enhancement of the varied and distinctive character of the community and its landmarks.
- The Boyle Heights Community Plan (1998), which states that the unique character of community streets should be maintained and enhanced by improved design characteristics, such as street trees, landscaped median strips, traffic islands, and special paving.

A local planning endeavor that may ultimately affect the aesthetics of the project area is the City of Los Angeles River Revitalization Master Plan (LARRMP). The LARRMP provides a conceptual framework for future Los Angeles River planning; however, the LARRMP has not been integrated into the City of Los Angeles General Plan, nor have zoning or land use designations been revised to reflect the proposed elements of the plan. Prior to implementation of the plan, the City of Los Angeles will go through an environmental review process for the proposed components of the plan that were not evaluated in the Programmatic EIR.

### 3.8.2 Affected Environment

The proposed project is located within a heavily urbanized area on the east side of Downtown Los Angeles, connecting the Boyle Heights neighborhood east of the Los Angeles River with the Central City North community to the west.

#### 3.8.2.1 Setting

The 6th Street Viaduct crosses US 101 on its eastern edge, and then it crosses over a mix of rail yards, industrial buildings, and the concrete-lined Los Angeles River. The area is highly industrialized, particularly the areas immediately around the viaduct, although a few residential areas are located farther away from the structure.

Native vegetation and landscaping are largely absent from the areas around and underneath the viaduct, except for vegetation associated with the highways. This vegetation appears to consist of landscape plantings with volunteer species, including acacia, eucalyptus, and fan palms. The topography of the area appears relatively flat within the rail/river corridor, except for the river channel itself. Areas to the east have more topographic character, and the two freeways sit lower in the landscape than the surrounding areas.
No Scenic Routes are located within or near the project area. The viaduct was determined eligible for listing in the National Register of Historic Places (NRHP) under Criteria A and C for its association with the Los Angeles River bridge program and its extraordinary Streamline Modern steel and reinforced concrete design. It is also listed in the California Register of Historical Resources (CRHR). The 6th Street Viaduct was also determined eligible as one of a thematic group of 118 “Historic Highway Arch and Other Bridges in California” as part of the Caltrans Statewide Bridge Inventory in 1987. In addition, the 6th Street Viaduct is designated as City of Los Angeles Historic-Cultural Monument (HCM) #905.

### 3.8.2.2 Viewshed and Viewer Sensitivity

A viewshed is the area normally visible from an observer’s viewpoint location, including the screening effects of any vegetation or structures. Limits of a viewshed are defined as the visual limits of the views to or from the proposed project. The viewshed includes the locations of viewers likely to be affected by visual changes brought about by the project features. For this project, the viewshed includes the portions of the city that have views to the bridge. The area of this viewshed is highly dependent on the topography of adjacent areas, as well as the height of the buildings, with high rises having potential views even though they are some distance from the project site.

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

- **Residents**: Residents, particularly those with views of the project from their homes, would be most sensitive to change because of the relative permanency of their viewing experience.

- **Business Owners, Employees, and Customers**: Owners, employees, and customers of retail, industrial, and professional establishments within the project area would be considered sensitive viewers because they have frequent opportunities to experience the views from their workplaces and routinely visit on-street activity areas. These views can be fleeting or lengthy in duration.

- **Pedestrians**: Pedestrians, both on the bridge or on a street with views to the bridge, would be considered sensitive viewers, as they would be directly within the viewshed and would have lengthy exposure to views.

- **Regular Motorists**: Regular motorists would be those who live in the community or who commute through the corridor on a regular basis and are familiar with the surrounding views; however, their sensitivity to these views would be less than that of a pedestrian, as their passage through the project area is quicker and their attention is focused on road conditions.
• **Occasional Motorists:** Occasional motorists are typically nonresident, noncommuter tourists. Tourists would most likely be heading west toward downtown after exiting US 101. They would only have views of the project area from the roadway.

### 3.8.2.3 Visual Resources and Visual Quality at Key Viewpoints

The 6th Street Viaduct corridor study area can be divided into seven landscape units, which are described below, and can be seen in Figure 3.8-1. Nearly all of the landscape units are bisected by the 6th Street Viaduct, which crosses above the groundplane of the units.

Visual quality, as used in FHWA’s methodology, is based on the concepts of the science of aesthetics and is analogous to Bureau of Land Management’s scenery quality rating and U.S. Forest Service’s variety classes. The methods outlined in the FHWA report describe many factors that can contribute to a landscape’s visual quality, but these factors can ultimately be grouped under three headings: vividness, intactness, and unity, as defined above. Therefore as an example, a unit may have an overall low visual quality due to the intrusion of visually conflicting elements, the lack of unifying objects, or other subtracting features while having a memorable focal element.

• **Western Warehouse Landscape Unit:** This landscape unit, comprising the western portion of the project area, is dominated by warehouses and industrial development. The area is densely developed, very urban, and has little vegetation or open space. The overall visual quality of this landscape unit is low due to low ratings for vividness, intactness, and unity. The vividness or memorability of the unit is low. The warehouse and industrial developments, coupled with the aboveground utilities and power-substation, create a jumble of form, lines, color, and texture in the landscape that form neither a cohesive nor striking visual image. The intactness and unity are low for similar reasons. The viaduct structure provides a unique and memorable image from within the unit, which increases the vividness in several locations where it can be viewed as part of the urban streetscape; however, some areas under the viaduct have been in-filled between columns to create “buildings” roofed by the viaduct. These appear inconsistent with the structure’s architecture and reduce the overall visual quality of the viaduct.

---

45 “Aesthetics is defined as the science or philosophy concerned with the quality or sensory experience … It is also viewed as a body of knowledge about those characteristics of objects that make them pleasing or displeasing to the senses, and those characteristics of human perception that affect sensation. The quality of being aesthetics is not the opposite of ‘practicality’ or ‘reality,’ but rather another aspect or way of experiencing the same real world phenomena. Thus, blue skies, uncontaminated water, and uncluttered urban landscapes all have aesthetic value, because they imply health, pleasure, and security.” USDOT, 1981. United States Department of Transportation, Federal Highway Administration, Office of Environmental Policy, Visual Impact Assessment for Highway Projects, U.S. Department of Transportation, Washington D.C. March., page 117.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Figure 3.8-1 Key Viewpoint Locations
- **River-Rail Corridor Landscape Unit**: This landscape unit is in the heart of the project area. It is made up of the channelized Los Angeles River and numerous railroad tracks, which are owned by MTA, BNSF, and UPRR, along the west and east banks of the river. The overall visual quality of this landscape unit is very low. The rail lines and concrete river channel create a visual landscape that has very low interest. Because of the prominence of the Los Angeles River as a backdrop in many movies over the years, the river has a high importance to some members of the community and a high vividness to these individuals; however, a concrete-lined and graffiti-coated channel in general has low vividness and low visual quality. The unity of the elements and their continuation through the unit creates a monotonous image that is punctuated by the visually remarkable images of the crossings, including the 4th, 6th, and 7th Street viaducts.

- **Eastern Warehouse Landscape Unit**: The landscape unit is made up of warehouses and industrial buildings. It is similar in character and development patterns to the Western Warehouse Landscape Unit. Like the Western Warehouse Landscape Unit, the eastern unit has similar development patterns, images, and visual quality. In this unit, the viaduct also provides a visual counterpoint to the warehouses and industrial development; however, in several locations the viaduct has been altered by the addition of shear walls between columns that distract from the lines created by the viaduct. As with the western unit, the eastern unit has low visual quality.

- **Interstate Corridor Landscape Unit**: This landscape unit is at the eastern edge of the project area and consists of two freeway undercrossings – US 101 and I-5. Most of the views within this unit are from US 101, since landscaping and topography limit the views from I-5. This unit has a moderately low visual quality. The unit has a moderately low vividness, with the plantings and existing viaduct crossing providing a moderately low to moderate memorability of the crossing. The intactness and unity of the unit are also moderately low.

- **High-Rise Residential Landscape Unit**: This landscape unit is found in the northeast quadrant of the project area in the Boyle Heights neighborhood. It is made up of a mix of commercial and multi-story apartments (east side of US 101). Views to the project area can be found from the western facades of the buildings. The High-Rise Residential Landscape Unit has commanding views to the surrounding landscape. In these views, the 6th Street Viaduct blends somewhat into the urban fabric of the background landscape. The views from this landscape unit have a moderate to moderately low visual quality. Other than the viaduct, there are no visually notable structures within the urban fabric to provide a memorable view, and the viaduct itself is partially obscured by other structures in the mid-ground. The intactness and unity of the view are moderate.

- **Multi-Family Residential Landscape Unit**: Between the Eastern Warehouse Landscape Unit and the Interstate Corridor Landscape Unit is the Multi-Family Residential Landscape Unit.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Unit, which is composed of a single complex of two-story units. The entrance to the complex is off Clarence Street. Views to the project are primarily along Clarence Street from the entrance and, obliquely, from units fronting Clarence Street. The overall visual quality of this unit is moderate to moderately low. The vividness is moderately low. The apartment buildings, while well kept and the complex neat, lack any ornamentation or distinguishing features that might create a more vivid view. The intactness and unity are moderate for the unit because of the repetition of form between structures and the addition of landscaping within the complex. Some of the only landscaping within the project area can be found within this landscape unit, which helps to soften the visual appearance of the unit.

- **6th Street Corridor Landscape Unit:** This landscape unit addresses the views along 6th Street as the viaduct crosses mostly above the other landscape units. The visual quality of this landscape unit is moderate. The most vivid views are to the downtown skyline in the distance. Views into the surrounding landscape units for motorists are somewhat diminished because of the bridge railings; however, pedestrians with a higher vantage point and closer proximity to the railings have much clearer views into the landscape below. Several bridge elements, including the entry monuments and the two archways, provide notable points within the visual environment along the roadway. The intactness and unity of the roadway are moderate.

Key viewpoints of the visual resources were established within these landscape units. Key viewpoints were chosen based on the view experienced most frequently by a sensitive viewer group. This was done to determine the extent of visual effects on a resource or view resulting from the project based on the viewer’s response to the change in visual quality. Note that with the discussion of visual quality associated with each key view described below, it is important to remember that these are evaluations specific to the location, and other areas within the unit may have higher or lower visual quality than the average.

In addition to the landscape units, Figure 3.8-1 shows the location and direction of the key viewpoints analyzed. The key viewpoints for the visual analysis are:

- **Viewpoint 1 within the River-Rail Corridor Landscape Unit:** This view is from the 4th Street Viaduct looking towards the center span and eastern portion of the 6th Street Viaduct. The view is from the perspective of a pedestrian on 4th Street. The existing visual character is of a heavily industrialized area of low visual quality, with low vividness and intactness. The bridge itself has a high visual quality due to its vividness within the landscape.

- **Viewpoint 2 within the River-Rail Corridor Landscape Unit:** This viewpoint is from the center of the 4th Street Viaduct looking towards the center span and western portion of the 6th Street Viaduct. The view is from the perspective of a pedestrian on 4th Street. The existing visual character is of a heavily industrialized area of low visual quality, with low vividness,
intactness, and unity. The viaduct itself has a high visual quality due to its vividness within the landscape.

- **Viewpoint 3 within the Eastern Warehouse Landscape Unit:** This view is from the 4th Street Viaduct at the western edge of the landscape unit looking to the 6th Street Viaduct. The existing visual character is of a heavily industrialized area of low visual quality, with low vividness, intactness, and unity. The viaduct itself has a high visual quality due to its vividness within the landscape.

- **Viewpoint 4 within the 6th Street Corridor Landscape Unit:** This viewpoint looks toward the center span of the 6th Street Viaduct from the roadway. The view is from the perspective of the WB motorist. The character of the existing view is highlighted by the main-span elements (i.e., railing, light fixtures, and arches), along with the background view of the downtown skyline. The main-span elements increase the visual quality of the view due to their vividness and proximity to the viewer; however, the elements outside of the bridge (i.e., power transmission lines, adjacent industrial buildings, rail lines, and concrete channel) detract from the view, lowering the unity and intactness, as well as the vividness of the view. Overall, the view has a moderate to moderately low quality.

### 3.8.3 Environmental Consequences

#### 3.8.3.1 Construction Impacts

For purposes of this analysis, temporary impacts are defined as those impacts that would be in effect only during demolition and construction of the 6th Street Viaduct. These impacts are only temporary and would cease on completion of the project.

**Alternative 1 – No Action**

No impacts to visual resources over the baseline condition would occur under the No Action Alternative as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. Visual and aesthetic impacts from construction of the replacement viaduct would be the same as that described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**

**Construction:** Construction activities generate visual and aesthetic images that are generally disruptive to the status quo and may be undesirable or offensive to some affected individuals or groups. The presence and operation of construction equipment, such as heavy trucks, cranes, or excavators, may be experienced as disruptive or out of context. Construction-generated fumes and dust generate visual as well as air quality impacts.

**Construction Staging Areas:** Two locations have been identified as candidates for use as construction staging areas. Two construction yards are anticipated for the project – one to the...
southeast at Mission Road and Jesse Street abutting the railroad corridor, and the other to the northwest at Santa Fe Avenue and Willow Street near the railroad switching yard. The first location may not be used because the cultural resources study identified an archaeological site within the proposed area; hence, the area would be protected (see Section 3.9 – Cultural Resources). The second location is currently open space/parking lots, and they would presumably be returned to open space/parking after completion of the project. Impacts of the staging facilities would be considered as low due to the small areas of these sites and their locations adjacent to railroad corridors and industrial uses. Overall, due to the temporary nature of these effects, they are not considered substantial.

**Alternative 3 – Replacement**

**Active Demolition and Construction:** Demolition and construction activities generate visual and aesthetic images as described under Alternative 2 above. Nighttime construction could be anticipated for all alignment and bridge concepts under the Replacement Alternative, to avoid local traffic impacts during the daytime. Because the project site is located within an industrial zone, localized lighting within the construction area would not result in adverse impacts to area residents.

**Construction Staging Areas:** The impact description is the same as Alternative 2 discussed above.

### 3.8.3.2 Permanent Impacts

The visual impact of project alternatives is determined by assessing the visual resource change due to the project and predicting viewer response to that change. Visual resource change is the total change in visual character and visual quality. The first step in determining visual resource change is to assess the compatibility of the proposed project with the existing visual character of the landscape. The second step is to compare the visual quality of the existing resources with the projected visual quality after the project is constructed. Viewer response to the changes is the sum of viewer exposure and viewer sensitivity to the project, as previously described. The resulting level of visual impact is determined by combining the severity of resource change with the degree to which people are likely to react negatively to the change.

**Alternative 1 – No Action**

With this alternative, the structure would remain in its current configuration and at its current rate of deterioration. There would be no change to the existing landscape unit under this alternative scenario as summarized in Table 3.8-1 located at the end of this section. If the viaduct was determined to be unserviceable, the City would have to identify emergency funding sources to replace it. Under this circumstance, the anticipated permanent impacts of Alternative 1 would be the same as that described under Alternative 3 – Replacement.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Alternative 2 – Retrofit

Retrofitting the columns and other improvements to the existing viaduct would leave much of the viaduct visually the same as the existing span; however, many of these components would appear larger than the existing elements, which may also change the visual proportions of the structure. For example, the columns would appear more massive than they appear now (see example simulation in Figure 3.8-2). The infill walls would add a new visual component to portions of the viaduct where there are not already infill walls between the column bents. These changes would likely go unnoticed by the general public over the long-term.

Proposed changes, although not radical, would be most noticeable in the Eastern and Western Warehouse Landscape Units. These two units border the viaduct and have many roads that cross under the span. In addition, the viewer groups in this area are made up of business owners and employees who see the viaduct daily. The railings and light fixtures would not be replaced under this alternative, preserving the existing views for travelers on the viaduct. Viewers within the River-Rail Corridor Landscape Unit would have quick views as their train passes the viaduct, but they would not likely notice the changes.

The improvements to the viaduct would not likely change the overall visual quality of any of the associated landscape units as summarized in Table 3.8-1 presented under Alternative 3 below. The new finish and color on the overall bridge associated with the new coatings would clean up the viaduct, temporarily removing graffiti and unifying the image of the bridge in the landscape. This would cause an increase in the vividness of the structure, but it would not affect an overall change within the context of the surrounding environment.

Implementation of the Retrofit Alternative could include the installation of architectural accent lighting. Because the bridge is sited in an industrial area, near Downtown Los Angeles, it can be anticipated that there would be a high amount of nighttime lighting already present in the area. Because the specific area that the bridge crosses is the Los Angeles River and the railroad tracks on either bank, which are currently not lit, it can be anticipated that the new bridge architectural lighting would be a noticeable addition to the nighttime viewscape. The architectural lighting scheme would likely add to the vividness of the bridge, and the lighting would make the bridge more visible to areas farther from the bridge than the adjacent landscape units, especially from skyscrapers in downtown or residential towers in the Boyle Heights neighborhood that face the project area. The accent lighting would be designed to shield or direct the light inward and upward toward the viaduct, avoiding spillover lighting to the surrounding area to prevent nighttime glare and light effects on residences in the vicinity. Low-reflective materials would be used as part of the architectural lighting plan.
Alternative 3 – Replacement

With this alternative, 6 different bridge concepts were identified for design consideration, along with 3 different alignments, allowing for 18 different combinations of sub-alternatives. The following discussion provides an analysis of the general effects of the different alignments on the visual environment. Following that is an assessment of bridge concepts and their effect on the visual environment of the area.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Bridge/Viaduct Alignments

Several alignment alternatives have been considered, but three (i.e., 3A, 3B, and 3C) were identified for further design consideration. This analysis looks at the effects of each of the alignments on the visual character of the landscape.

Alignment 3A: This alignment closely follows the existing viaduct; however, because of the wider viaduct replacement structure, the north side of the viaduct footprint would extend further to the north, while the south side of the footprint would remain essentially at the same location except for the segment of the alignment over the Los Angeles River, which would be shifted slightly to the south to improve the horizontal curve radius and provide better design speeds and stopping sight distances.

The realignment would require removal of several buildings that abut the northern edge of the existing structure. A row of buildings north of the structure between Mateo Street and Santa Fe Avenue, west of the river crossing, would be removed, as would several buildings east of the river crossing, particularly between Jesse and Clarence Streets.

From the ground level, the new open space created by clearing these properties would be seen by travelers on local streets and from any nearby businesses. Removal of the buildings would open up the views to the new structure since many of the existing buildings are close to the existing viaduct. On 6th Street, the building removals would not be noticeable to the drivers because the bridge railing would block out most of the views to the immediate area. Pedestrians looking over the railing would see the open areas.

Alignment 3B: With this alignment alternative, the new structure would swing much more to the north, especially between the tie-in at the US 101 crossing to the eastern edge of the river crossing. At the river crossing, the alignment would swing south of existing. Between Santa Fe Avenue and Mateo Street, the alignment would follow the existing viaduct footprint, with the widening occurring to the north. In plan view, the new alignment cuts a long arc through the landscape.

This alignment would remove considerably more of the existing buildings east of the river crossing than Alignment 3A. One or more buildings between Clarence Street and the railroad tracks north of the existing alignment would be removed by the proposed project with this alignment. West of the river, Alignment 3B is nearly the same as Alignment 3A, so the anticipated impacts would be similar.

At ground level, the cleared properties, plus the removal of the existing viaduct, would create a long linear open space around the new viaduct structure. Views to this new structure would be
more open along the cross streets than the current configuration allows. Views from the new viaduct would be very similar to those described for Alignment 3A.

**Alignment 3C:** This alignment would keep the same basic centerline as the existing east of the river crossing. The new structure would be wider on the north and south sides, and it would be cantilevered to minimize building removals. At the river crossing, the radius would be ‘flattened,’ moving the bridge slightly south. West of the river crossing, the wider structure would be aligned to the north as in the previous two alignment alternatives. With this alternative, property acquisition and clearing would primarily be associated with the row of buildings on the north side of the structure between Mateo Street and Santa Fe Avenue. Because this alternative most closely follows the existing alignment, there would be little impact to the views on the ground on the east side of the river.

**Replacement Bridge Concepts**

Fifteen (15) bridge concepts (types) were developed during preliminary project design and were screened down to five bridge concepts (i.e., Concepts 1, 2, 3, 4, and 5) for further consideration. Each bridge concept could be constructed on any of the viaduct replacement alignments (i.e., 3A, 3B, or 3C) discussed above.

In spring 2009, two additional bridge concepts, Concepts 1A and 4A, were investigated in response to public input; these concepts are a design expression of Concepts 1 and 4, respectively. The difference between Concepts 4A and 4 reflects an individual aesthetic appearance of the bridge, but it does not change the assessments of each bridge concept. The total project cost for Concept 1A was found to be significantly higher than other bridge concepts considered, so Bridge Concept 1A was withdrawn from further consideration (see Section 2.3.3.2). The remaining six bridge concepts are:

- **Concept 1.** Reproduction of the existing structure (main span replication) (see Figure 2-8 for a computer simulation and Figure 3.8-3 for a photo simulation)
- **Concept 2.** Haunched cast-in-place prestressed concrete box girder with steel tied arch pedestrian bridge on each side of the roadway span (see Figure 2-10 for a computer simulation and Figure 3.8-4 for a photo simulation)
- **Concept 3.** Steel half through arch with four corner pylons (see Figure 2-11 for a computer simulation and Figure 3.8-5 for a photo simulation)
- **Concept 4.** Extradosed concrete box girder with dual pylons (cable-stay bridge with two spans) (see Figure 2-12 for a computer simulation and Figure 3.8-6 for a photo simulation)
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Concept 4A. Extradosed concrete box girder with three dual pylons (cable-stay bridge with three spans) (see Figure 2-13 for a computer simulation and Figure 3.8-7 for a photo simulation)

Concept 5. Extradosed concrete box girder with single pylon (cable-stay bridge with seven spans) (see Figure 2-14 for a computer simulation and Figure 3.8-8 for a photo simulation)

Each of the designs carried forward for evaluation would expand the viaduct’s current width from 66 ft to a maximum of 94 ft. Photo simulations for Bridge Concepts 1, 2, 3, 4, 4A, and 5, along with a description of each concept and its effects on the visual environment, are presented on the following pages. These simulations represent the anticipated views from Key Viewpoint 3.

Nighttime Glare and Light
Implementation of Alternative 3 would likely include architectural accent lighting. Because the bridge is sited in an industrial area, near Downtown Los Angeles, it can be anticipated that there would be a high amount of nighttime lighting already present in the area. Because the specific area that the bridge crosses is the Los Angeles River and the railroad tracks on either bank, which are currently not lit, it can be anticipated that the new bridge architectural lighting would be a noticeable addition to the nighttime viewscape. The architectural lighting scheme would likely add to the vividness of the bridge, and the lighting would make the bridge more visible to areas farther from the bridge than the adjacent landscape units, especially from skyscrapers in downtown or residential towers in the Boyle Heights neighborhood that face the project area.

The accent lighting would be designed to shield or direct the light inward and upward toward the viaduct, avoiding spillover lighting to the surrounding area to prevent nighttime glare and light effects on residences in the vicinity. Low-reflective materials would be used as part of the architectural lighting plan.

Anticipated Changes by Landscape Unit
Within the landscape units, it is anticipated that each of the bridge types would create a memorable crossing that would equal or exceed the visual quality of the existing bridge from the perspective of drivers and pedestrians, for those on the viaduct as well as those within the surrounding units. It is anticipated that the changes associated with any of the proposed replacement bridge types would improve the visual quality for these viewer groups. Deteriorated elements that are part of the existing viaduct structure include railings, deck surface, and light fixtures, which detract from its overall visual quality. This is also true of the overhead power lines and nearby transmission line towers. The deteriorated viaduct elements would no longer remain with any of the bridge type alternatives; however, the proximate visual detractions (i.e. overhead lines and transmission towers) would remain in place.
Existing View from Key Viewpoint 3

Proposed View from Key Viewpoint 3

Figure 3.8-3  Bridge Concept 1: Main Span Replication
Figure 3.8-4  Bridge Concept 2: Haunched Box Girder with Parallel Steel Tied Arches
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Existing View from Key Viewpoint 3

Proposed View from Key Viewpoint 3

Figure 3.8-5 Bridge Concept 3: Steel Half-Through Arch
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Figure 3.8-6  Bridge Concept 4: Extradosed Concrete Box with Dual Pylons (Two-Span Cable-Stay Bridge)

Existing View from Key Viewpoint 3

Proposed View from Key Viewpoint 3

Note: Bridge color subject to change during the design phase.
Existing View from Key Viewpoint 3

Proposed View from Key Viewpoint 3

Figure 3.8-7  Bridge Concept 4A: Extradosed Concrete Box Girder with Three Dual Pylons (Three-Span Cable-Stay Bridge)
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Figure 3.8-8  Bridge Concept 5: Extradosed Concrete Box Girder with Single Pylon (Cable-Stay Bridge with Seven Spans)
The discussion below summarizes the anticipated changes to the visual environment for the viaduct under the Replacement Alternative and the No Action Alternative if the viaduct is determined unserviceable and is subject to replacement. Table 3.8-1 provides a summary.

- **Western Warehouse Landscape Unit:** The largest impact to the Western Warehouse Landscape Unit would be the removal of a row of buildings along the 6th Street frontage road on the north side of the viaduct, from Mateo Street to Santa Fe Avenue. This would occur with any of the three proposed alignments under Replacement Alternative 3 and the No Action Alternative in the event the viaduct is determined unserviceable and has to be replaced. The touchdown point at Mateo Street would remain similar in configuration to the existing, with minor changes to the northeast corner to accommodate the wider replacement bridge section. The new viaduct would maintain or increase the vividness of the structure within the landscape of this unit no matter which bridge type is eventually selected. The visual quality of the landscape unit would remain low since the overall fabric of the unit would remain.

- **River-Rail Corridor Landscape Unit:** Each of the three proposed alignments is nearest to the existing viaduct alignment through this landscape unit. The primary views within this unit are presented to riders of the Amtrak and Metrolink trains, and these travelers would have short, somewhat oblique views to the new structure similar to those presented by the existing viaduct. Any of the bridge types would create a striking and memorable structure for these viewers. Viewers on either the 4th or 7th Street viaducts, in particular pedestrians, would have clear views of the new viaduct. Each of the proposed bridge types would create a prominent and memorable structure to replace the existing memorable structure; therefore, the visual quality of the anticipated views within and into this landscape unit is expected to remain essentially the same.

- **Eastern Warehouse Landscape Unit:** The alignment of a new viaduct would have its largest impact on the Eastern Warehouse Landscape Unit since the alignment has the largest variability within this unit. Alignment 3B has the greatest impact of the three alignments because of the number of building removals and property clearings associated with it and the subsequent increase in open space that would be created, at least temporarily depending on if the parcels are redeveloped. As with the Western Warehouse Landscape Unit, any of the new proposed bridge types would maintain or increase the vividness and memorability of the structure. Any increase in open space surrounding the new structure would also increase its visibility within the unit; however, it is anticipated that within the landscape unit, the overall visual quality would remain approximately the same.
### Table 3.8-1
Summary of Visual Quality Change by Landscape Unit

<table>
<thead>
<tr>
<th>Landscape Unit</th>
<th>Primary Project Elements</th>
<th>FHWA Visual Assessment Criteria</th>
<th>Vividness w/o1</th>
<th>Vividness with2</th>
<th>Intactness w/o1</th>
<th>Intactness with2</th>
<th>Unity w/o1</th>
<th>Unity with2</th>
<th>Overall Visual Quality w/o1</th>
<th>Overall Visual Quality with2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Warehouse</td>
<td>No construction included in this alternative; routine inspection and maintenance activities only.</td>
<td>Low N/A&lt;sup&gt;4&lt;/sup&gt; Low N/A&lt;sup&gt;4&lt;/sup&gt; Low N/A&lt;sup&gt;4&lt;/sup&gt; Low N/A&lt;sup&gt;4&lt;/sup&gt; Low N/A&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>River-Rail Corridor</td>
<td>No construction included in this alternative; routine inspection and maintenance activities only.</td>
<td>Very Low N/A&lt;sup&gt;4&lt;/sup&gt; Very Low N/A&lt;sup&gt;4&lt;/sup&gt; Low N/A&lt;sup&gt;4&lt;/sup&gt; Very Low N/A&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern Warehouse</td>
<td>If the viaduct is determined unserviceable and is subject to replacement, the elements would be the same as Alternative 3 - Replacement</td>
<td>Low N/A&lt;sup&gt;4&lt;/sup&gt; Low N/A&lt;sup&gt;4&lt;/sup&gt; Low N/A&lt;sup&gt;4&lt;/sup&gt; Low N/A&lt;sup&gt;4&lt;/sup&gt; Low N/A&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interstate Corridor</td>
<td>If the viaduct is determined unserviceable and is subject to replacement, the elements would be the same as Alternative 3 - Replacement</td>
<td>Mod. Low N/A&lt;sup&gt;4&lt;/sup&gt; Mod. Low N/A&lt;sup&gt;4&lt;/sup&gt; Mod. Low N/A&lt;sup&gt;4&lt;/sup&gt; Mod. Low N/A&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Rise Residential</td>
<td>If the viaduct is determined unserviceable and is subject to replacement, the elements would be the same as Alternative 3 - Replacement</td>
<td>Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td>If the viaduct is determined unserviceable and is subject to replacement, the elements would be the same as Alternative 3 - Replacement</td>
<td>Mod. Low N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th Street Corridor</td>
<td>If the viaduct is determined unserviceable and is subject to replacement, the elements would be the same as Alternative 3 - Replacement</td>
<td>Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt; Mod. N/A&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Without mitigation measures in place.
2 With mitigation measures in place. Mitigation measures are described in Chapter 6 of this report.
3 The ratings shown in the No Action table for vividness, intactness, and unity are the baseline for the existing visual character of each landscape unit and can be used as a comparison to the proposed build alternatives (including the Viaduct Retrofit) ratings with and without mitigation. If the viaduct became unserviceable due to advanced ASR and/or earthquake damage, the No Action impacts and mitigation measures would be similar to Alternative 3.
4 Mitigation is not applicable to the No Action Alternative with the viaduct remaining in service, since no construction activities are included with this alternative.
### Table 3.8-1

#### Summary of Visual Quality Change by Landscape Unit

<table>
<thead>
<tr>
<th>Landscape Unit</th>
<th>Primary Project Elements</th>
<th>FHWA Visual Assessment Criteria</th>
<th>Vividness w/o</th>
<th>with</th>
<th>Intactness w/o</th>
<th>with</th>
<th>Unity w/o</th>
<th>with</th>
<th>Overall Visual Quality w/o</th>
<th>with</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alternative 2 – Viaduct Retrofit</strong></td>
<td>Retrofit existing columns by encasing in heavy steel and architectural mortar, with infill walls between select columns. Construct new foundations and grade beams, retrofit bent caps, and the closure of some expansion joints.</td>
<td></td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Western Warehouse</td>
<td></td>
<td></td>
<td>Low</td>
<td>Low</td>
<td>Very Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>River-Rail Corridor</td>
<td></td>
<td></td>
<td>Very Low</td>
<td>Low</td>
<td>Very Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Very Low</td>
<td>Low</td>
</tr>
<tr>
<td>Eastern Warehouse</td>
<td></td>
<td></td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Interstate Corridor</td>
<td></td>
<td></td>
<td>Low</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Low</td>
<td>Mod.</td>
<td>Low</td>
</tr>
<tr>
<td>High-Rise Residential</td>
<td></td>
<td></td>
<td>Low</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td></td>
<td></td>
<td>Low</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
</tr>
<tr>
<td>6th Street Corridor</td>
<td></td>
<td></td>
<td>Low</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
<td>Mod.</td>
</tr>
</tbody>
</table>

1. Without mitigation measures in place.
2. With mitigation measures in place. Mitigation measures are described in Chapter 6 of this report.
3. The ratings shown in the No Action table for vividness, intactness, and unity are the baseline for the existing visual character of each landscape unit and can be used as a comparison to the proposed build alternatives (including the Viaduct Retrofit) ratings with and without mitigation.
### Table 3.8-1
Summary of Visual Quality Change by Landscape Unit

<table>
<thead>
<tr>
<th>Landscape Unit</th>
<th>Primary Project Elements</th>
<th>FHWA Visual Assessment Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Vividness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>w/o¹</td>
</tr>
<tr>
<td><strong>Alternative 3 – Viaduct Replacement</strong>³</td>
<td>Replace the existing viaduct with a new four-lane structure. Three different alignments and six different bridge types are proposed for analysis.</td>
<td></td>
</tr>
<tr>
<td>Western Warehouse</td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>River-Rail Corridor</td>
<td></td>
<td>Very Low</td>
</tr>
<tr>
<td>Eastern Warehouse</td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Interstate Corridor</td>
<td></td>
<td>Mod. Low</td>
</tr>
<tr>
<td>High-Rise Residential</td>
<td></td>
<td>Mod. Low</td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td></td>
<td>Mod. Low</td>
</tr>
<tr>
<td>6th Street Corridor</td>
<td></td>
<td>Mod. High</td>
</tr>
</tbody>
</table>

¹ Without mitigation measures in place.
² With mitigation measures in place. Mitigation measures are described in Chapter 6 of this report.
³ The ratings shown in the No Action table for vividness, intactness, and unity are the baseline for the existing visual character of each landscape unit and can be used as a comparison to the proposed build alternatives (including the Viaduct Retrofit) ratings with and without mitigation.
• **Interstate Corridor Landscape Unit:** The existing bridge over US 101 would be replaced under all of the bridge replacement scenarios, but the alignment would remain approximately the same for Alignments 3A and 3C. Alignment 3B would shift to the north and would slightly skew the structure from its existing alignment; however, this would not be expected to substantially change the existing view from the freeway. Existing landscaping in the area of the bridge would be removed by the construction activities for the bridge replacement. Viewers from the freeway would primarily see the section that is over the freeway, with fleeting glances to the structure west of the freeway, especially for SB traffic. The replacement of the structure would remove the noticeable retrofitting performed earlier by Caltrans (in mid 1990s) and would unify the structure into one coherent image. Any of the new structure alternatives would provide a vivid image in the landscape, and removal of the earlier retrofit elements (e.g., the existing shear walls) would improve the unity and intactness of the structure.

• **High-Rise Residential Landscape Unit:** From the aspect of the High-Rise Residential Landscape Unit, the viaduct is one element within the urban fabric. Any of the three replacement alignments would not significantly alter the view of the viaduct from this unit, except that any adjacent property clearing may slightly increase the visibility of the structure against the mix of buildings within the viewshed; however, the type of bridge could cause the structure to stand out more against the backdrop of other structures. The bridge types that involve longer or taller structures, such as the cable-supported concepts (Bridge Types 4, 4A, and 5), would create a more vivid and viewable structure, and they would correspondingly increase the visual quality of the views to moderate or moderately high. The other bridge types would have less of a visual presence, and they would be expected to blend more into the urban fabric, similar to the existing structure.

• **Multi-Family Residential Landscape Unit:** Alignment 3B would bring the structure approximately 50 to 60 ft closer to this landscape unit as viewed from Clarence Street. Even with the building removals that would be associated with this alternative, there are still intervening buildings that would limit the ground-level views to the new structure from Clarence Street. If one of the cable-supported bridge concepts (Bridge Type 4, 4A, or 5) were selected, there may be greater views to the new towers than with the current viaduct configuration, especially from the second-floor units. It is anticipated that the visual quality of the landscape unit would remain the same under the various alignment and bridge-type scenarios.

• **6th Street Corridor Landscape Unit:** For this unit, the selected alignment would not affect the views to a great extent. Depending on where the viewer is positioned on the viaduct, the views to downtown from the east may shift slightly from existing, but the downtown skyline would continue to form the major backdrop for the viewer, and the placement relative to the bridge is not important to the view. Another noticeable element would be the wider cross section of the bridge that would accommodate four lanes of traffic, a median, and two wider sidewalks.
The bridge type selection would also be important to the viewer, and each of the proposed bridge types would create a different visual experience to travelers using the viaduct.

**Simulation at Key Viewpoints**
Simulations for each of the key viewpoints were developed to demonstrate the potential effect of the viaduct replacement from several vantage points. These are discussed below.

**Key Viewpoints 1 and 2**
The photograph for Key Viewpoint 1 was taken looking southeast from the 4th Street Viaduct over the rail yard to the 6th Street Viaduct center span and portions of the Eastern Warehouse Landscape Unit. The photograph for Key Viewpoint 2 was taken in the River-Rail Landscape Unit looking southwest from the 4th Street Viaduct to the center span and western portion of the 6th Street Viaduct.

The existing visual character from both of these viewpoints is of a heavily industrialized area of low visual quality, with low vividness, intactness, and unity. The bridge itself has a high visual quality due to its vividness within the landscape. The new viaduct concept selected to replace the existing structure would change the current visible features within the project area. In the case of the replication alternative (Bridge Concept 1) shown in the simulations (Figures 3.8-9 and 3.8-10), “new” elements would include the reintroduced center-span monuments and end monuments at each of the four corners of the main span bridge (these were removed from the existing bridge in the 1950s for public safety). The new bridge rails would be slightly taller than those of the existing structure, but from this distance, that change would be unnoticeable. In addition, the new viaduct would have longer spans outside the main span. The purpose of the longer spans is to be able to completely span the railroad tracks on both sides of the river. The effect of longer spans would change the balance and proportion from the existing viaduct. The viaduct with Bridge Concept 1 would be visually similar when viewed from the 6th Street roadway, but the existing “goose-neck” street light fixtures would be removed and replaced with a system that more closely replicates the original design.
Figure 3.8-9  Viewpoint 1: Bridge Concept 1 – Replication on Alignment ‘B’ Looking Southeast
Figure 3.8-10  Viewpoint 2: Bridge Concept 1 – Replication on Alignment ‘B’ Looking Southwest
Specific visual changes would be dependent on the design of the new viaduct structure; however, it can be assumed that the visual character of the viaduct would remain the same or possibly be increased with each of the proposed replacement bridge concepts because the new structure designs create an equally memorable structure in the landscape. The character of the surrounding land use, however, would remain the same. The project would require the removal of some existing buildings north of the viaduct, which would have the effect of creating some open space where none currently exists; the extent of this is dependent on the alignment selected. This land could either be left as open space within the community or sold and new businesses constructed. If left open, views to the new structure would increase, and the open space could improve the existing visual quality of the surrounding landscape units.

It is not anticipated that any of the proposed structures would result in a significant visual impact from Key Viewpoints 1 and 2. Each of the proposed structures and alignments would create a prominent element within the viewshed and serve the same visual purpose as the existing structure – that of a memorable counterpoint to the industrial character of the surrounding land uses. In the case of the replication concept (Bridge Concept 1), the visual character of the viaduct would still be modified from the existing by restoration of previously removed architectural elements, and the fact that the structure would be new.

An additional change to note between the replicated viaduct compared to the existing structure is that the replacement viaduct would have longer spans on the east and west sides of the main span. The current structure has columns set within the railyards on each side of the river, which conflict with the railroad operations. To rectify this, the new viaduct has been designed to span the railyards, creating longer spans on each side of the relatively short spans over the river. The remaining spans of the viaduct will also be longer. The longer spans would change the balance and proportions (between span to column) found in the current structure, with its equally spaced columns throughout the structure, to one in which the center spans would appear much shorter relative to the overall viaduct structure.

Residents and local business employees would most likely notice the changes in the visual environment from the replacement of the structure. Pedestrians on the 4th Street Viaduct would have clear views of the new structure, and commuters would have a partial view to full view depending on the height of their vehicle in relation to the height of the railing. Those who regularly use the 4th Street Viaduct, such as residents, business employees, and commuters, would most likely notice changes to the visual environment caused by the structure replacement; however, awareness of a changed structure would quickly diminish, and the new facility would become a familiar component within the overall viewshed.
Key Viewpoint 3
Simulations from this key viewpoint can be seen in Figures 3.8-3 to 3.8-8 under the discussion of the proposed bridge concepts.

Key Viewpoint 4
The photograph for this key viewpoint was taken facing west on the 6th Street Viaduct, towards Downtown Los Angeles, and represents the view of the WB traveler on 6th Street.

The character of the existing view is highlighted by the main-span elements (i.e., railing, light fixtures, and arches), along with the background view of the downtown skyline. The main-span elements increase the visual quality of the view due to their vividness and proximity to the viewer; however, the elements outside of the bridge (i.e., power transmission lines, adjacent industrial buildings, rail lines, and concrete channel) detract from the view, lowering the unity and intactness, as well as the vividness of the view. Overall, the view has a moderate to moderately low quality. Visual simulation of this viewpoint was performed for three representative bridge concepts: Concept 1 – replication; Concept 2 – arches (representing Bridge Concepts 2 and 3); Concept 4A-extradosed with dual pylon (representing design expression of Concept 4) and Concept 5 – extradosed with single pylon, respectively, as described below.

Bridge Concept 1 – Main Span Replication (Figure 3.8-11) would be a replica of the existing bridge; most of the “new” elements would appear similar to the existing. The new railings would be slightly higher than the current, and the monuments at the center span and the archway tie-in points would reflect their former height and mass. As previously discussed, the arrangement of columns would differ from the existing by spacing the columns farther apart beginning at the railyards and continuing to each end of the viaduct, which would alter the balance and proportions found in the existing structure. The roadway would also be wider than existing to accommodate the wider outside lanes and center median.

Bridge Concept 2 – Parallel Tied Arches (Figure 3.8-12) includes a pair of arches on each side of the new bridge. The monuments at each of the four corners of the archways would be less massive than what would be included in the replication alternative. Other bridge elements (e.g., lights and railing) would be new. The roadway would also be wider than existing.

Bridge Concept 4A – Extradosed with Dual Pylons (Figure 3.8-13) has a series of dual pylons with cables located on each side of the new viaduct. The new structure would be wider than the existing, with a belvedere on each side of the bridge to provide a viewing platform. The pylons and cables would present a more modern image than the current steel truss arches.
Figure 3.8-11  Viewpoint 4: Bridge Concept 1 – Replication
Figure 3.8-12 Viewpoint 4: Bridge Concept 2 – Parallel Steel Tied Arches
Figure 3.8-13  Viewpoint 4: Bridge Concept 4A – Extradosed with Dual Pylons
Figure 3.8-14 Viewpoint 4: Bridge Concept 5 – Extradosed with Single Pylon
Bridge Concept 5 – Extradosed with Single Center Pylon (Figure 3.8-14) has a series pylons with cables located in the raised median of the new viaduct. The new structure would be wider than the existing, but in this alternative, no outside elements, such as monuments or belvederes, would be located along the outside edge of the structure. The pylons and cables would present a more modern image than the current steel truss arches.

While the changes to the visual character resulting from Bridge Concept 1 – Replication would be minor at the center span, the effect of the longer spans on each side of the main span would alter the proportions and balance of the bridge and, therefore, the overall composition created by the main span and the equally proportioned remaining spans found on the existing viaduct. Other changes between the replication and the existing structure are related to the wider cross section and the elements that have been reintroduced (i.e., monuments and historic light standards). The visual quality of the structure would be expected to decrease slightly due to the changes to the proportions and balance in the replicated structure; however, the overall visual quality for the project area would not be expected to change.

A new Bridge Concept 2 would present a different visual character or experience than the existing, and the arch units on each side would be somewhat taller than the existing; however, the bridge components (i.e., steel arch, concrete monuments) are similar in character to the existing.

The resulting vividness of the structure would still be high with a memorable structure. The intactness and unity would remain the same.

Concepts 4 and 5 Bridges would differ greatly from the design of the existing structure. In place of the arches, there would be a series of cables and concrete pylons. The new design would be no less memorable, so the vividness of the new structure would not differ from the existing, but the character would be different. The unity and intactness of the view would remain the same as existing.

Those user groups (i.e., local residents, business employees and owners, and daily commuters) who have more frequent contact with the existing viaduct would be most likely to notice the subtle changes associated with the new replacement, but the overall response to Bridge Concept 1 would be anticipated to be positive for travelers on 6th Street.

For Bridge Concepts 2 and 5, residents, local business employees, and commuters on the bridge would be most likely to notice the changes in the visual environment because of their familiarity with the views to the existing structure. Some of these viewers could be expected to miss the historic feel of the old bridge, while others could be equally excited by the new bridge design.
Overall, since the new bridge design would still provide a memorable crossing point on the viaduct, the anticipated viewer response is expected to be positive.

While each alternative Concept, including the replication of the structure, would be expected to alter the existing views to varying degrees depending on the alternative selected, the most notable visual impact would be from the replacement of a historic structure with a new structure of different design, or appearance in the case of the replicated structure. However, each of the designs analyzed maintains the vividness (memorability), unity, and intactness experienced with the current viaduct structure.

### 3.8.3.3 Indirect Impacts

No indirect impacts on visual resources have been identified for Alternative 2 – Retrofit, Alternative 3 – Replacement, and Alternative 1 – No Action as long as the viaduct remains in service. In the event it was determined to be unserviceable, the City would have to seek emergency funding source to replace it. The indirect impacts under this circumstance would be the same as the impacts described under Alternative 3 - Replacement.

### 3.8.4 Avoidance, Minimization, and Mitigation Measures

To address potential adverse visual impacts to the proposed project area and community concerns over the change in the visual appearance of the bridge within the community, the following actions are recommended. With implementation of these mitigation measures, the visual impacts can be reduced, and the project would not result in a substantial change in overall visual quality for the area.

#### Alternative 1 – No Action

No specific mitigation measures are required as long as the viaduct remains in service. The eventual closure and replacement of the viaduct structure if it was determined to be unserviceable would require the same mitigation measures described under Alternative 3 – Replacement.

#### Alternative 2 – Retrofit

No specific mitigation measures would be required.

#### Alternative 3 – Replacement

The following measures would help avoid, minimize, and mitigate impacts associated with visual resources.

- The City would establish an Aesthetics Advisory Committee (AAC) to provide input and advice throughout the design period of the project, including input on bridge aesthetics for the new structure and associated roadways under improvement within the scope of this project. The AAC would participate in design review meetings and provide input on selected...
design elements including, but not limited to, colors, textures, lighting, railings, and community/City gateway monumental elements.

- The City would participate in relevant meetings with the LABOE Los Angeles River Project Office (LARPO) to develop a plan to implement elements of the LARRMP to improve the area near the 6th Street Viaduct to be consistent with the LARRMP goals. In addition to LARPO, meetings would include, but not be limited to, the Planning Department, the Recreation and Parks Department, and the Community Redevelopment Agency.

- The City would provide improvements to enhance the aesthetics and pedestrian safety of 10 out of 13 affected intersections along the proposed detour routes that could not be mitigated (see Section 3.7.3.1). Types of improvements would be developed with public input and using context-sensitive design solutions, and may include but not be limited to decorative crosswalk with community theme and raised median with hardscape treatment where space allows.
3.9 Cultural Resources

This section addresses potential impacts associated with archaeological and historic architectural resources within the designated Area of Potential Effects (APE). The information is excerpted from the Historic Property Survey Report (HPSR)\(^46\), which contains two technical reports, including the Archaeological Survey Report (ASR)\(^47\) and the Historical Resources Evaluation Report (HRER)\(^48\).

3.9.1 Regulatory Setting

“Cultural resources,” as used in this document, refers to all historic architectural and archaeological resources, regardless of significance. The following laws and regulations deal with cultural resources.

The National Historic Preservation Act of 1966 (NHPA), 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 (NRHP). Section 106 of the 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 (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the ACHP, 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 ACHP’s regulations (36 CFR 800) streamlining the Section 106 process and delegating certain responsibilities to Caltrans. FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 CFR 773) (July 1, 2007).

Historic properties may also be subject to Section 4(f) of the U.S. Department of Transportation Act, which regulates the “use” of land from significant historic sites. See Appendix B for the Section 4(f) Evaluation for the proposed project.

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 NRHP listing criteria. It further specifically requires the Department to inventory state-owned structures in its ROWs. Sections


5024(f) and 5024.5 require state agencies to provide notice to and consult with the 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.

### 3.9.2 Affected Environment

A study to identify potential historic properties in the APE of the project and to evaluate the eligibility of any identified properties for inclusion in the NRHP was conducted in October 2007. An Historic Property Survey Report (HPSR) and Historical Resources Evaluation Report (HRER) were prepared in accordance with the Section 106 PA. An intensive pedestrian survey by architectural historians during May, June, and July 2007 determined that there were 145 properties within the area of potential effects (APE). Of those, one (1) resource (6th Street Viaduct) was previously determined eligible for listing in the NRHP. Five (5) other properties, the Iron Mountain/1340 E. 6th Street building (comprising 2 parcels) and the Union Pacific Railroad (UPRR) (comprising 3 parcels), were previously evaluated for historic significance. The Iron Mountain/1340 E. 6th Street building was previously determined not eligible for listing in the NRHP. The UPPR was previously determined eligible for listing in the NRHP; however, the SHPO did not concur with the finding.

Upon investigation, 33 of the properties in the project APE were found to contain historic-era built resources (properties that pre-date 1957) that needed to be evaluated for historic significance. Based on the evaluation performed for this project, other than the 6th Street Viaduct no other properties within the APE are eligible for listing in the NRHP. See more details on historical architectural resource findings in Section 3.9.2.5.

One archaeological resource (Primary No. 19-003683) is located within the project APE. This site is a historic refuse deposit of artifacts dating from 1880 to 1930. The deposit was discovered during construction monitoring for another project; its historic significance is unknown, but it is assumed to be eligible for listing in the NRHP. See more details on archaeological resource findings in Section 3.9.2.4.

The 6th Street Viaduct was determined eligible for listing in the NRHP for its association with the Los Angeles River bridge program and its extraordinary Streamline Moderne steel and reinforced concrete design. Because the viaduct was determined eligible for listing in the NRHP, it is also eligible for the CRHR. It was also determined eligible as one of a thematic group of 118 “Historic Highway Arch and Other Bridges in California” as part of the Caltrans Statewide Bridge Inventory in 1987. In addition, the 6th Street Viaduct is designated as City of Los Angeles Historic-Cultural Monument (HCM) #905. Based on its NRHP eligibility, the 6th Street Viaduct...
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

is also a historic site protected under Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code [U.S.C.] 303.

In 2004, Caltrans established a survey population of 45 bridges within the City of Los Angeles (City of Los Angeles Monumental Bridges, 1900-1950).\(^{49}\) Of the 45 bridges examined as part of this study, 29 appeared to be significant as City of Los Angeles monumental bridges. The study concluded that the bridges in Los Angeles that are significant for their association with the Bureau of Engineering’s bridge program in the early to mid-twentieth century 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 determined the Los Angeles bridges are dispersed throughout the city and thus cannot be categorized as a historic district. Caltrans submitted this survey update to the SHPO.

During the Draft EIR/EIS preparation, concurrent Section 106 and PRC 5024.5 consultation with SHPO was undertaken. An HPSR, with supporting HRER and ASR, was submitted to the SHPO for review on September 9, 2008. No response was received from the SHPO within 30 days; therefore, Caltrans proceeded per stipulation VIII.C.5.a of the PA as documented in a November 12, 2008, e-mail from Gary Iverson, Caltrans District 7, to the SHPO. The Finding of Effect (FOE) was submitted to SHPO on January 27, 2009. A letter dated March 19, 2009, from SHPO to Caltrans concurred with the finding that the proposed project will have an adverse effect on historic property (i.e., 6th Street Viaduct).

During preparation of this Final EIR/EIS, the CRA/LA submitted a letter dated July 28, 2010, to the Project Development Team (PDT) indicating that an historic site survey of the Adelante Eastside Redevelopment Area was completed in July 2010. The letter included a map of a proposed “Historic District – Anderson Street” showing one building classified as “contributor” to the proposed Anderson Street District located within the 6th Street Viaduct APE (Building No. 17 on Figure 3.4-2). This building had previously been determined to be not eligible for the NRHP by Caltrans based on the 2007 HRER prepared for the 6th Street Viaduct Seismic Improvement Project.

In response to the CRA/LA letter, the PDT contacted CRA/LA staff to obtain detailed information about the survey and any planned local nomination/certification process for the proposed district. The CRA/LA provided an incomplete report entitled “Intensive Historic Resources Survey, Adelante Eastside Redevelopment Area, July 2008,” and supporting

Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

California Department of Parks and Recreation (DPR) 523 forms related to the proposed Anderson District, in January 2011. This report contains different map as provided in the original letter (dated July 2010); it identifies property No. 17 and 14 (see Figure 3.4-2) as individually eligible but not as a district contributor. Similar to Building No. 17, Building No. 14 had previously been determined to be not eligible for the NRHP by Caltrans based on the 2007 HRER prepared for the 6th Street Viaduct Seismic Improvement Project. In addition, the report does not include any DPR forms for these two buildings that can be used as a basis to conclude that they are individually eligible.

Based on review of the available documents associated with the potential Anderson District mentioned above, there appear to be several inconsistencies and errors that require correction and finalization. Since the historic survey was prepared as a planning tool for CRA/LA, the methodology employed looked at a large number of properties at a reconnaissance level and made recommendations based on broad patterns of significance. This document does not provide sufficient data to make a determination of significance for the NRHP for the purposes of Section 106 of the NHPA or for CEQA.

3.9.2.1 Historical Architectural APE
The historic architectural APE was defined to include the area directly affected by construction and construction staging, as well as a buffer area immediately adjacent to the construction limits. Land uses within the historic architectural APE consist of industrial and commercial properties. Thirty-three (33) properties in the project APE contained historic-era built resources (i.e., buildings, structures, and/or objects that pre-date 1957) that needed to be evaluated for historic significance. Based on the evaluation performed for this project, other than the 6th Street Viaduct (Bridge #53C-1880) none of the resources within the APE are eligible for listing in the NRHP. The 6th Street Viaduct is therefore protected under Section 4(f) of the Department of Transportation Act. The impact to this Section 4(f) resource is analyzed in Appendix B2 of this EIR/EIS.

Two historic bridges are located within 0.5-mile from 6th Street Viaduct (outside the APE), including 4th Street Viaduct (0.2-mile to the north) and 7th Street Bridge (0.2-mile to the south). Both 4th Street Viaduct and 7th Street Bridge are determined eligible for listing in the NRHP, and are protected under Section 4(f). The discussion of these two resources relative to Section 4(f) is provided in Appendix B1 of this EIR/EIS.

3.9.2.2 Archaeological APE
The archaeological APE included all areas that would be subjected to subsurface ground disturbance under both build alternatives. One archaeological resource (Primary No. 19-003683) is located within the project APE. Its historic significance is unknown, but it is assumed to be
eligible for listing in the NRHP, per Stipulation VIII.C.3 of the Section 106 PA. The areas near
the existing and proposed viaduct footings are those subject to extensive ground disturbance. Other
areas within the archaeological APE, including the building demolition areas, would be subject to
shallow subsurface disturbance.

3.9.2.3 Research Methods
A cultural resources records search of the APE and the surrounding 1-mile radius was conducted
on April 30, 2006, by staff at the South Central Coastal Information Center (SCCIC) at
California State University, Fullerton. The SCCIC is the designated repository of the California
Historical Resources Information System (CHRIS) and houses records concerning
archaeological and historic resources and associated studies in Los Angeles County. During the
records search, the following sources were consulted:

- National Register of Historic Places (NRHP)
- California Register of Historical Resources (CRHR)
- California Historic Resources Inventory (CHRI)
- California Historical Landmarks (CHL)
- California Points of Historical Interest (CPHI)
- Archaeological Determinations of Eligibility
- Archaeological site records
- Maps depicting site locations
- Historic USGS Pasadena 15’ Topographic Quadrangle of 1896
- Historic USGS Pasadena 15’ Topographic Quadrangle of 1900
- Historic USGS Los Angeles 6’ Topographic Quadrangle of 1928
- Cultural resource studies and reports that covered areas within 1-mile of the APE

Seventy-three (73) historic architectural and archaeological resources surveys for other projects
have previously been conducted within a 1-mile radius of the archaeological APE. Thirteen (13)
of these studies include portions of the APE and covered approximately 90 percent of the
proposed project. The records search revealed that 13 previously recorded archaeological
resources and 54 historic architectural resources were identified within a 1-mile radius of the
project APE. Of the 13 archaeological resources identified within the 1-mile search radius, only
one resource, designated site 19-003683, is located within the proposed project’s APE.

As part of the background research, the Native American Heritage Commission (NAHC) was
contacted to request information on any known Native American cultural resources and for
names of Native American individuals/organizations that may have knowledge of cultural
resources in the project area. The NAHC responded on April 2, 2007, stating that their search of
sacred land files revealed no indication of the presence of Native American sacred lands in the immediate project area; however, they also recommended that other Native American individuals/organizations be contacted to verify the findings of the NAHC. Notification letters were sent to the following Native American tribes on June 15, 2007:

- Ti’At Society
- Gabrielino Tongva Indians of California Tribal Council
- Gabrielino/Tongva Council/Gabrielino Tongva Nation
- Gabrielino/Tongva Tribal Council
- Tongva Ancestral Territorial Tribal Nation
- Fernando Tataviam Band of Mission Indians
- Los Angeles City/County Native American Indian Commission

Information regarding cultural resources was also sought from local government agencies, historical societies, and historic preservation groups. Letters were sent by U.S. Mail on June 1, 2007 to local government agencies and local historic preservation and historic preservation advocacy groups/societies requesting information on potential historic resources in the area of the proposed 6th Street Viaduct Seismic Improvement Project, including:

- United States Army Corps of Engineers (USACE), District Planning Section
- City of Los Angeles, Office of Historical Resources, Department of City Planning
- Los Angeles Conservancy
- Historical Society of Southern California
- California Historical Society
- American Society of Civil Engineers
- Boyle Heights Historical Society
- Chinese Historical Society of Southern California
- Jewish Historical Society of Southern California
- Los Angeles Railroad Heritage Foundation
- Society of Architectural Historians, Southern California Chapter

Comments received ranged from requests for additional research requests for additional consideration regarding the project alternative selection.

Other outlets for public involvement included public information meetings, stakeholder group meetings, Community Advisory Committee (CAC) meetings, and public scoping meetings. Refer to Attachment 2 in the HPSR prepared for this project for additional information, copies of all notices, and responses to comments received.
3.9.2.4 Archaeological Resource Findings

An archaeological field survey of the APE, using a combination of pedestrian and “windshield” techniques, was conducted by qualified archaeologists on May 21, 2007. Most of the APE is within existing roadways and/or adjacent to the banks of the Los Angeles River and has been subjected to extensive disturbance. The survey resulted in the finding of new location of site 19-003683, though visibility was obscured by the presence of road gravels and cargo containers. The site, consisting of historic period domestic refuse, is located within the southern APE parcel.

Furthermore, the long historic use of the area increases the likelihood of finding additional buried historic-era cultural resources as a result of excavations undertaken in association with project construction. The presence of historic-era cultural resources and the proximity of Native American cultural resources, as revealed through the NAHC search of the Sacred Lands Database and consultation with representatives of the Native American community, indicates a moderate to high likelihood that historic-era and/or Native American cultural resources may be encountered as a result of project construction.

Per 36 CFR 800.4(c)1 and the Section 106 PA, Stipulation VIII.C.2 [Caltrans PA 2003:4]), the previously identified cultural resource site (19-003683) present within the APE requires evaluation to determine NRHP eligibility and by extension eligibility for the CRHR, should it be subject to impacts from the project. However, per the Caltrans PA Stipulation VIII.C.3 (Caltrans 2003:4), “If archaeological properties within an undertaking’s APE are protected from any potential effects by establishment and effective enforcement of an Environmentally Sensitive Area (ESA), as described in Attachment 5 to this Agreement, the signatories agree that Caltrans may consider such properties to be NRHP eligible for the purposes of that undertaking without conducting subsurface testing or surface collection. …” In light of these factors, it was recommended by Caltrans to the SHPO that the area in and directly adjacent to archaeological site 19-003683 be placed in an ESA, and that the site be considered eligible for the NRHP and CRHR. The establishment of an ESA Action Plan would require fencing off the area from construction activities, monitoring by a qualified archaeologist and a Native American monitor during ground-disturbing activities, and training for construction workers; therefore, the area within the defined site limits would be protected from use as a construction staging area.

Under Caltrans guidelines, cultural resources should be avoided whenever possible. Given the moderate to high potential to encounter buried archaeological resources during ground disturbance, archaeological and Native American monitoring is warranted in areas where ground disturbance would occur. A cultural resources monitoring plan, which would include Native American consultation, would be developed prior to and implemented during ground-disturbing activities associated with the project.
If cultural resources are encountered, they would be treated as “Post Review Discoveries” under 36 CFR 800.13(b)(2) and conditions outlined in the Caltrans Environmental Handbook, Volume 2, Chapter 2, Section 2-4.4. General recommendations with regard to the identification and evaluation of previously undiscovered cultural resources within the project APE suggest that if previously identified cultural materials (e.g., stone artifacts, dark ashy soils or burned rocks, or old glass, metal, or ceramic artifacts) are unearthed during construction, then it is Caltrans’ policy that work in that location should be halted in that area until a qualified archaeologist can assess the nature and significance of the find. Further disturbance in the area of the discovery is to be approved only by Caltrans and City of Los Angeles staff. Additional archaeological survey would be needed if project limits are extended beyond the present survey limits.

In accordance with 14 CCR Section 15064.5(e), in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the Los Angeles County Coroner must be notified of the discovery (California Health and Safety Code Section 7050.5), and all activities in the immediate area of the find must cease until appropriate and lawful measures have been implemented. If the coroner determines that the remains are not recent and of Native American origin, then the coroner will notify the NAHC in Sacramento within 24 hours to determine the Most Likely Descendent (MLD) for the area. The designated MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.

3.9.2.5 Historic Architectural Resource Findings

An intensive pedestrian survey by architectural historians during May, June, and July 2007 determined that there were 145 properties within the project APE. Of those, one (1) resource (6th Street Viaduct) was previously determined eligible for listing in the NRHP. Five (5) other properties, the Iron Mountain/1340 E. 6th Street building (comprising 2 parcels) and the UPRR (comprising 3 parcels), were previously evaluated for historic significance. The Iron Mountain/1340 E. 6th Street building was previously determined not eligible for listing in the NRHP. The UPRR was previously determined eligible for listing in the NRHP, but the SHPO did not make concurrence with the finding.

Upon further investigation, 33 of the properties in the project APE contained historic-era built resources (properties that pre-date 1957) that needed to be evaluated for historic significance. Based on the evaluation performed for this project, other than the 6th Street Viaduct, no other properties within the APE are eligible for listing in the NRHP.

The 6th Street Viaduct was found to be eligible for the NRHP under Criteria A and C on October 19, 1986. Its eligibility under Criteria A and C is for its association with the Los Angeles River
bridge program and its extraordinary Streamline Moderne design using steel and reinforced concrete. Its period of significance is from 1933, when it was completed, until 1957 (50-year cut-off), and its significance is at the state level. Because the viaduct has been determined eligible for listing in the NRHP, it is also eligible for the CRHR. It was also determined eligible as one of a thematic group of 118 “Historic Highway Arch and Other Bridges in California” as part of the Caltrans Statewide Bridge Inventory in 1987 (SHPO letter to Caltrans, Reply to FHWA 860919Z, January 12, 1987). The 6th Street Viaduct was proposed as a contributor to a potential NRHP-eligible “City of Los Angeles Monumental Bridges” historic district, a group of 29 bridges located within the City of Los Angeles; however, SHPO did not concur with that eligibility recommendation and it remains only individually eligible for listing in the NRHP. In addition, the 6th Street Viaduct was determined to be a City of Los Angeles Historic-Cultural Monument (HCM) in January 2008, along with 10 other city bridges (6th Street Viaduct was designated HCM #905).

Of the Los Angeles River bridges, the 6th Street Viaduct was the last of the viaducts to be designed and constructed and is transitionally important in that it established the streamline moderne/art deco design principles of the following Works Progress Administration (WPA) bridges.. The 6th Street Viaduct is classified as a steel arch, and its largest spans are twin 150-ft steel through arches. The remainder of the structure, the total span of which is 3,546 ft, is comprised of T-girder spans. Called the “best expression of the modern phase” of the 25-year bridge building program, the viaduct is also “the last and grandest of the group.” The viaduct project was begun in 1926 when the City Council voted to acquire property, and the following year, adopted the name “6th Street Viaduct.” The 6th Street Viaduct, which is the “longest and largest of the bridges spanning the Los Angeles River,” was officially opened on June 16, 1933, at a cost of $2,383,271.

Though the viaduct has been altered over the course of time, as described in the HRER, the alterations have not affected the integrity or ability of the 6th Street Viaduct to convey its historic significance. It retains integrity of its location, design, setting, materials, workmanship, feeling, and association. The distinctive design, while modestly altered by the reduction in central pylon height, infilling of walls between columns, and construction of facilities beneath the bridge, remains recognizable. Although the original setting of the 6th Street Viaduct has been modified by channelization of the river and other changes over the past 64 years, it is still distinguishable to its original surroundings. The unique materials of the 6th Street Viaduct, including its dressed

52 Ibid.
53 Ibid.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

crushed and painted steel arches, remain intact. The workmanship, including the board-formed reinforced concrete, steel rivets, and welds, remains evident. The feeling of the viaduct, or the quality that the historic property has in evoking its aesthetic and sense of a past period of time, is still present, whether traveling on the 6th Street Viaduct or viewing it from a distance. The direct link between the viaduct and the limited number of river crossings, in part for which it is significant, remains. Thus, the viaduct has an integral association with the construction of 12 significant Los Angeles River bridges.

The boundaries of the historic property include the entire bridge: its abutments, bents and piers, all approaches, the deck, all handrails, streetlight standards and luminaires, the river access tunnel, the steel and concrete arches, the spandrels, and the areas below the decks that contain bridge-related structures.

3.9.2.6 Criteria of Adverse Effect

Impacts to historic properties are determined based on the definition of effect 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 NRHP 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.” 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 contributes 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 that 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

54 36 CFR 800.5(a)(1).
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

3.9.3  Environmental Consequences

3.9.3.1  Construction Impacts

Alternative 1– No Action

The No Action Alternative proposes no changes or construction on the 6th Street Viaduct or the surrounding area as long as the viaduct remains in service. The 6th Street Viaduct would be maintained and inspected by the City of Los Angeles. Thus, there would be no impacts to historic properties under this alternative, resulting in a finding of no historic property affected pursuant to the definition of adverse effect contained within 36 CFR Part 800.

In the event the viaduct was determined to be unserviceable due to ASR and/or earthquake damage, the City would seek emergency funding sources to replace it. The new viaduct would be designed to meet current standards similar to Alternative 3 – Replacement. Construction impacts to cultural resources would be the same as that described under the permanent impact section of Alternative 3 – Replacement.

Alternative 2 – Retrofit

Archaeological resource 19-003683 is located within the project APE as a candidate area for construction equipment staging; however, the defined site limits would be protected from potential impacts through the establishment of an Environmentally Sensitive Area (ESA) Action Plan. The ESA Action Plan would establish a construction monitoring program, require training of construction workers, and stipulate the archaeology site and adjacent area be fenced off to prevent construction activities from occurring on this site.

In addition, given the moderate to high archaeological sensitivity of the project area, there is the potential to encounter buried archaeological materials during ground disturbance; therefore, archaeological and Native American monitoring is warranted. Through implementation of the ESA Action Plan to protect the archaeological resource (Site 19-003683), construction impacts would be avoided and/or mitigated, resulting in a finding of no adverse effect to the historic property pursuant to the definition of adverse effect contained within 36 CFR Part 800.

Alternative 2 would result in an adverse effect to the 6th Street Viaduct as defined by CFR Part 800.5(a)(2), and would result in construction impacts.

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.\(^{55}\)

\(^{55}\) 36 CFR 800.5(a)(2)(i through vii).
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Alternative 3 – Replacement

Construction impacts to cultural resources would be the same as that described under the permanent impact section for Alternative 3 – Replacement.

3.9.3.2 Permanent Impacts

Alternative 1 – No Action

Under the No Action Alternative, no ground disturbance would occur; therefore, archaeological resource 19-003683 would not be affected as long as the viaduct remains in service. Alternative 1 would not result in a permanent impact on the archaeological resource and would result in a finding of no adverse effect to the historic property pursuant to the definition of adverse effect contained within 36 CFR Part 800.

Under this scenario, the viaduct would not be seismically retrofitted. The City would provide ongoing maintenance and inspection to the viaduct. Therefore, this alternative would result in a finding of no historic property affected pursuant to the definition of adverse effect contained within 36 CFR Part 800.

In the event the viaduct was determined to be unserviceable due to the ASR and/or earthquake damage, the viaduct would need to be replaced. The new viaduct would be designed to meet current standards similar to Alternative 3 – Replacement. Construction impacts to cultural resources would be the same as described under the permanent impact section of Alternative 3 – Replacement.

Alternative 2 – Retrofit

Archaeological resource 19-003683 would be protected from permanent impacts through the establishment of an ESA Action Plan, including fencing off the area from construction activities, monitoring by a qualified archaeologist and a Native American monitor during ground-disturbing activities, and training for construction workers. Therefore, Alternative 2 would result in no adverse effect to the historic property with standard conditions pursuant to the definition of adverse effect contained within 36 CFR Part 800.

Under Alternative 2, the viaduct’s columns would be retrofitted by encasing them with 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 Retrofit Alternative would alter and/or destroy the historic materials, features, and spatial relationships that characterize the viaduct. Encasing the columns with steel would increase the size of the columns, and infill walls would be constructed between the columns. In addition, construction of new foundations, grade beams, retrofitting of bent caps, and closure of some
expansion joints would alter the spatial relationship of the historic features of the viaduct and the historic character of the viaduct through the introduction of new structural and visual elements, and it would result in an adverse effect on a historic property (6th Street Viaduct) pursuant to the definition of adverse effect contained within 36 CFR Part 800.

Implementation of Alternative 2 would also result in the use of a Section 4(f) historic resource (6th Street Viaduct). The Section 4(f) Evaluation is provided in Appendix B of this EIR/EIS document.

Alternative 3 – Replacement

Archaeological resource 19-003683 would be protected from permanent impacts through the establishment of an ESA Action Plan, including fencing off the area from construction activities, monitoring by a qualified archaeologist and a Native American monitor during ground-disturbing activities, and training for construction workers. Therefore, Alternative 3 would result in no adverse effect to the historic property with standard conditions pursuant to the definition of adverse effect contained within 36 CFR Part 800.

This proposed alternative would demolish the 6th Street Viaduct to build a new structure. The existing viaduct would be replaced with one of six bridge concept designs on one of the three alternative alignments under consideration. Implementation of any alignment alternative and bridge concept under Alternative 3 would destroy the historic elements, features, and spatial relationships that characterize the 6th Street Viaduct as an individual resource eligible for listing in the NRHP and the CRHR, and as a designated City of Los Angeles HCM #905, along with 10 other city bridges. Therefore, implementation of Alternative 3 would result in a finding of adverse effect on a historic property (6th Street Viaduct) pursuant to the definition of adverse effect contained within 36 CFR Part 800.

In addition, implementation of any alignment alternative and bridge concept under Alternative 3 would result in the use of a Section 4(f) resource (6th Street Viaduct). The Section 4(f) Evaluation is provided in Appendix B of this EIR/EIS document.

3.9.3.3 Indirect Impacts

As stated earlier, ASR is a chemical reaction that cannot be reversed; deterioration of concrete components of the 6th Street Viaduct from the ASR reaction will continue even though the City would provide ongoing maintenance and inspection to keep the viaduct in service. As long as the viaduct remains standing, there would be no effect to this historic resource. In the event it was determined to be unserviceable, the City would have to seek emergency funding source to replace it. The indirect impacts under this circumstance would be the same as the impacts described under Alternative 3 - Replacement.
No indirect impacts have been identified under Alternatives 2 and 3 analyzed in this EIR/EIS.

### 3.9.4  Avoidance, Minimization, and Mitigation Measures

**Alternative 1 – No Action**

No mitigation is required as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. The new viaduct would be designed to meet current standards similar to Alternative 3 – Replacement. Mitigation measures outlined under Alternative 3 – Replacement would apply to minimize impacts to cultural resources as a result of this alternative scenario.

**Alternative 2 – Retrofit**

The following mitigation measures would be implemented to minimize impacts to archaeological resources.

- An ESA Action Plan, which would include fencing off the area from construction activities, monitoring by a qualified archaeologist and a Native American monitor during ground-disturbing activities, and training for construction workers, would be developed prior to and implemented during ground-disturbing activities associated with the project.
- A qualified archaeological monitor to be present at the site during ground-disturbing activities would be provided. If cultural resources are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- A Native American monitor(s) to be present at the site during ground-disturbing activities would be provided.
- If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbance and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC who will then notify the MLD. At this time, the person who discovered the remains will contact Mr. Gary Iverson of Caltrans District 7 so that they may work in the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

Pertaining to impacts to the historic architectural resource, Caltrans and the City consulted with the SHPO regarding the effects of the proposed project on the 6th Street Viaduct and potential measures to resolve adverse effects prior to construction. In this regard, the 6th Street Viaduct was previously recorded as part of the Historic American Engineering Record (HAER) program in 1996. Prior to any viaduct demolition or construction activities, Caltrans and the City would contact the National Park Service (NPS) Historic American Buildings Survey (HABS)/HAER...
program to determine the degree of additional recordation required for the property beyond that provided in 1996 (HAER No. CA-176).

The Draft EIR/EIS anticipated that the following measures could resolve the adverse effects on the 6th Street Viaduct pursuant to 36 CFR Part 800, as incorporated in a Memorandum of Agreement (MOA) with the SHPO and other consulting parties. If this alternative were selected, the MOA would be prepared and executed by SHPO and Caltrans with concurrence of the City of Los Angeles. Potential measures to resolve the adverse effect of Alternative 2 could include the following:

- The City would incorporate all applicable Secretary of Interior’s Standards for the Treatment of Historic Properties (36 CFR Part 68) into the design of retrofitting components.
- The City would install two new freestanding informative permanent metal plaques or signage at both ends of the bridge at public locations that provide a brief history of the bridge, its engineering features and characteristics, and the reasons it was replaced. Additionally, the City would install a Cultural Heritage plaque at each end of the bridge on the interior bridge rails in accordance with the City of Los Angeles’ Cultural Heritage Monument program.
- The 6th Street Viaduct was previously recorded as part of the HAER program in 1996. Prior to any viaduct demolition or construction activities, Caltrans and the City would contact the NPS HABS/HAER program to determine the degree of additional recordation required for the property beyond that provided in 1996 (HAER No. CA-176). Unless otherwise agreed to by the NPS HABS/HAER, Caltrans and the City would ensure that all documentation is completed and accepted by HABS/HAER before the viaduct is altered or demolished.

Since Alternative 2 is not the preferred alternative for this proposed project, an MOA was not executed for this alternative.

**Alternative 3 – Replacement**

Mitigation measures under this alternative would be the same as with Alternative 2 for archaeological resources.

Caltrans and the City consulted with the SHPO regarding measures to resolve adverse effects of the proposed project, viaduct replacement, on the NRHP-eligible 6th Street Viaduct prior to construction. The MOA has been executed and is included in Appendix O of this Final EIR/EIS. The following stipulations pertaining to treatment of historic properties set forth in the MOA (Stipulation II) would be implemented by Caltrans and the City, and included in the Mitigation Monitoring and Reporting Program (see Appendix F).

- Prior to the start of any work that could adversely affect any characteristics that qualify the 6th Street Viaduct (Bridge No. 53C-1880 and 53-0595) as a historic property, contact the
National Park Service Western Region Office (NPS) in Oakland, California, to determine if additional recordation is required for the historic property beyond that provided in “Historic American Engineering Record, 6th Street Bridge, HAER No. CA-176,” dated May 7, 1996. The City shall provide NPS 30 days to respond to their additional recordation determination request. If additional documentation is required, Caltrans shall ensure that the additional documentation is completed and accepted by NPS before the viaduct is altered and/or demolished. The City shall prepare draft and final reports to be reviewed by NPS.

- Upon completion, copies of the documentation prescribed above, consisting of an acid-free xerographic copy of the report, prepared on standard 8.5-inch by 11-inch paper, shall be retained by Caltrans District 7, deposited in the Caltrans Transportation History Library in Sacramento, and offered by the City to, at a minimum, the Los Angeles Public Library, Los Angeles Conservancy, Los Angeles City Historical Society, Historical Society of Southern California, City of Los Angeles Office of Historical Resources, and the California Office of Historic Preservation.

- The City shall work with the Los Angeles Public Library to place the historical information from the HABS/HAER report on a City Web site with a link to a public library Web site, such as the Los Angeles Public Library Web site, available to the public for a minimum period of 2 years. The information link will also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on their Web site.

- The City shall produce a documentary (i.e., 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 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.

- The City shall 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 Caltrans (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 concept, significant character-defining features, and its historic significance. The City shall post an electronic version of the booklet on a City Web site and produce paper copies for distribution to local libraries, institutions, and historical societies. One copy shall be
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

submitted to the Caltrans Transportation Library and History Center in Sacramento. The City shall maintain the camera-ready master booklet and produce additional copies if there is demand.

- The City shall install two new freestanding informative permanent metal plaques or signage at both ends of the bridge at public locations that provide a brief history of the viaduct, its engineering features and characteristics, and the reasons it was replaced.

- The City shall offer artifacts removed from the viaduct during demolition to local museums or other suitable facilities to be determined by the City. The accepting institutions shall arrange their own transportation to deliver the artifacts to designated locations.

In addition, the following stipulations for project document reviews (Stipulation III) shall be implemented by the City and the SHPO:

- The City shall submit to the SHPO for review and comment design development drawings, and 30, 60, and 90 percent construction documents for work on the 6th Street Viaduct.

- The SHPO will review the project documents included in each consultation package submitted by the City to determine whether the Project Documents conform to the criteria cited in paragraph A of this stipulation. SHPO will provide comments on each submittal to the City within 30 calendar days of receipt. If the SHPO does not comment within the time provided, the City may assume that the SHPO concurs that the package conforms to the criteria cited.

- The City will incorporate SHPO comments into the Project Documents to the fullest extent. If the City revises the Project Documents in response to the SHPO comments, then no further review is required for that submittal. The City will promptly notify SHPO in writing that it has revised the Project Documents in accordance with SHPO comments.

- Should the City object to incorporating any SHPO comments into the Project Documents, the City will provide SHPO with written explanation of its objection. Promptly after receiving a written objection from the City, the City and SHPO shall consult to resolve the objection. If the objection is not resolved, the administrative provision stipulation pertaining to resolving objections (Stipulation IV.C.) shall be implemented.
PART II – PHYSICAL ENVIRONMENT

3.10 Hydrology and Floodplains

This section addresses potential impacts to stormwater drainage systems and floodplains that could result from implementation of various alternatives of the proposed project. The information presented in this section is excerpted from the Hydrology/Hydraulics Report\textsuperscript{56} and Location Hydraulic Study\textsuperscript{57} prepared as part of this project.

3.10.1 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 FHWA requirements for compliance are outlined in 23 CFR 650 Subpart A.

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.”

3.10.2 Affected Environment

3.10.2.1 Overall Hydrologic Conditions

The proposed project is located within the Los Angeles River Basin in hydrologic subarea 405.15 (Figure 3.10-1). The watershed contributes flow to the Los Angeles River Basin. The basin covers an area of approximately 830 square miles, with its upper reach (approximately 200 square miles) covered by forest and open space and the lower portion made up of highly developed industrial, commercial, and residential land uses. The river is approximately 50 miles long and collects stormwater runoff from the watershed, some outcropping groundwater located within the Glendale Narrows, and tertiary treated effluent from wastewater treatment plants. The


\textsuperscript{57} Location Hydraulic Study for 6th Street Viaduct Seismic Improvement Project. March 2009; updated February 2011.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

October 2011  6th Street Viaduct Seismic Improvement Project

river is paved with a concrete lining along the lower reach of the basin and outlets into the Queensway Bay in the Los Angeles/Long Beach Harbor.

EPA recently determined that the entire Los Angeles River is a navigable waterway; however, the United States Coastal Guard (USCG) determined that the only part of the Los Angeles River that is navigable from the USGC’s perspective is from the river mouth to Pacific Coast Highway in the City of Long Beach.

![Watershed Map – Hydrologic Subarea 405.15](image)

**Figure 3.10-1 Watershed Map – Hydrologic Subarea 405.15**

The climate for this region is generally dry in summer with mild, wet winters. The average annual rainfall for Los Angeles is approximately 15.5 inches, with most precipitation occurring during the winter months between November and March.

The project is located in a heavily urbanized land-use area zoned commercial and industrial. A very high percentage of the surrounding project area is impervious, consisting primarily of buildings and paved surfaces. The only substantial pervious areas are the rail yards on each bank of the river and a few small areas of unimproved land adjacent to and beneath the existing viaduct on the east side of the river. The small amount of pervious land that does exist has
moderate infiltration rates when thoroughly wetted and consists chiefly of moderately well to well-drained sandy loam. Site topography ranges from 250 ft to 300 ft above mean sea level throughout the 4,000-ft project alignment.

3.10.2.2 Existing Drainage System
The existing project site, which includes the local streets below the viaduct, is drained by several separate storm drain systems. The area surrounding the viaduct site is drained by three primary drainage subareas. The first subarea (Subarea A) is located west of the Los Angeles River and extends south to 7th Street. The second subarea (Subarea B) is located east of the Los Angeles River and drains the area primarily northeast of 6th Street and west of Anderson Street. The third area (Subarea C) drains approximately the eastern third of the project north and south of 6th Street and west of US 101 (Figure 3.20-2).

Subarea A covers a large area west of Mateo Street and collects a smaller area north and south of 6th Street east of the Los Angeles River. In addition to this area, it also drains all of the viaduct runoff from Mateo Street east to US 101. This subarea is drained by a 97-inch-diameter storm drain flowing west on 6th Street and then turning south onto Mateo Street. The storm drain outlets into the west bank of the Los Angeles River on the south side of 7th Street.

Subarea B lies on the east bank of the Los Angeles River and drains an industrial area north of 6th Street bound by the UPRR yard on the west and Anderson Street on the east. A 30-inch-diameter storm drain flows south on Mission Road collecting stormwater on the east/west streets north of 6th Street. It then changes direction on Jesse Street, where it discharges into the river.

Subarea C includes a 62-inch-diameter city storm drain. It collects runoff from subarea C and also bypasses runoff from a small upstream watershed that extends east beyond US 101. As shown in Figure 3.10-2, a 45-inch-diameter storm drain outlets into the 62-inch drain. In addition to collecting stormwater from a small watershed east of US 101, the 45-inch drain was also designed with the intent to empty Hollenbeck Lake, which is located east of US 101. The storm drain runs through the intersection of Jesse Street and Clarence Street. The storm drain discharges into the Los Angeles River at 7th Street. As shown in Figure 3.10-2, a 138-inch-diameter Los Angeles County storm drain runs parallel to the 62-inch storm drain and discharges to the Los Angeles River at the south side of 7th Street. This large storm drain collects stormwater from a small watershed between 6th Street and 7th Street and a large watershed east of US 101.
It should be noted that Subareas A and C lie downstream of a larger subarea. Only portions of these subareas are shown that directly contribute flow to the associated storm drain that passes through the project site to the outfall. A summary of existing storm drain flows is presented in Table 3.10-1.

**Table 3.10-1**

**Existing Storm Drain Flow Summary**

<table>
<thead>
<tr>
<th>Subarea</th>
<th>Area* (Acre)</th>
<th>Existing Outfall Pipe Size (inches)</th>
<th>Existing Pipe Capacity** (cfs)</th>
<th>Subarea Flow Rate (cfs)</th>
<th>Project Flow Rate*** (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>85</td>
<td>97</td>
<td>296</td>
<td>83</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>21</td>
<td>30</td>
<td>25</td>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>71</td>
<td>62</td>
<td>138</td>
<td>69</td>
<td>3</td>
</tr>
</tbody>
</table>

Notes:
- cfs = cubic feet per second
- * Downstream area of reach subarea contributing to outfall
- ** Capacity based on pipe geometry and flowing full (no Hydrologic Study done)
- *** Viaduct deck only; however, the flow is also included in subarea flow rate shown in Column 5.

3.10.2.3 Proposed Drainage System

Viaduct Runoff Management

In the existing condition, all runoff of the viaduct flows by gutter and is collected at Mateo Street. The viaduct was originally designed with drainage openings on the deck to allow stormwater to reach the ground level; however, these openings were sealed approximately 10 years ago during the bridge deck resurfacing. This current condition has created excessive runoff concentration during a major storm event, causing clogging at the inlets located at Mateo Street. The pipe size leading to the 97-inch-diameter storm drain on Mateo Street is a 36-inch-diameter pipe and has a design flow full capacity of 42 cubic feet per second (cfs). Since the work under the Retrofit Alternative would be confined within the existing viaduct footprint, no change to the storm drain system would be undertaken. Under the Replacement Alternative (all alignments and bridge concepts), it is proposed that the new viaduct structure would collect runoff approximately every 500 ft and direct it to ground level at convenient bent locations, where it could be collected and treated for water quality prior to being discharged into the local storm drain system. This approach would be consistent with current design practice and allow the runoff to be handled more efficiently.

For draining the viaduct deck, it is estimated that approximately 7 deck/roadway drains on each side would be required for collecting onsite runoff along the full length of the viaduct. These would preferably be located at or near proposed viaduct bents or piers to allow conveyance through pipe outlets integrated into the columns. West of the river, new curb inlets (with vortex separators) located at Mateo Street would be utilized to collect and treat runoff prior to discharge into the existing storm drain. East of the river, the deck drains would outlet to an area that drains to a catch basin located east of the Los Angeles River east floodwall, Mission Road, and an alley east of Anderson Street and Clarence Street. This runoff would then be routed to the offsite storm drains via either extended detention basins or biofiltration swales. The proposed viaduct would intercept flow on the order of 5 cfs to the west of the river (in drainage area A) and 6 cfs to the east of the river (in drainage areas B and C).

Local Street Drainage System Modification

Modification to local street drainage system would be undertaken in and around the existing grade of the local streets. It is not the intent of the proposed project to reconstruct existing utility and infrastructure elements unless there is direct damage as a result of project construction. Due to right-of-way constraints, the existing outfall storm drains would not be modified as part of either Alternative 2 or 3. If replacement of any portion of the existing drainage system were found to be necessary due to conflict with other utilities, then that part would be replaced with the same material and size as the original.
3.10.2.4 Floodplain

The project site is included on the Federal Emergency Management Administration (FEMA) Flood Insurance Rate Map. It is in the Community of the City of Los Angeles. The Map Number is 06037C1636F, with an effective date of September 26, 2008. The Los Angeles River is a floodway shaded in color in the following floodplain map, which is cropped from the FEMA floodplain map 06037C1636F, and flood flows are confined within the levees. The remaining areas of the project site are located in Zone X, which are areas determined to be outside of the 500-year floodplain (Figure 3.10-3).


Figure 3.10-3 Floodplain Map

3.10.3 Environmental Consequences
3.10.3.1 Construction Impacts
Alternative 1 – No Action

Storm Drain System
No impacts to the storm drain system would occur under the No Action Alternative as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. It is anticipated that a similar viaduct design as described under Alternative 3 – Replacement would be used. Impacts to the storm drain system would be the same as described under Alternative 3 – Replacement.

Floodplain
The stretch of the Los Angeles River at the 6th Street Viaduct is concrete lined, as shown in Figure 3.10-4.
To evaluate the impact to the river channel, an HEC-RAS hydraulic model developed by the United States Army Corps of Engineers (USACE) as part of the Los Angeles County Drainage Analysis (LACDA) was used to predict the baseline condition. The design discharge for this stretch of the Los Angeles River is 104,000 cfs, which is determined by USACE based on risk and economical benefit analyses. The design discharge is higher than a 100-year storm event. The modeling results indicate that the design water level immediately upstream of the viaduct is 253.49 ft above the mean sea level (MSL) and that at the downstream edge of the bridge it is 242.82 ft. Based on the results of the model, it can be concluded that the pier of the 6th Street Viaduct restricts the flood flow and causes more than 10 ft of water surface backup upstream of the bridge under the existing condition.

In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. Impacts to the floodplain would be the same as that described under Alternative 3 – Replacement.

---

Alternative 2 – Retrofit

Storm Drain System
Construction activities for the Retrofit Alternative would be confined within the existing viaduct footprint. No impact to the existing storm drain system would occur as a result of construction activities.

Floodplain
The stretch of the Los Angeles River at the 6th Street Viaduct is concrete lined, as shown in Figure 3.10-4.

Based on the preliminary design information presented in the 6th Street Viaduct Final Seismic Retrofit Strategy Report (2004), no retrofit would be constructed at the center pier; therefore, the hydraulic conditions after the retrofit would be the same as those for the existing conditions, as presented in Alternative 1.

The USACE does not allow any construction work within the channel during the rainy season from October 15 through April 15; therefore, construction activities, including the use of falsework, would be limited to the dry weather season when the channel flow is very low. The minimum channel capacity conveyance would be preserved during construction, allowing the summer dry weather flow to pass through unobstructed. No impacts to flood flow due to construction activities are anticipated.

Alternative 3 – Replacement

Storm Drain System
Under this alternative the viaduct would be demolished and replaced. The construction period would take up to 4 years. The affected construction area is fully built; thus, no net increase in runoff flow is expected from the construction zone. Construction-related stormwater and nonstormwater discharges would be diverted into detention basins to be treated before discharging into the river or existing storm drain systems. Construction site sheet flows would be retained with sandbags and silk fences to prevent construction runoff.

Floodplain
Construction of the Replacement Alternative would require demolition of the existing viaduct and construction of the new structure. Four out of the six bridge concepts would have the center pier similar to the existing viaduct, including Bridge Concept 1 (Replication) and Bridge Concepts 4, 4A, and 5 (Extradosed Concrete Box Girder). The other two proposed concepts (Concepts 2 and 3) would not have a center pier. The USACE does not allow any construction work within the channel during the rainy season from October 15 through April 15; therefore, construction activities, including use of falsework, would be limited to the dry weather season
when the channel flow is very low. The minimum channel capacity conveyance would be preserved during construction, allowing the summer dry weather flow to pass through unobstructed. No impacts to flood flow due to construction activities are anticipated.

3.10.3.2 Permanent Impacts

**Alternative 1 – No Action**

No permanent impacts to hydrology and floodplains would occur under the No Action Alternative as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. Impacts to the storm drain system and floodplain would be the same as that described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**

**Storm Drain System**

The proposed Retrofit Alternative would not result in additional impervious area on and around the viaduct because the work would be confined within the existing viaduct footprint. Since the existing area around the viaduct has been built out, no net change in stormwater runoff would occur with implementation of the Retrofit Alternative. In addition, the Retrofit Alternative would not increase the volume of stormwater runoff discharging to the Los Angeles River; therefore, no impact to the river flow or floodplain would occur.

**Floodplain**

The Retrofit Alternative would not widen the main span of the viaduct; thus, there would be no extension to the center river pier. Since no retrofit would be constructed on the center pier, no change in the hydrology of the Los Angeles River would occur upstream or downstream of the 6th Street Viaduct. In addition, the Retrofit Alternative would not increase the volume of stormwater runoff discharging to the Los Angeles River; therefore, no impact to the river flow or floodplain would occur.

The project site is included on the FEMA Flood Insurance Rate Map. The Los Angeles River flood flows are confined within the levees. 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 Retrofit Alternative would not have a longitudinal encroachment in the Los Angeles River floodplain. The Retrofit Alternative would not create additional risk to the current flood flow within the Los Angeles River compared to the existing condition. The Retrofit Alternative would not impact natural and beneficial floodplain values within the project area. The proposed action would not support any incompatible floodplain development within the City.
Alternative 3 – Replacement

Storm Drain System

The proposed new viaduct structure would have a wider roadway and sidewalk cross section, resulting in intercepting a proportional increase in runoff on the viaduct deck. The new viaduct structure would be designed to adequately collect and route stormwater runoff on the viaduct to a stormwater treatment system prior to discharging to the river.

Since the area around the viaduct has been built out and most of the area is impervious, the proposed new wider viaduct would not result in a net increase of the imperviousness of the project area. With no net change in the amount of stormwater runoff expected, no impacts to the existing storm drain system capacity would occur.

Note that construction of the new wider viaduct would require the removal of several buildings adjacent to the viaduct. Removal of the buildings could result in more open space, most of which would be landscaped, thus reducing stormwater runoff flowing to the existing storm drain system. Therefore, no impacts to existing storm drain system capacity are anticipated.

Floodplains

Hydraulic Analysis

The 6th Street Viaduct currently restricts the flood flow and causes more than 10 ft of water surface backup upstream of the viaduct under the design flow conditions (see Figure 3.10-5, Existing Condition). The HEC-RAS model setup for the existing condition was further modified to reflect the proposed bridge configuration and dimensions. As mentioned earlier, four out of the proposed six bridge concepts would have the center pier similar to the existing viaduct (Bridge Concept 1 [Replication] and Bridge Concepts 4, 4A, and 5 [Extradosed Concrete Box Girder]).

HEC-RAS model runs under the design flow condition were performed to determine the impact of various bridge concepts to the river hydraulics. The results of river hydraulic analysis are summarized in Table 3.10-2. As shown in Table 3.10-2, only Bridge Concepts 1 and 4A would result in a net reduction of the riverbed area at the bridge, which would be by 0.041-acre and 0.001-acre, respectively. Based on the preliminary design of the proposed bridge concepts, the center pier would be wider than existing for Bridge Concept 1 and narrower for Bridge Concepts 4, 4A, and 5. Bridge Concepts 1, 4, and 4A would have a slight net longitudinal encroachment in the riverbed to accommodate the wider bridge deck.
Figure 3.10-5 Water Surface Profile near 6th Street Viaduct

Table 3.10-2
Results of River Hydraulic Analysis

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Pier Length and Width (ft x ft)</th>
<th>Pier Footprint Area (acres)</th>
<th>Change in Footprint Area (acres)</th>
<th>Upstream of Viaduct</th>
<th>Downstream of Viaduct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Surface Water Elevation (ft, MSL)</td>
<td>Change in Water Elevation (ft)</td>
</tr>
<tr>
<td>1 – No Action</td>
<td>100 x 21</td>
<td>0.048</td>
<td>0.000</td>
<td>252.8</td>
<td>0.0</td>
</tr>
<tr>
<td>2 – Retrofit</td>
<td>100 x 21</td>
<td>0.048</td>
<td>0.000</td>
<td>252.8</td>
<td>0.0</td>
</tr>
<tr>
<td>3 – Concept 1</td>
<td>155.8 x 25</td>
<td>0.089</td>
<td>0.041</td>
<td>263.4</td>
<td>10.6</td>
</tr>
<tr>
<td>3 – Concept 2</td>
<td>N/A</td>
<td>0.0</td>
<td>-0.048</td>
<td>234.9</td>
<td>-18.0</td>
</tr>
<tr>
<td>3 – Concept 3</td>
<td>N/A</td>
<td>0.0</td>
<td>-0.048</td>
<td>234.9</td>
<td>-18.0</td>
</tr>
<tr>
<td>3 – Concept 4</td>
<td>107.7 x 18</td>
<td>0.045</td>
<td>-0.004</td>
<td>251.3</td>
<td>-1.6</td>
</tr>
<tr>
<td>3 – Concept 4A</td>
<td>118.6 x 18</td>
<td>0.049</td>
<td>0.001</td>
<td>251.3</td>
<td>-1.6</td>
</tr>
<tr>
<td>3 – Concept 5</td>
<td>60.12 x 15</td>
<td>0.021</td>
<td>-0.028</td>
<td>234.9</td>
<td>-18.0</td>
</tr>
</tbody>
</table>

Impacts to the surface water of the Los Angeles River based on the modeling results are summarized below:

- Bridge Concept 1 would have river piers 4 ft wider than existing ones with the west and east piers shifting closer to the center river pier of approximately 12.5 ft and 25 ft, respectively. Under the design flow, this design would result in the water level immediately upstream of the bridge to rise by approximately 10.6 ft above the existing condition, and the water level downstream of the bridge to decrease by approximately 0.1-ft below the existing condition. This bridge concept would have a negative impact on the floodway. This impact cannot be mitigated without a major redesign of the piers, which would be inconsistent with the concept.

- Bridge Concepts 2 and 3 would not have a center river pier. The backwater of the bridge would be eliminated. The water level upstream and downstream of the bridge would be lowered by 18.0 ft and 6.7 ft, respectively. This bridge concept would have a positive impact on the floodway.

- Bridge Concepts 4 and 4A would have a narrower center pier width compared to existing pier. This would result in the water level immediately upstream and downstream of the bridge to decrease by approximately 1.6 ft and 0.1-ft below the existing condition, respectively. This bridge concept would have a positive impact on the floodway.

- Bridge Concept 5 would also have a narrower center pier width compared to the existing pier. This would result in the water level immediately upstream and downstream of the bridge to decrease by 18.0 ft and 5.4 ft, respectively. This bridge concept would have a positive impact on the floodway.

In conclusion, only Bridge Concept 1 would have a negative impact on the stretch of the Los Angeles River floodplain at the 6th Street Viaduct; the other concepts would have negligible or beneficial impacts.

**Risk Assessment**

The project site is included on the FEMA Flood Insurance Rate Map. The Los Angeles River flood flows are confined within the levees. The Los Angeles River is a major floodway. The remaining areas of the project site are located in Zone X, which are areas determined to be outside of the 500-year floodplain. Encroachment is defined by FEMA as “construction, placement of fill, or similar alternation of topography in the floodplain that reduces the area available to convey floodwaters,” and by FHWA as “an action within the base floodplain.” FEMA Section 60.3 (d)(3) states that communities shall prohibit encroachments, fill, new development, substantial improvements, and other development within the adopted regulatory
floodway unless it has been demonstrated through hydrologic and hydraulic analyses that the proposed encroachment would not result in any increase in flood levels within the community of the base flood (100-year) discharge.

Based on the results of hydraulic analysis, Bridge Concept 1 would result in a higher water level in the Los Angeles River upstream of the 6th Street Viaduct based on hydraulic analyses under the design flood flow, which is higher than the 100-year flood flow; therefore, it would increase the flood risk. For all other bridge concepts, either entailing reduced pier size or absence of the center pier and bents located near the river banks, would increase flood flow conveyance. The hydraulic modeling results indicate that the water surface elevations both upstream and downstream of the viaduct would be lowered compared to the existing condition under the design flood flow; therefore, the floodplain values of the Los Angeles River would benefit from the proposed project. These replacement alternatives would not impact natural and beneficial floodplain values within the project area. Finally, the proposed action would not support incompatible floodplain development within the City.

In addition to the above, the Replacement Alternative would not have a longitudinal encroachment in the Los Angeles River.

3.10.3.4 Indirect Impacts
No indirect impacts to hydrology and floodplains have been identified for Alternative 2 – Retrofit, Alternative 3 – Replacement, and Alternative 1 – No Action as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would have to seek some emergency funding source to replace it. The indirect impacts under this circumstance would be the same as the impacts described under Alternative 3 - Replacement.

3.10.4 Avoidance, Minimization, and Mitigation Measures
No mitigation is required for the No Build Alternative and Retrofit Alternative.

No mitigation is required for the No Build Alternative and the Retrofit Alternative as long as the viaduct remains in service. If the viaduct was determined unserviceable and was subject to replacement, all construction-related work in the riverbed would be performed during the dry season to avoid any potential impacts to the river hydraulics. Furthermore, construction site best management practices (BMPs) would be implemented to collect all construction-related nuisance water discharges. This measure is also applicable to Alternative 3 – Replacement.

❖ ❖ ❖
3.11 Water Quality and Stormwater Runoff

This section addresses potential impacts associated with water quality that could result from implementation of the proposed project. The information presented in this section is excerpted from the Hydrology/Hydraulics Report prepared for this project by a registered engineer.59

3.11.1 Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to 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 stormwater from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important CWA sections are:

- Sections 303 and 304 provide for 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 discharge (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 stormwater 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 the U.S. Environmental Protection Agency (EPA) Section 404 (b)(1) Guidelines (EPA CFR 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by 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 that 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 USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4.

**State Requirements: Porter-Cologne Water Quality Control Act (California Water Code)**

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 (i.e., liquid, solid, or otherwise) 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., like groundwater and surface waters not considered Waters of the U.S. Additionally, it prohibits discharges of “waste” as defined, and this definition 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, then the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (i.e., 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 stormwater dischargers, including Municipal Separate Storm Sewer Systems (MS4s). EPA defines an MS4 as any conveyance or system of conveyances (i.e., 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 stormwater, that are designed or used for collecting or conveying stormwater. The SWRCB has identified the Department (or Caltrans) as an owner/operator of an MS4 by the SWRCB. This permit covers all Department ROWs, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for 5 years, and permit requirements remain active until a new permit has been adopted.

The Department’s MS4 Permit, under revision at the time of this update, contains three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);
2. The Department must implement a year-round program in all parts of the State to effectively control stormwater and nonstormwater discharges; and
3. The Department stormwater 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, the Department developed the Statewide Storm Water Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing stormwater 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 the Department uses to reduce pollutants in stormwater and nonstormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures developed from the 2003 SWMP to address stormwater runoff or any subsequent SWMP version draft and approved.

Part of and appended to the SWMP is the Storm Water Data Report (SWDR) and its associated checklists. The SWDR documents the relevant stormwater 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.

Since the proposed project is a local assistance project, the City of Los Angeles is responsible for obtaining a NPDES permit. The proposed project lies within the City and County of Los Angeles and is regulated by the RWQCB Los Angeles Region. The RWQCB has adopted NPDES Permit No. CAS004001 Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within the County of Los Angeles, and the Incorporated Cities Therein (Order No. 01-182). The City of Los Angeles is a permittee under this general permit. In addition, the Los Angeles County Department of Public Works (LACDPW) administers a Standard Urban Stormwater Mitigation Plan (SUSMP). This plan requires that various BMPs be implemented in an effort to help remove unwanted pollutants and trash from entering the existing storm drain systems.

**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 stormwater discharges from construction
sites that result in a Disturbed Soil Area (DSA) of 1-acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least 1-acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than 1-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 (SWPPPs); 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 stormwater 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 SWPPP. In accordance with the Department’s Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than 1-acre.

The project is located within the jurisdictions of Caltrans’ and the County of Los Angeles. Notification of Construction (NOC) is required for the portion of the project within Caltrans’ jurisdiction, while Notice of Intent (NOI) is required for the portion of the project within the County of Los Angeles’ jurisdiction, as described below. Caltrans’ Statewide NPDES Permit requires Caltrans to submit an NOC to the RWQCB to obtain coverage under the Construction General Permit. Similarly, the County of Los Angeles NPDES Permit requires the City to submit an NOI to the RWQCB to obtain coverage under the Construction General Permit. Upon project completion, a Notification of Completion of Construction (NOCC) is required to suspend coverage. This process will continue to apply to Department projects until a new Caltrans Statewide NPDES Permit is adopted by the SWRCB. An NOC or equivalent form will be submitted to the RWQCB at least 30 days prior to construction if the associated DSA is 1-acre or more and an SWPPP is required. In accordance with the Caltrans’ Standard Specifications, a WPCP is used for projects with DSA less than 1-acre. During the construction phase, compliance with the permits and the Caltrans’ Standard Special Conditions requires appropriate selection and deployment of both structural and non-structural BMPs. These BMPs must achieve performance standards of Best Available Technology economically achievable/Best Conventional Pollutant Control Technology (BAT/BCT) to reduce or eliminate stormwater pollution.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

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.

Since the City of Los Angeles owns part of the 6th Street Viaduct, it will be responsible for obtaining all necessary permits, agreements, and approvals from resource and regulatory agencies prior to advertisement for construction; fully complying with the conditions of permits, achieving all performance standards, preparing all required reports, and providing a copy of each permit to the Caltrans District Local Assistance office for recording keeping purposes.

3.11.2  Affected Environment
The proposed project is located within the Los Angeles River Basin in hydrologic subarea 405.15. The basin covers an area of approximately 830 square miles. See the description of the affected environment in Section 3.10.2 above.

The proposed project lies within the City and County of Los Angeles and is regulated by the RWQCB Los Angeles Region. In addition, the Los Angeles County Department of Public Works (LACDPW) regulates a Standard Urban Stormwater Mitigation Plan (SUSMP). This plan requires that various best management practices (BMPs) be implemented in an effort to help remove unwanted pollutants and trash from entering the existing storm drain systems.

The 6th Street Viaduct is located in the Upper Los Angeles River Reach 3, which spans Arroyo Seco and Washington Boulevard. Existing designated beneficial uses for the Los Angeles River Reach 3, which are designated by the RWQCB, include Municipal and Domestic Supply, Industrial, Groundwater, Water Contact Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat, and Wildlife Habitat. Designated beneficial uses for groundwater in this hydrologic unit include Municipal and Domestic Supply, Agricultural Supply, Industrial Service, and Industrial Process Supply. Table 3.11-1 summarizes the pollutants of concern in this reach of
the Los Angeles River by source and their relative importance with regard to source control and treatment.

### Table 3.11-1

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Source</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia</td>
<td>Nonpoint/Point</td>
<td>High</td>
</tr>
<tr>
<td>High Coliform Count</td>
<td>Nonpoint/Point</td>
<td>High</td>
</tr>
<tr>
<td>Lead</td>
<td>Nonpoint/Point</td>
<td>High</td>
</tr>
<tr>
<td>Nutrients (Algae)</td>
<td>Nonpoint/Point</td>
<td>High</td>
</tr>
<tr>
<td>Odors</td>
<td>Nonpoint/Point</td>
<td>High</td>
</tr>
<tr>
<td>Oil</td>
<td>Nonpoint/Point</td>
<td>Low</td>
</tr>
<tr>
<td>Scum/Foam unnaturally</td>
<td>Nonpoint/Point</td>
<td>High</td>
</tr>
<tr>
<td>Trash</td>
<td>Nonpoint/Point</td>
<td>High</td>
</tr>
</tbody>
</table>


The RWQCB Los Angeles Region has set water quality objectives, which are presented in the Basin Plan for the Coastal Watersheds of Los Angeles County. Currently, water quality objectives for the Los Angeles River (between Figueroa Street and the Los Angeles River Estuary) are 1,500 milligrams per liter (mg/L) total dissolved solids (TDS), 150 mg/L chloride, 8 mg/L nitrogen, and 350 mg/L sulfate. Water quality objectives set forth for the Central Groundwater Basin are 700 mg/L TDS, 250 mg/L sulfate, 150 mg/L chloride, and 1 mg/L boron. This section of the Los Angeles River has been listed as an impaired water body for nitrate, pH, and scum in accordance with the most recently posted 303(d) list. Note that the project area is not within a "significant ecological area" as defined by the Los Angeles County Department of Regional Planning.

### 3.11.3 Environmental Consequences

#### 3.11.3.1 Construction Impacts

**Alternative 1 – No Action**

No construction impacts to water quality would occur under the No Action Alternative as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. The new viaduct would be designed to meet current standards similar to Alternative 3 – Replacement. Construction of the new viaduct would result in the same impacts described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**

The major pollutant expected from construction sites is erosion related, where sediment-laden water flows into storm drains. The proposed project covers an area of more than 1-acre; therefore, an NPDES Permit for stormwater discharges associated with construction activities
would have to be obtained. The City of Los Angeles will file the Permit Registration Documents (PRDs) with the Los Angeles RWQCB for coverage under the Construction General Permit (CGP). Since the project area is situated within both Caltrans’ ROW and local streets within the City of Los Angeles, it would gain coverage under Caltrans’ General NPDES Permit and the County of Los Angeles’ General NPDES Permit for stormwater discharge associated with construction activities, in which the City is one of the permittees. A SWPPP and Monitoring Program would be prepared and implemented prior to construction activities. The SWPPP would include erosion and sediment control; non-stormwater management; postconstruction stormwater management; waste management and disposal; maintenance, inspection, and repair of 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 structural and non-structural BMPs to minimize or eliminate the potential for spills and leakage of construction materials and erosion of disturbed areas by water and wind.

Table 3.11-2 lists various temporary BMPs that would be used to control stormwater runoff during demolition and construction periods prior to discharging to the surrounding storm drain system.

<table>
<thead>
<tr>
<th>Series Designation</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC-20...</td>
<td>Non-Stormwater Management</td>
</tr>
<tr>
<td>SC-30...</td>
<td>Vehicle and Equipment Management</td>
</tr>
<tr>
<td>SC-50</td>
<td>Over Water Activities</td>
</tr>
<tr>
<td>SC-60</td>
<td>General Stormwater Management</td>
</tr>
<tr>
<td>SC-70...</td>
<td>Municipal Field Program BMPs</td>
</tr>
</tbody>
</table>

Table 3.11-2 Proposed Temporary BMPs


Since the construction activities would occur over a waterway, special BMPs to minimize debris deposition into the river would be considered for implementation. These BMPs could include the following:

- Limit demolition and construction of the portions of the viaduct located over the river to the dry season (April to October).
- Employ non-shattering methods for demolition activities (e.g., wrecking balls would not be acceptable).
- Place platforms under/adjacent to the viaduct to collect debris.
- Provide watertight curbs or toe-boards on the viaduct to contain spills and prevent materials, tools, and debris from falling from the viaduct.
- Secure all materials on the viaduct to prevent discharges into the channel via wind.
• Use attachments on equipment, such as backhoes, to catch debris from small demolition operations.
• Stockpile accumulated debris and waste generated from demolition away from the channel.
• Isolate work areas within the channel from the river flow using sheet piling, k-rails, or other methods of isolation.
• Use drip pans during equipment operation, maintenance, cleaning, fueling, and storage for spill prevention. Place drip pans under all vehicles and equipment placed on the viaduct when expected to be idle for more than 1-hour.
• Keep equipment used in the channel leak-free.
• Direct water from concrete curing and finishing operations away from inlets and watercourses to collection areas for dewatering.
• Convey groundwater discharge from dewatering operations for pile installation into an acceptable sediment containment bin or basin. Test and treat the contained water prior to discharge as per requirements set forth by the RWQCB.

**Alternative 3 – Replacement**

Impacts to water quality pertaining to stormwater runoff under this alternative for any alignment and bridge concept would be similar to Alternative 2, but with a larger area of impact because of the large construction zone. Implementation of the temporary BMPs listed under Alternative 2 during the construction period would minimize water quality impacts from stormwater runoff.

**3.11.3.2 Permanent Impacts**

**Alternative 1 – No Action**

No permanent impacts to water quality would occur under the No Action Alternative as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. The new viaduct would be designed to meet current standards similar to Alternative 3 – Replacement. Impacts to water quality as a result of new viaduct construction would be the same as described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**

Under this alternative, there would be no change to the viaduct and its vicinity after the construction is completed. Since there would be no permanent treatment BMPs installed under this alternative, as under the No Action Alternative, all stormwater runoff from the viaduct would be directly discharged to the river without being treated at the BMP devices.

**Alternative 3 – Replacement**

The level of impacts to aquatic resources and water quality would be the same for any alignment alternative and bridge concept.
Pollutants generated from streets, highways, and freeways that could be contained in stormwater runoff and reach the surface water body include heavy metals from vehicle exhaust, organic compounds (including petroleum hydrocarbons and rubber), windblown sediments, trash and debris, and oil and grease. Since the new viaduct under each alignment alternative would be wider than the existing viaduct, it would capture a higher volume of runoff during the storm event. The new viaduct would be designed to capture all of the anticipated runoff for treatment at the permanent BMPs that would be installed within the vicinity of the viaduct prior to discharging to the Los Angeles River. Permanent treatment BMPs that have been conceptually evaluated for the project alternatives include detention basins and biofiltration swales. Additional BMP alternatives, using Caltrans-approved BMPs, will be evaluated during final design. The selected BMPs would then be sized and installed to meet Caltrans, County, and City of Los Angeles guidelines. With the BMPs in place, no adverse impacts to surface water quality because of stormwater runoff are anticipated.

Implementation of Alternative 3 would involve working in the Los Angeles River, which is a jurisdictional waterway of the USACE. Disturbance to the river would include pier removal for Bridge Concepts 2 and 3 and removal and reconstruction of the river pier for Bridge Concepts 4, 4A, and 5 (Extradosed Concrete Box Girder). Coordination with USACE has been initiated through the Section 6002 coordination under SAFETEA-LU (see Section 5.3.4 of this EIR/EIS). A Section 404 permit would be obtained during the final design phase. Permanent impacts to aquatic resources (i.e., the water column) are those caused by the fill associated with construction of the viaduct pier. As shown in Table 3.10-2, only Bridge Concept 1 would have a net substantial impact to the Los Angeles River waterway, and Concept 4A would have a minor impact. The Los Angeles River in this area is concrete-lined channel, so there would be no soft-bottom habitat impact. Because no natural terrain or native vegetation exists in this portion of the channel or in the immediate vicinity, the project site does not provide suitable habitat for any special-status plant or wildlife species. The project site also does not contain any federally designated critical habitat. Due to the extremely limited biological value of the concrete-lined waterway, the minimal amount of fill for a bridge pier is not expected to degrade any local species habitats or other biological resources. No mitigation would be required beyond the standard conditions that may be included in the State Water Quality Section 401 Certification or Section 404 permit to be issued by USACE. Further discussion regarding the biological resources within the project area is provided in Part III of this EIR/EIS.

**3.11.3.3 Indirect Impacts**

The estimated acreages of direct impacts to waters by the project alternatives are provided in Table 3.10-2. The only potential indirect impact to waters would be the increased shadow area.
underneath the viaduct; however, because no aquatic/wetlands vegetation exists under the viaduct, there would be no indirect impacts to aquatic resources from any of the alternatives.

In the event the viaduct was determined to be unserviceable under the No Action Alternative, the City would have to seek some emergency funding source to replace it. The indirect impacts under this circumstance would be the same as the impacts described under Alternative 3 - Replacement.

3.11.4 Avoidance, Minimization, and Mitigation Measures

Alternative 1 – No Action
No mitigation is required as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. The new viaduct would be designed to meet current standards similar to Alternative 3 – Replacement. With implementation of the SWPPP and respective BMPs required by current regulations to minimize stormwater pollution, as mentioned in Sections 3.11.3, no mitigation is required.

Alternative 2 – Retrofit
With implementation of the SWPPP and respective BMPs required by current regulations, as mentioned in Section 3.11.3, no additional mitigation is required.

Alternative 3 – Replacement
The CGP requires pollution control (minimization) efforts. With implementation of the SWPPP and respective BMPs required by current regulations to minimize stormwater pollution, as mentioned in Section 3.11.3, no mitigation is required.
3.12 Geology/Soils/Seismicity

This section discusses geology, soils, and seismic hazard concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The Caltrans’ Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. The Caltrans Seismic Design Criteria (2009) uses the next generation attenuation ground motion equations to determine probabilistic and deterministic ground motions.

The geologic and geotechnical conditions and subsequent conclusions presented in this section are based on the review of relevant geologic and geotechnical reports prepared for the site and the surrounding area, along with the geotechnical data collected and analyzed in the Final Project Report/Environmental Document Phase Foundation Report prepared for this project during the preliminary design phase.

3.12.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under CEQA.

3.12.2 Affected Environment

3.12.1.1 Regional Geology

The project site is located at the northern margin of the Los Angeles Basin. The basin, lying between the Transverse and Peninsular Ranges of southern California, is bound to the north by the Hollywood and Santa Monica Faults, to the east by the Puente Hills and Santa Ana Mountains, and to the southwest by the Pacific Ocean. The Los Angeles Basin is a northwest-trending structural depression filled with Tertiary and Cretaceous age sedimentary formations and capped with Pleistocene and Holocene age alluvium. Currently, the tectonic regime is one of regional crustal compression oriented in a north-northeast direction, as indicated by geological structure, earthquakes, and land and space geodetic surveys.

3.12.1.2 Site Geology

The project area is underlain by non-indurated Quaternary age alluvial deposits of silt, sand, and gravel. The regional geologic map by Dibblee (1989) designates two Surficial units at the site: (1) Qg – youngest alluvium, active stream channel deposits of gravel, sand, and silt (less than 1,000 years old); and (2) Qa – Holocene alluvium, unconsolidated floodplain deposits of silt, sand, and gravel (1,000 to 10,000 years old).

---

During geotechnical investigations for the proposed project, the depth of alluvium was found to vary from approximately 20 ft in the river channel to 80 ft at the west abutment. The alluvium is mostly sand with silt and is brown, olive-brown, and yellow-brown in color. Within the Qg unit, gravels are generally 1 to 2 inches in diameter with rare boulders in excess of 10 inches in diameter.

Underlying the alluvium are the marine upper Pico Member (Tfsc) and Repetto Member of the Pliocene-age Fernando Formation (Tfr) (Dibblee referred to this as the Wheelerian Stage of the Fernando Formation). The Pico Member is made of sand with silt and gravel and is brown, olive-brown, and yellow-brown in color. The Repetto Member is made of dense to hard, dark gray to blue-gray, moderately to poorly bedded, silt, clay, silt with sand, and fine- to medium-grained sand. The Pico and Repetto Members also contain trace shell fragments and pea gravel with a slight to strong hydrogen sulfide (rotten egg) odor.

Precise depth of the Fernando Formation at this location is unknown; however, based on information from nearby oil wells, the depth is believed to be approximately 3,000 ft. Total depth of tertiary sedimentary units at this location is approximately 10,000 ft. Cretaceous age crystalline bedrock underlies the sedimentary units.

3.12.1.3 Seismicity
The project site is located within a seismically active region. Several active faults that could produce significant shaking are located near the site. Surface rupture at the project site is not anticipated because the site is not located within an Alquist-Priolo Special Study Zone. Significant faults near the site include the Puente Hills Blind Thrust, Upper Elysian Park Blind Thrust, Newport Inglewood-Rose Canyon, Malibu Coast-Santa Monica-Hollywood-Raymond, Verdugo, Eagle Rock, and Whittier-Elsinore Faults, according to the Caltrans Seismic Hazard Map prepared by Caltrans in 2007.

Preliminary analyses using the 2009 Seismic Design Criteria (SDC) methods indicate that the controlling fault is the Puente Hills Blind Thrust Fault, which is approximately 2.1 miles from the project site and can generate a magnitude 7.3 earthquake on the Richter scale. A Richter magnitude 7.3 earthquake would cause a peak ground acceleration (PGA) of 0.72 g at the project site.

3.12.1.4 Groundwater Conditions
Several drillings at the project site were undertaken in the past. In 1931, during a City investigation, groundwater was encountered at a depth of 35 ft below ground surface (bgs)
(elevation 217.0 ft) west of the river near the West River Pier; at 15 ft bgs (elevation 211.0 ft) below the channel invert near the Center River Pier; and at 35 ft bgs (elevation 218 ft) east of the river near the East River Pier. The groundwater table was either not encountered or not recorded for the other borings performed.

During a City General Services investigation (1993), groundwater was encountered at a depth of 22 ft bgs (elevation 228.0 ft) east of the river near Bent 36; however, groundwater was not encountered in the other three borings performed on the east side of the river. The report concluded that a localized perched condition is likely to represent the groundwater conditions in the area.

During investigation by EMI in 2005, groundwater was encountered at a depth of 65.5 ft bgs (elevation 188.2 ft) west of the river near Bent 9; at 20.5 ft bgs (elevation 203.7 ft) below the channel invert near the Center River Pier; and between 53.5 and 56.3 ft bgs (elevation 196.0 and 197.1 ft) east of the river between Bents 16 and 34.

During the current investigation for the proposed project, groundwater was encountered at a depth of 62.0 ft bgs (elevation 189.0 ft mean sea level [msl]) between Bents 5 and 6; at 55.7 ft bgs (elevation 193.3 ft msl) at Bent 14; and at 61.2 ft bgs (elevation 188.8 ft msl) between Bents 20 and 21.

Based on the Seismic Hazard Zone Report 029 for the Los Angeles 7.5-Minute Quadrangle prepared by the California Division of Mines and Geology (CDMG) in 1998, the historically highest groundwater within the project site is approximately 120 ft bgs. According to the existing boring information, the groundwater table was encountered at much shallower depths; therefore, the groundwater level encountered within the channel during the City investigation (1931) (15 ft bgs or elevation 211.0 ft) was assumed to be the design groundwater depth.

Groundwater notably might fluctuate due to seasonal variation, nearby construction, irrigation, or numerous other man-made and natural influences.

### 3.12.1.5 Liquefaction Potential

Liquefaction is a seismic phenomenon in which loose, saturated, fine-grained granular soils behave like a fluid when subjected to high-intensity ground shaking. Liquefaction occurs when three general conditions exist: (1) shallow groundwater, (2) low-density sandy soils, and (3) high-intensity ground motion. Studies indicate that saturated, loose and medium-dense, near-surface cohesionless soils exhibit the highest liquefaction potential; while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential. Effects of

---

liquefaction on level ground include sand boils, settlement, and bearing capacity failures below structural foundations.

All previous geotechnical reports reviewed as part of the Foundation Report preparation stated that liquefaction potential at the bridge site is considered low due to the relatively deep groundwater table and dense to very dense granular soils encountered at the site; however, these reports all considered peak bedrock accelerations in the 0.4- to 0.7-g range, and most likely the groundwater table elevations that were encountered during the investigations (if any). Preliminary liquefaction analyses were performed using borings from the previous and current investigations, along with the revised seismic parameters and groundwater table elevation. Based on recent liquefaction analysis results for the proposed project, the subsurface soils indicated a low potential for liquefaction at the project location. This agrees with the CDMG *Seismic Hazard Zones Map of the Los Angeles Quadrangle*\(^6\). This map indicates that the project site is not located in an area where historical occurrence of liquefaction, or local geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacements such that mitigation would be required.

### 3.12.3 Environmental Consequences

#### 3.12.2.1 Construction Impacts

Construction activities for any project alternative would not induce geologic hazards pertaining to ground rupture or ground motion.

#### 3.12.2.2 Permanent Impacts

The project site is located within a seismically active area and is subject to ground rupture and ground shaking. Preliminary liquefaction analysis results for the subsurface soils indicate a low potential for liquefaction at the project location.

**Alternative 1 – No Action**

As long as the viaduct remains in service, there would be no impacts on geology, soils, and seismicity. The risk of the viaduct becoming unserviceable as a result of a seismic event (as discussed in Section 3.12.1.3) remains high.

**Alternative 2 – Retrofit**

Under this alternative, the existing viaduct would be retrofitted by steel casings and infill walls at various columns and bents that are moderately to severely damaged, as described in Section 2.4.2. With the retrofit alternative, there would be no impacts on geology, soils, and seismicity, however, the retrofit design would only be for the prevention of collapse under the

---

design seismic event, and the damaged viaduct would likely have to be replaced after a major earthquake.

The retrofit design life expectancy (i.e., the period of time that a bridge is expected to be in operation) to prevent seismic collapse is approximately 30 years. The actual life will depend on several factors, including exposed conditions of the structure to the environment, quality of materials, design and construction, and level of maintenance performed and the continuous deterioration of material due to ASR; therefore, the Retrofit Alternative would minimize the potential for collapse of the 6th Street Viaduct in a major earthquake.

**Alternative 3 – Replacement**

Under this alternative, the existing viaduct would be replaced by a new structure that would be designed to meet Caltrans seismic design criteria. Implementation of this alternative would minimize the potential to collapse and would likely have repairable damage under the design seismic event for approximately 75 years. The replacement alternative would not have impacts on geology, soils, and seismicity. The level of impacts pertaining to geology/soils/seismicity would be the same for any bridge concept or alignment alternative.

**3.12.2.3 Indirect Impacts**

No indirect impacts were identified.

**3.12.4 Avoidance, Minimization, and Mitigation Measures**

**Alternative 1 – No Action**

The 6th Street Viaduct is subject to collapse in a major earthquake. The City and Caltrans would continue inspection and maintenance of the viaduct until it is determined unusable due to advanced ASR deterioration. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. No mitigation measures would be required.

**Alternative 2 – Retrofit**

The City and Caltrans would continue inspection and maintenance of the viaduct until it is determined unusable due to advanced ASR deterioration. The expected life of this alternative is 30 years and would likely require action in the future for replacement. No mitigation measures would be required.

**Alternative 3 – Replacement**

In general, the viaduct would be designed to meet current Caltrans seismic design criteria. Once the viaduct is open for public use, the City and Caltrans would perform regular inspection and maintenance per the standard requirements. No mitigation measures would be required.
3.13 Paleontology

This section presents an overview of the efforts conducted to identify and evaluate the potential for impacts caused by the proposed project on significant paleontological resources. The information presented in this section is excerpted from the Paleontological Identification Report conducted for this project.

3.13.1 Regulatory Setting

Paleontology is the study of fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects. (e.g., Antiquities Act of 1906 [16 U.S.C. 431-433], Federal-Aid Highway Act of 1960 [23 U.S.C. 305]), and the Omnibus Public Land Management Act of 2009 [16 U.S.C. 470aaa]). Under California law, paleontological resources are protected by CEQA.

3.13.2 Affected Environment

3.13.2.1 Paleontological APE

The paleontological study area includes all locations that would be subjected to subsurface ground disturbance under both build alternatives of the proposed project. The paleontological study area is the same as the project construction area. The areas near the existing viaduct footings are those subject to extensive ground disturbance. Other areas within the paleontological study area, including building demolition, would be subject to shallow subsurface disturbance.

3.13.2.2 Research Methods

The following tasks were conducted to compile stratigraphic and paleontologic resource inventories of the 6th Street Viaduct study area by rock unit:

- Reviewed surficial geologic maps covering the study area and vicinity to determine the underlying fossil-bearing rock units and their respective areal distribution therein.
- Conducted an archival search at the Natural History Museum of Los Angeles County, Vertebrate Paleontology Department, to document the occurrence of any previously recorded fossil site and the types of fossil remains from each of these rock units in and near the study area.
- Reviewed published and unpublished geologic paleontologic literature for additional information on these and other fossil sites from the same rock units in and near the study area.

No field survey was conducted because the study area is fully developed.

### 3.13.2.3 Findings

While no paleontological sites have been found in the study area, paleontological sites have been found nearby. The older alluvium has yielded fossilized bones and teeth at many fossil sites in the Downtown Los Angeles vicinity. Because of these fossil occurrences, the older alluvium is classified as being of high importance because of its demonstrated high potential for containing scientifically important fossil remains that might be exposed by earth-moving activities (see Figure 3.13-1 for the location of older and younger alluvium within the project area.)

The younger alluvium has also yielded fossilized bones and teeth at many fossil sites in Downtown Los Angeles and its immediate vicinity. Several remains have been found at sites within a 1.6-mile radius of the study area. Mammoth remains have been found as shallow as 8 ft below previous grade. Holocene plant remains more than 5,000 years in age were encountered at depths as shallow as 20 ft below previous grade. Horse remains have been found at a depth of 43 ft below previous grade. Because of these fossil occurrences, the younger alluvium is classified as being of high importance at depths greater than approximately 5 ft below current grade because of its demonstrated high potential for containing scientifically important fossil remains that might be exposed by earth-moving activities. The younger alluvium is classified as being of low importance at depths less than 5 ft below current grade. Accordingly, any remains found at such shallow depths would likely be too young to be considered fossilized or scientifically important.

### 3.13.3 Environmental Consequences

**Alternative 1 – No Action**

No impacts to paleontological resources would occur under this alternative.

**Alternative 2 – Retrofit**

Excavation and other earth-moving activities associated with retrofit construction might result in the loss of paleontological resources. These losses might include (1) an undetermined number of unrecorded fossil sites in the older alluvium and, at depths greater than 5 ft below current grade, the younger alluvium; (2) scientifically important fossil remains; (3) associated fossil specimen data and corresponding geologic and geographic site data; and (4) the fossil-bearing strata.
Alternative 3 – Replacement
Impacts to paleontological resources would be the same as for Alternative 2, but at a larger extent. The level of impacts to paleontological resources would be the same for any bridge concept or alignment alternative.

3.13.4 Avoidance, Minimization, and Mitigation Measures
Implementation of the following mitigation measures would minimize potential impacts to paleontological resources during earth-moving activities.
A qualified Principle Paleoontologist would be retained prior to the start of construction to develop and implement a Paleontological Monitoring 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 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.

A Paleontological Monitor would be onsite on a full-time basis to inspect new exposures created by earth-moving activities in areas underlain by the older alluvium (area east of US 101) and at depths greater than 5 ft below current grade for the younger alluvium.

If fossil remains are discovered, then earth-moving activities at the fossil site would be halted or diverted temporarily to allow the monitor to recover the fossil remains.
3.14 Hazardous Waste/Materials

Hazardous materials are generally substances that, by their nature and reactivity, have the capacity for causing harm or health hazards during normal exposure or an accidental release or mishap. They are characterized as being toxic, corrosive, flammable, reactive, an irritant, or a strong sensitizer. The term “hazardous substances” encompasses chemicals regulated by both U.S. Department of Transportation (DOT) “hazardous materials” regulations and the U.S. Environmental Protection Agency’s (EPA) “hazardous waste” regulations, including emergency response. Hazardous wastes require special handling and disposal because of their potential to damage public health and the environment.

This subsection discusses potential human health hazards due to exposure to existing and possible future sources of hazardous materials and wastes because of project construction and operation.

3.14.1 Regulatory Setting

Hazardous materials and hazardous wastes 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. The RCRA provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include:

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

In addition to the laws 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.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Hazardous waste in California is regulated primarily under the authority of the federal RCRA 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.

3.14.2  Affected Environment
An Initial Site Assessment (ISA) covering the project study area was prepared in October 2005, and selected sites were reassessed in February 2007 (approved 2008), and validated in February 2011.65 The ISA was prepared in accordance with American Society for Testing and Materials (ASTM) E-1527-00 guidelines and Caltrans Project Development Procedures Manual. The scope of the ISA included site reconnaissance; historical research related to use, storage, disposal, or release of hazardous materials or petroleum hydrocarbons; review of environmental databases; and report of findings.

Following the Phase I study, a site investigation covering the proposed project alignment (except for Alignment 3B) was conducted in early 2008 and updated in February 2011.66 A summary of findings is presented below.

3.14.2.1  Review of TrackInfo Services Environmental FirstSearch (EFS) Report
There are 183 sites within ASTM 1527-00 Standard search distances from the project site that have been identified in the environmental databases. These results are summarized in Table 3.14-1. Several facilities are listed in multiple databases. Only one Recognized Environmental Condition (REC) was identified for the project. REC means “the presence or likely presence of hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.”

---

Table 3.14-1
Summary of Environmental Database Search Results

<table>
<thead>
<tr>
<th>Database</th>
<th>Search Radius</th>
<th>Onsite</th>
<th>Within 1/8-Mile</th>
<th>Within 1/4-Mile</th>
<th>Within 1/2-Mile</th>
<th>Greater than 1/2-Mile</th>
<th>Not Mapped</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPL</td>
<td>1.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CERCLIS</td>
<td>0.50</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NFRAP</td>
<td>0.12</td>
<td>0</td>
<td>1</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>RCRA TSD</td>
<td>0.50</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RCRA COR</td>
<td>1.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>RCRA GEN</td>
<td>0.25</td>
<td>2</td>
<td>13</td>
<td>10</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>RCRA NLR</td>
<td>0.12</td>
<td>0</td>
<td>4</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>ERNS</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>NPDES</td>
<td>0.25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FINDS</td>
<td>0.25</td>
<td>1</td>
<td>24</td>
<td>12</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>TRIS</td>
<td>0.25</td>
<td>0</td>
<td>6</td>
<td>2</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>State Sites</td>
<td>1.00</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Spills – 1990</td>
<td>0.12</td>
<td>0</td>
<td>1</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>SWL</td>
<td>0.50</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>--</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Permits</td>
<td>0.25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0.25</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>REG UST/AST</td>
<td>0.25</td>
<td>0</td>
<td>30</td>
<td>30</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>Leaking UST</td>
<td>0.50</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>--</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Nuclear Permits</td>
<td>0.50</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Federal Wells</td>
<td>0.50</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HMIRS</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>NCDB</td>
<td>0.25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PADS</td>
<td>0.25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Soils</td>
<td>0.25</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>FIMAP</td>
<td>0.50</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>--</td>
<td>13</td>
<td>83</td>
<td>59</td>
<td>14</td>
<td>6</td>
<td>8</td>
<td>183</td>
</tr>
</tbody>
</table>

ERNS: Emergency Response and Notification System
FIMAP: Fire Insurance Map
FINDS: Facility Index System
HMIRS: Hazardous Material Incident Report System
NCDB: National Compliance Database System
NFRAP: No Further Remedial Action Planned
NPDES: National Pollutant Discharge Elimination System
NPL: National Priorities List
PADS: Polychlorinated Biphenyls Activity Data System
RCRA COR: Resource Conservation and Recovery Corrective Action Site
RCRA GEN: Resource Conservation and Recovery Generators
RCRA NLR: Resource Conservation and Recovery Sites
RCRA TSD: Resource Conservation and Recovery Treatment, Disposal, and Storage Site
REG UST/AST: Registered Underground Storage Tank/Aboveground Storage Tank
SWL: solid waste landfill
TRIS: Toxics Release Inventory System
UST: underground storage tank

The REC for the project is the BASF Corporation/Sun Chemical facility, located at 590 S. Santa Fe Avenue, Los Angeles, California, 90013, immediately north of the intersection of the 6th Street Viaduct and Santa Fe Avenue on the west side of the Los Angeles River (see Figure 3.14-1). This facility was identified in 6 different databases. This site consists of 2 land parcels totaling approximately 2.68 acres of land. Historically, the site has been used for chemical or paint manufacturing. The site was formerly under the oversight of the California RWQCB. The California RWQCB has overseen the site investigation and remediation since approximately 1986. Previous sampling activities have confirmed soil and groundwater contamination. Contaminants of concern identified in the groundwater and soil include benzene, 1,1-dichlorethane, 1,1-dichloethene, 4-methyl-2-pentanone (MIBK), toluene, and total xylene. The toluene and xylene appear to be primarily located within the groundwater beneath the northern portion of the site, whereas the MIBK has been identified in the groundwater along the southwest corner of the site and may extend beyond the site boundary.

3.14.2.2 Review of Sanborn Maps
A search of Sanborn® fire insurance maps was conducted for the project site as part of the ISA. Coverage was found for the following years: 1906, 1921, 1949, 1950, 1953, 1954, 1959, 1960, 1967, and 1970. A total of 21 maps were identified for the project area; however, only 17 maps included applicable data.

In 1906, the property on the east side of the Los Angeles River was primarily used for lumber storage. Almost half of the property on the west side of the Los Angeles River was unoccupied.
A church, a soap company, and other small manufacturing companies were identified on the west side of the Los Angeles River.

In 1921, on the east side of the Los Angeles River, a concrete pipe company and a machine shop were located adjacent to the north of the project property. Farther north of the project site, a locomotive repair facility was operational. Within the project site, a junkyard; lumber company; two small manufacturing companies; and belting, packing, and hose manufacturer were identified.

In 1949, the entire project site area on the east side of the Los Angeles River was occupied by manufacturing businesses including, but not limited to, cabinetry, food supplies, wood truss, furniture and upholstery, gypsum tile manufacturing, steel fence, laundry supplies, paint, rubber goods, and paper products.

In 1950, on the west side of the Los Angeles River, a larger portion of the project site was being used as machinery storage yards. A large bakery was identified. A few small manufacturing businesses, sandblasting areas, and auto garages were identified.

From 1950 until 1960, few changes were observed on the west side of the Los Angeles River from the 1959 map. One bakery was replaced by a metal fabricating company, and a new sheet metal shop was identified.

By 1967, the biscuit company building was converted to a parking lot; otherwise, the area remained primarily manufacturing businesses.

In 1970, on the east side of the Los Angeles River, wood truss and post companies were identified within the project area. Several other manufacturing businesses were also identified, including the large K-C Products Company and California Stuffed Toys & Cal-Fiber Company. A large refrigerating company is located at the corner of Myers Street and Jesse Street. The rest of the businesses identified were primarily small manufacturing businesses and food products businesses. On the west side of the Los Angeles River, most of the businesses were the same as they were in 1967. The area continues to be largely manufacturing businesses.

3.14.2.3 Site Reconnaissance
Site reconnaissance was conducted as part of the ISA preparation. Based on available information, hazardous substances are expected to have been used at the project site. During the site reconnaissance, obvious indications of hazardous substances were observed in the project site. Hazardous substance containers or unidentified substance containers were observed in the area underneath the 6th Street Viaduct. Several facilities within the survey area have hazard placards.
located on the buildings. Chemicals with serious and severe health hazards are present at these facilities. Access to these sites is restricted.

Based on available information, equipment and materials possibly containing polychlorinated biphenyls (PCBs) are suspected to have been used at the subject site. During the site reconnaissance, several power line poles were observed to have transformers. Several transformers have not been tested for PCBs; therefore, these transformers must be considered to contain PCBs until tests prove otherwise. No other equipment or materials possibly containing PCBs were observed.

Based on available information, asbestos-containing materials (ACMs) are expected to have been used at the subject site. A review of the historical aerial photographs indicates that several of the buildings within the survey area were built prior to 1928. As a result, ACMs are likely to be present in materials in the buildings; therefore, there is the potential for residual ACMs to be present in and around this site. No other instances of ACMs were observed in the project site.

During the site reconnaissance, several instances of solid waste were observed at the site. Shopping carts, mattresses, blankets, and other materials associated with homeless persons were observed under the viaduct and in the adjacent streets and alleyways. Evidence of dumping was observed inside the fenced area of the property located at the corner of Palmetto Street and Santa Fe Avenue. Based on available information, no portion of the project site is or was designated as a solid waste disposal site.

During the site reconnaissance and after a review of the historical aerial photographs, several of the buildings within the survey area appear to be built prior to 1928; therefore, there is a high probability of lead-based paint (LBP) in the buildings. As a result, there is the potential for residual LBP to be present in and around this site. Aerially deposited lead (ADL) is common in the immediate vicinity of freeways and highways. Since the project site is adjacent to US 101 and two Interstates (I-5 and I-10), the probability of ADL on the project site is high.

### 3.14.2.4 Site Investigation

Based on the findings of the ISA, a preliminary site investigation was conducted in 2008\(^7\) to identify the potential impacts associated with hazardous waste and materials. A detailed site investigation will be conducted at the final engineering design phase. The preliminary site investigation consisted of collecting soil samples from 10 locations and groundwater samples from 4 locations along the proposed alignment under study, as summarized in Table 3.14-2 (see Figure 3.14-2). The soil samples were collected mostly from depths ranging from approximately

---

5 ft to a maximum of 70 ft below ground surface (bgs). Samples were analyzed for California Code of Regulations (CCR) Title 22 metals, total petroleum hydrocarbon (TPH) as gasoline and diesel, pH, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). The detailed sample collection locations and analytical results can be found in the Site Investigation Report.

**Table 3.14-2**

<table>
<thead>
<tr>
<th>Borehole ID No.</th>
<th>Borehole Location</th>
<th>Sampling Depths (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-01</td>
<td>Southwest corner of 6&lt;sup&gt;th&lt;/sup&gt; Street Viaduct and Mateo Street</td>
<td>5,10,15</td>
</tr>
<tr>
<td>B-02</td>
<td>Southwest corner of 6&lt;sup&gt;th&lt;/sup&gt; Street Viaduct and Mateo Street</td>
<td>5,10,15</td>
</tr>
<tr>
<td>B-03</td>
<td>Northwest of 6&lt;sup&gt;th&lt;/sup&gt; Street Viaduct between Mateo Street and Santa Fe Avenue</td>
<td>5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70</td>
</tr>
<tr>
<td>B-04</td>
<td>Southwest of 6&lt;sup&gt;th&lt;/sup&gt; Street Viaduct between Imperial Street and Santa Fe Avenue</td>
<td>5,10,15</td>
</tr>
<tr>
<td>B-05</td>
<td>Northwest of 6&lt;sup&gt;th&lt;/sup&gt; Street Viaduct between Santa Fe Avenue and Mesquit Street</td>
<td>5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60</td>
</tr>
<tr>
<td>B-06</td>
<td>East of Mesquit Street and west of Metrolink underneath 6&lt;sup&gt;th&lt;/sup&gt; Street Viaduct</td>
<td>5,10,15</td>
</tr>
<tr>
<td>B-07</td>
<td>East of Los Angeles River and west of Mission Road</td>
<td>5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55</td>
</tr>
<tr>
<td>B-08</td>
<td>East of Mission Road and underneath 6&lt;sup&gt;th&lt;/sup&gt; Street Viaduct</td>
<td>5,10,15</td>
</tr>
<tr>
<td>B-09</td>
<td>East of Mission Road and west of Anderson Street</td>
<td>5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55</td>
</tr>
<tr>
<td>B-11</td>
<td>Southeast corner of 6&lt;sup&gt;th&lt;/sup&gt; Street Viaduct east of Boyle Avenue</td>
<td>5,10,15</td>
</tr>
</tbody>
</table>


The results of the laboratory analysis of soil and groundwater samples are summarized below.

- **Metals**: Low levels of metals were found in all 74 soil samples analyzed. Only one soil sample (B-02-5) had total lead concentrations that exceeded the total threshold limit concentration (TTLC) criteria. Deeper samples at the same location all reported low lead concentrations that were below the TTLC criteria. It appears that the soil sample where such a high lead concentration was encountered is an isolated case. The same soil sample also reported exceedance for lead and arsenic above the industrial preliminary remediation goal (PRG) criteria. None of the remaining detected metal concentrations were above any of the screening criteria.

---

68 Ibid.
Figure 3.14-2  Sampling Locations
Low levels of metals were also detected in all five groundwater samples analyzed. The detected concentrations for most of the metals (i.e., arsenic, cadmium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) exceeded the National Pollutant Discharge Elimination System (NPDES) permit requirements.

- **TPH-gas:** Low levels of TPH-gas (0.65-milligram per kilogram [mg/kg] to 8.3 mg/kg) were detected in 5 out of 74 soil samples analyzed. Low to high concentrations of TPH-diesel (7.5 mg/kg to 14,000 mg/kg at 5 ft bgs) were detected in 20 samples.

TPH-gas and diesel were detected in only one (B-05-GW-1) out of five groundwater samples analyzed at concentrations of 7,100 micrograms per liter (μg/L) and 4,900 μg/L, respectively.

- **TPH-diesel:** Seventy-four (74) soil samples were analyzed for TPH-diesel. Concentrations of detected TPH-diesel oil ranged from 7.5 mg/kg in sample B-31-10 (duplicate of B-11-10) to 14,000 mg/kg in sample B-06-5. Most of the detected concentrations were at the 5-ft-depth samples.

Only one out of five groundwater samples analyzed for TPH-diesel was reported to have concentrations above the laboratory reporting limit. TPH-diesel was detected in B-05-GW-1 at a concentration of 4,900 μg/L.

- **VOCs:** Low VOC analytes were detected in 7 out of 74 soil samples analyzed for VOCs. None of the detected concentrations exceeded any screening criteria.

Only three out of five groundwater samples (B-04-GW-1, B-05-GW-1, and B-08-GW-1) analyzed for VOCs were reported to have detectable concentrations of VOCs. The concentration of the VOC 1,1-dichloroethane exceeded the NPDES permit requirement in both samples where it was detected (B-04-GW-1 and B-05-GW-1).

- **SVOCs:** No SVOCs were detected in any of the 74 soil and 5 groundwater samples collected at the site.

### 3.14.3 Environmental Consequences

#### 3.14.3.1 Construction Impacts

**Alternative – No Action**

There would be no construction impacts associated with hazardous wastes/materials under the No Action Alternative as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. Impacts pertaining to hazardous materials and waste from demolition of the old viaduct and
construction of the new viaduct would be the same as described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**

**Hazardous Waste Facilities**

Based on the review of the environmental databases, site reconnaissance, and historical research, there are a number of hazardous waste sites within the required search distances of the proposed project limits (see Table 3.14-1). Based on the nature and status of the listings, most of these sites are not considered recognized environmental conditions for the proposed project.

The BASF Corporation/Sun Chemical facility, which is located at 500 S. Santa Fe Avenue, Los Angeles, California, 90013, is considered an REC for the proposed project that could cause groundwater contamination within the proposed project area. Results of the Site Investigation revealed potential metal, TPH-diesel, and VOC contamination in a few samples of soil and groundwater at the project site. Soil and groundwater analysis would be required prior to any soil disposal and groundwater dewatering activities to ensure proper handling and disposal of contaminated soil and groundwater. Costs associated with contaminated soil and groundwater remediation and disposal are estimated at $6 million.

**Aerially Deposited Lead**

Construction of Alternative 2 could involve limited excavation of exposed surface soil adjacent to paved areas within the project limits. Since most of the retrofitted area would be confined only within the existing viaduct footprint, which is totally paved, ADL-contaminated soil is not likely to occur; therefore, ADL testing would not be required.

**Asbestos-Containing Materials and Lead-Based Paint Coatings**

An ACM and LBP survey was conducted at various locations on the 6th Street Viaduct.\(^6\) Both ACM and LBP were found on the viaduct and at the Maintenance Facility, located underneath the viaduct. Impacts from demolition of the viaduct and the existing buildings under the viaduct could present a health hazard to workers. Specifications for the removal of asbestos, suspected metals coated with LBP, and other hazardous substances would be included in the project construction documents. Costs associated with ACM and LBP removal and disposal for Alternative 2 implementation are estimated at $0.4 million.

**Alternative 3 – Replacement**

The level of impacts pertaining to hazardous materials and wastes would be the same for any alignment alternative and bridge concept. Implementation of Alignment 3B would require more

demolition work than Alignments 3A and 3C, causing slightly higher costs of hazardous material handling and disposal.

**Hazardous Waste Facilities**

As mentioned in the above section, results of the Site Investigation revealed potential metal, TPH-diesel, and VOC contamination in portions of soil and groundwater at the project site. Soil and groundwater analysis would be required prior to any soil disposal and groundwater dewatering activities to ensure proper handling and disposal of contaminated soil and groundwater. Costs associated with contaminated soil and groundwater remediation and disposal for any alignment under Alternative 3 are estimated at $2.7 million.

**Aerially Deposited Lead**

Construction of Alternative 3 would cover the area near US 101, which contains exposed soil. Soils in this area may contain ADL generated by motor vehicle exhaust; hence, it would be tested for ADL according to applicable standard hazardous material testing guidelines prior to commencement of the construction activities. In addition to testing for the presence of ADL, the contractor would be required to manage all excavated soils in accordance with all pertinent laws and regulations. Costs associated with ADL sampling and disposal for any alignment under Alternative 3 are included under the cost for contaminated soils and groundwater remediation above.

**ACM and LBP Coatings**

An ACM and LBP Survey was conducted at various locations on the 6th Street Viaduct. Both ACM and LBP were found on the viaduct and at the Maintenance Facility, located underneath the viaduct. Impacts from demolition of the viaduct and the existing buildings under the viaduct and nearby vicinity could present a health hazard to workers. Specifications for the removal of asbestos, suspected metals coated with LBP, and other hazardous substances would be included in the project construction documents to minimize this impact. Costs associated with ACM and LBP removal and disposal for any alignment under Alternative 3 are estimated at $0.8 million.

**3.14.3.2 Permanent Impacts**

**Alternative 1 – No Action**

There would be no permanent impacts associated with hazardous wastes/materials under the No Action Alternative. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. Once construction is complete, there would be no permanent impacts associated with hazardous materials and wastes as a result of the implementation of any bridge concept or alignment alternative.
Alternative 2 – Retrofit
Once construction is complete, there would be no permanent impacts associated with hazardous materials and wastes as a result of the implementation of Alternative 2.

Alternative 3 – Replacement
Once construction is complete, there would be no permanent impacts associated with hazardous materials and wastes as a result of the implementation of any bridge concept or alignment alternative.

3.14.3.3 Indirect Impacts
During demolition of buildings or viaduct components under Alternative 2 – Retrofit and Alternative 3 – Replacement, workers and area residents could be exposed to some hazardous materials and waste. The impacts associated with exposure of workers and residents are considered to be low during the demolition of the structure, provided the minimization measures are implemented as described in Section 3.14.4.

Under the No Action Alternative, in the event the viaduct was determined to be unserviceable, the City would have to seek some emergency funding source to replace it. The indirect impacts pertaining to hazardous materials and wastes under this circumstance would be the same as described under Alternative 3 – Replacement.

3.14.4 Avoidance, Minimization, and Mitigation Measures

Alternative 1 – No Action
No mitigation is required as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. Measures to minimize impacts associated with hazardous materials and waste would be the same as Alternatives 2 and 3.

Alternative 2 – Retrofit
Impacts related to hazardous wastes/materials during demolition and construction of the project would be minimized by implementation of the following measures.

- Conduct soil profiling 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 would be required to adhere to City Standard Specifications (known as the Greenbook), which address the management of various hazardous materials and wastes consistent with the federal and state of California requirements pertaining to hazardous materials and wastes management.
• Include current regulatory requirements for the removal of asbestos, suspected metals coated with LBP, and other hazardous substances according to the construction specifications.
• Obtain an NPDES permit for wastewater discharge if there is a potential for dewatering activities at the project site during construction.
• Dispose of any hazardous materials or wastes encountered before or during the demolition stage of the project according to current regulatory guidelines.

**Alternative 3 – Replacement**

In addition to the measures outlined under Alternative 2, soils within the project site near US 101 shall be tested for ADL prior to any excavation activities. If the soil contains ADL concentrations exceeding the current regulatory requirements, then the contractor must handle and dispose of the contaminated soil in accordance with the regulatory requirements.
3.15 Air Quality

This section addresses the potential impacts to regional and local air quality associated with implementation of the proposed project. Air quality impacts were evaluated for short-term construction emissions and long-term operational emissions of the proposed project. Detailed analytical methodology and data input and output information can be found in the Air Quality Technical Report\textsuperscript{70} prepared for this project.

The 6\textsuperscript{th} Street Viaduct is located in Los Angeles, within the South Coast Air Basin (SCAB or Basin), which is an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. The SCAB includes all of Orange County; Los Angeles County, with the exception of the Antelope Valley; and the non-desert portions of Riverside and San Bernardino counties. Its terrain and geographical location determine the distinctive climate of the Basin, as the Basin is a coastal plain with connecting broad valleys and low hills. Elevations range from sea level to more than 11,000 ft above msl. The South Coast Air Quality Management District (SCAQMD) has jurisdiction over air quality issues within the SCAB. While the SCAB has some of the most unhealthy air quality in the nation, air quality within the basin continues to show improvement.

Many statutes, regulations, plans, and policies have been adopted that address air quality issues. The project site and vicinity are subject to air quality regulations developed and implemented at the federal, state, and local levels. Plans, policies, and regulations that are relevant to the proposed project are discussed in the following sections.

3.15.1 Regulatory Setting

The federal Clean Air Act (FCAA or CAA), as amended in 1990, is the federal law that governs air quality. The California Clean Air Act (CCAA) of 1988 is its companion state law. These laws and related regulations by the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (ARB or CARB), 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 criteria pollutants that have been linked to potential health concerns. The criteria pollutants are carbon monoxide (CO), nitrogen dioxide (NO\textsubscript{2}), ozone (O\textsubscript{3}), particulate matters (PM, broken down for regulatory purposes into particulates of 10 micrometers or smaller diameters – PM\textsubscript{10} and particulates of 2.5 micrometers or smaller diameters – PM\textsubscript{2.5}), lead (Pb), and sulfur dioxide (SO\textsubscript{2}). In addition, State standards exist for visibility reducing particles, sulfates, hydrogen

Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

sulfide (H$_2$S), and vinyl chloride. 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 NEPA and 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 a State Implementation Plan (SIP) for achieving the goals of the CAA requirements related to NAAQS. “Transportation Conformity Act” 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. 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 CO, NO$_2$, O$_3$, PM (PM$_{10}$ and PM$_{2.5}$), and in some areas SO$_2$. California has nonattainment or maintenance areas for all of these transportation-related criteria pollutants except SO$_2$, and also has a nonattainment area for Pb. 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 implementation of those projects would conform to emission budgets or other tests showing that requirements of the CAA and the SIP are met. If the conformity analysis is successful, then the regional planning organization, such as the Southern California Association of Governments (SCAG), which is the federally designated Metropolitan Planning Organization (MPO) responsible for transportation planning in the SCAB, FHWA, and Federal Transit Authority (FTA) make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the CAA. 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 CO and/or PM. A region is a “nonattainment” area if one or more monitoring
stations in the region measure violations of the relevant standard and EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently met the standard may be officially redesignated to attainment by EPA and are then called “maintenance” areas. “Hot spot” analysis is essentially the same, for technical purposes, as CO or PM 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 PM violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

### 3.15.2 Affected Environment

An air quality analysis was performed for the proposed project Alternative 3 to represent the worst-case scenario. Detailed methodologies, input and output data, and analytical results were presented in the *Air Quality Technical Report for 6th Street Viaduct Seismic Improvement Project*, which was reviewed and concurred by Caltrans’ technical specialist in December 2008. The technical report was revised in March 2011 to update the information as a result of the change in construction years from 2011-2014 to 2014-2017, with 2018 as the opening year. Based on the results of the updated traffic study in February 2011, no significant change in traffic forecast volumes between the former opening year and the new opening year and between the former design year (2035) and the new design year (2038) would occur; therefore, the same traffic volumes were used in the Air Quality Technical Report update.

#### 3.15.2.1 Climate/Meteorology

The project site is located in the City of Los Angeles within the SCAB. The southern California region lies in a semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. Warm, dry summers, low precipitation, and mild winters characterize the overall climate in the SCAB. In the project area, the average daily winter temperature is 56 degrees Fahrenheit (°F) (13.3 degrees Celsius [°C]), and the average daily summer temperature is 74 °F (23.3 °C). More than two-thirds of the annual rainfall occurs from December through March, with 93 percent occurring between November and April. The mean annual precipitation in the Los Angeles Civic Center area over a 96-year period (1914-2010) was 14.8 inches. In nearly all months of the year, evaporation exceeds precipitation.

Topography is a major factor influencing wind direction over the project area. The predominant easterly daily winds in the Central Los Angeles area have an average speed ranging between 5.3 and 7 miles per hour (mph). There is little seasonal variability in this pattern. Occasionally during autumn and winter, “Santa Ana” conditions develop from a high-pressure zone to the east
to bring dry, high-velocity winds from the deserts over Cajon Pass to the coastal region. These
winds, which gust to more than 80 mph, can reduce relative humidity to below 10 percent.

The SCAB experiences frequent temperature inversions (i.e., increasing air temperature with
increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air
contaminants, holding them relatively near the ground. As the sun warms the ground and the lower
air layer, the temperature of the lower air layer approaches the temperature of the base of the
inversion (upper) layer until the inversion layer finally breaks, which allows vertical mixing with
the lower layer. This phenomenon is observed in the mid to late afternoon on hot summer days,
when the smog appears to clear up suddenly. Winter inversions frequently break by mid morning.

The greatest air pollution impacts throughout the Basin occur from June to September. This
condition is generally attributed to the large amount of pollutant emissions, increased sunshine,
light winds, and shallow vertical atmospheric mixing. This frequently reduces pollutant
dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the Basin vary
with location, season, and time of day. Ozone concentrations, for example, tend to be lower
along the coast, higher in the near inland valleys, and lower in the far inland areas of the Basin
and adjacent desert. Over the past 30 years, substantial progress has been made in reducing air
pollution levels in the SCAB.

3.15.2.2 Criteria Pollutants
The CARB and SCAQMD maintain a network of more than 38 air quality monitoring stations
throughout the SCAB to effectively monitor 38 source receptor areas (SRA) in the region. The
proposed project site is located in SRA number 1, Central Los Angeles County. The nearest air
monitoring station to the project site is the North Main Street monitoring station, which is
located at 1630 North Main Street, approximately 2 miles north of the project site. All criteria
pollutants are monitored at this station (i.e., O$_3$, CO, NO$_2$, SO$_2$, PM$_{10}$, and PM$_{2.5}$). Table 3.15-1
presents ambient air quality data recorded at this station for the past 4 years.

As Table 3.15-1 shows, exceedances of the California standards were recorded at the North Main
Street station for O$_3$ (1-hour, California standard), PM$_{10}$ (24-hour and annual), and PM$_{2.5}$
(24-hour and annual) on one or more occasions from 2006 through 2009. The national standards
were exceeded for 8-hour O$_3$ (2008 standard) and PM$_{2.5}$ (24-hour and annual). No exceedances of
either the state or national standards were recorded for SO$_2$, NO$_2$, or CO.
Table 3.15-1
Criteria Air Pollutants Data Summary (North Main Street Monitoring Station)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>Standard</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone (O₃)</td>
<td>1-Hour</td>
<td>Maximum Concentration (ppm)</td>
<td>0.108</td>
<td>0.115</td>
<td>0.109</td>
<td>0.139</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; CAAQS (0.09 ppm)</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>8-Hour</td>
<td>Maximum Concentration (ppm)</td>
<td>0.079</td>
<td>0.103</td>
<td>0.090</td>
<td>0.100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; NAAQS (0.075 ppm)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; CAAQS (0.07 ppm)</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Particulate Matter (PM₁₀)</td>
<td>24-Hour</td>
<td>Maximum Concentration (µg/m³)</td>
<td>59</td>
<td>78</td>
<td>66</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; CAAQS (50 µg/m³)</td>
<td>18</td>
<td>31</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; NAAQS (150 µg/m³)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>National Annual Average (50 µg/m³)</td>
<td>30</td>
<td>33</td>
<td>31</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>State Annual Average (20 µg/m³)</td>
<td>30</td>
<td>33</td>
<td>31</td>
<td>32</td>
</tr>
<tr>
<td>Particulate Matter (PM₂·₅)</td>
<td>24-Hour</td>
<td>Maximum Concentration (µg/m³)</td>
<td>56</td>
<td>64</td>
<td>78</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; NAAQS (65 µg/m³)</td>
<td>12</td>
<td>20</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>98th Percentile (µg/m³)</td>
<td>38.9</td>
<td>51.2</td>
<td>40.3</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-year Average 98th Percentile (µg/m³)</td>
<td>49</td>
<td>48</td>
<td>43</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>AAM (15.0 µg/m³)</td>
<td>15.6</td>
<td>16.9</td>
<td>16.0</td>
<td>15.7</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>1-Hour</td>
<td>Maximum Concentration (ppm)</td>
<td>3.5</td>
<td>3.2</td>
<td>2.9</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; CAAQS (20 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; NAAQS (35 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>8-Hour</td>
<td>Maximum Concentration (ppm)</td>
<td>2.68</td>
<td>2.15</td>
<td>1.96</td>
<td>2.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; CAAQS (9.0 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO₂)</td>
<td>1-hour</td>
<td>Maximum Concentration (ppm)</td>
<td>0.111</td>
<td>0.104</td>
<td>0.122</td>
<td>0.115</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; CAAQS (0.18 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>Maximum Concentration (ppm)</td>
<td>0.029</td>
<td>0.030</td>
<td>0.027</td>
<td>0.028</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; NAAQS (0.053 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sulfur Dioxide (SO₂)</td>
<td>24-hour</td>
<td>Maximum Concentration (ppm)</td>
<td>0.006</td>
<td>0.004</td>
<td>0.002</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; CAAQS (0.04 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days &gt; NAAQS (0.14 ppm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>AAM (0.03 ppm)</td>
<td>0.002</td>
<td>0.003</td>
<td>0.002</td>
<td>0.002</td>
</tr>
</tbody>
</table>

AAM – Annual Arithmetic Mean; µg/m³ – micrograms per cubic meter; ppm – parts per million;
CAAQS – California ambient air quality standards; NAAQS – National ambient air quality standards
a The standard of 0.075 ppm (previously 0.08 ppm) was adopted on March 12, 2008, and became effective in June 2008.
b In 2006, EPA revoked NAAQS for annual PM₁₀, and tightened the 24-hour PM₂·₅ standard from the previous level of 65 µg/m³. The area designation based on the new standard became effective in October 2009.
c State statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
d Attainment condition for PM₂·₅ is that the 3-year average of the 98th percentile of 24-hour concentrations at each monitor within an area must not exceed the standard (35 µg/m³)

3.15.2.3 Toxic Air Contaminants

Toxic air contaminants (TACs) consist of compounds that include metals, minerals, soot, and hydrocarbon-based chemicals. There are hundreds of different types of air toxics with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining and chrome-plating operations; commercial operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust. TACs are a concern in the SCAB because of the large number of mobile sources and industrial facilities throughout the basin.

California regulates TACs through its Air Toxics Program, which is mandated in Chapter 3.5 of the Health and Safety Code – Toxic Air Contaminants, and Part 6 – Air Toxics Hot Spots Information and Assessment (H&SC Sections 39660 et seq. and 44300 et seq., respectively).

The regulatory approach used in controlling TAC levels relies on a quantitative risk assessment process rather than ambient air conditions to determine allowable emission levels from the source. In addition, for carcinogenic air pollutants, there is no safe concentration in the atmosphere. Local concentrations can pose a health risk and are termed “toxic hot spots.”

SCAQMD conducted the most comprehensive study on air toxics in the SCAB is the Multiple Air Toxics Exposure Study71,72 (MATES-II [2000] and MATES III [2008]). The monitoring program measured more than 30 air toxics, including gaseous and particulate TACs. The monitoring study was accompanied by a computer modeling study in which SCAQMD estimated the risk of cancer from breathing toxic air pollution throughout the region, based on emissions and weather data. MATES-II found that the maximum cancer risk in the region from carcinogenic air pollutants ranged from approximately 1,100 in a million to 1,750 in a million, with an average regional risk of approximately 1,400 in a million. The higher risk levels were found in the urban core areas in south central Los Angeles County, in Wilmington adjacent to the San Pedro Bay Ports, and near freeways. Overall, the study showed that airborne diesel particulate matter (DPM) contributed approximately 70 percent of the cancer risk. Mobile sources accounted for approximately 90 percent of the cancer risk, and industries and other stationary sources accounted for the remaining 10 percent.

The MATES III Study Final Report, a follow-up to the MATES II study, was released in September 2008. The results of the MATES III study indicate that:

- Across the Basin, the population-weighted risk was 853 in one million, approximately 8 percent lower compared to the MATES II period of 931 per million;

The overall average lifetime risk from TACs in the Ports area experienced an approximate 17 percent increase. The 2005 average population-weighted air toxics risk in the Ports area was estimated to be approximately 1,415 per million, compared with 1,208 per million lifetime cancer risk as estimated for MATES II period (1998-1999);

- Mobile source toxics account for 94 percent of risk; and
- Diesel accounts for 84 percent of air toxics risk.

Based on the finding that DPM is a significant contributor to cancer risk in the region, SCAQMD has approved fleet rules to limit diesel exhaust emitted by municipal vehicle fleets, trash trucks, street sweepers, taxis, and buses in the region. That rule is one of many measures outlined in a comprehensive plan to reduce toxic air pollution from mobile and stationary sources. Other programs to reduce diesel emissions include SCAQMD grant programs for the conversion of diesel equipment to alternative fuels.

**Asbestos**

Asbestos is a toxic air contaminant. According to the California Division of Mines and Geology (CDMG), the proposed project location is not in an area of naturally occurring asbestos. Naturally occurring asbestos (NOA) areas are identified based on the type of rock found in the area. Asbestos-containing rocks found in California are ultramafic rocks, including serpentine rocks. These types of rocks are found only in the Catalina Island portion of Los Angeles County, and they are not present in the project area.

**3.15.2.4 Sensitive Receptors**

Some land uses are considered more sensitive to changes in air quality than others, depending on the demographic characteristics of occupants and users and the activities involved. Sensitive receptors include residential areas, hospitals, elder-care facilities, rehabilitation centers, elementary schools, daycare centers, and parks.

Residential areas are considered sensitive to air pollution because residents, including children and the elderly, tend to be at home for extended periods of time, resulting in sustained exposure to pollutants. Existing land uses immediately adjacent to the north, south, and west of the project alignment are industrial or commercial. No residential properties are located along the 6th Street Viaduct corridor (see Figure 3.15-1), and none of the adjacent buildings are known to be used for residential purposes. The closest residences to the project site are located approximately 600 ft and 400 ft north and east of the proposed project’s eastern limit, respectively. Other potentially sensitive uses in the more distant area include schools, religious institutions, and hospitals. Figure 3.15-1 shows the locations of sensitive receptors and the representative Monitoring Station.
Figure 3.15-1  Sensitive Receptors and Monitoring Station Locations
The closest schools to the project site are the Santa Isabel Elementary School and the Soto Street Elementary School, which are located approximately 0.3-mile and 0.4-mile to the southeast of the project eastern limit, respectively. The nearest hospitals/medical clinics are Boyle Heights Industrial Medical Clinic and Promise Hospital of East Los Angeles, which are located approximately 840 feet southeast and 0.45 mile northeast of the proposed project’s eastern limit, respectively. The nearest parks/sports centers are Hollenbeck Park and Boyle Heights Sports Center, which are located approximately 0.1-mile and 0.15-mile northeast of the proposed project’s eastern limit, respectively.

3.15.3 Environmental Consequences

3.15.3.1 Conformity with Clean Air Act

Transportation Conformity Rule

The CAA mandates that the state submit and implement an SIP for each criteria pollutant that violates the applicable NAAQS. These plans must include pollution control measures that demonstrate how the standards will be met. Conformity to the SIP is defined under the 1990 CAAAs as conformity with the plan’s purpose in eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of these standards. The U.S. Environmental Protection Agency (EPA) has two types of SIP conformity guidelines: transportation conformity rules that apply to transportation plans and projects, and general conformity rules that apply to all other federal actions.

The Transportation Conformity Rule, as defined in 40 CFR Parts 51 and 93, was established by EPA and the DOT on November 30, 1993, to implement the Federal CAA conformity provisions. The CAA Amendments of 1990 require that transportation plans, programs, and projects that are funded by or approved under Title 23 U.S.C. or the Federal Transit Act, conform to state or federal air quality plans for achieving NAAQS. The SCAG is the federally designated Metropolitan Planning Organization (MPO) responsible for transportation planning in the SCAB. The transportation conformity process establishes the major connection between transportation planning and emission reductions from transportation sources. In addition, the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 (revised in 1998 as TEA-21) linked compliance with conformity requirements to continued FHWA and Federal Transit Administration (FTA) funding of transportation plans, programs, and projects. These requirements were not changed with enactment of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) on August 10, 2005. Conformity with the CAA takes place on both regional and local levels.
3.15.3.2 Regional Conformity Determination

Regional conformity was demonstrated following the Caltrans Conformity Flowchart that is included in the Caltrans Standard Environmental Report document outlines. In determining whether a project conforms to an approved air quality plan, agencies must use current emission estimates based on the most recent population, employment, travel, and congestion estimates determined by an area’s MPO. The MPOs are required to develop and maintain long-range plans and programs, such as 20-year RTP and 4-year (or longer) Regional Transportation Improvement Programs (RTIP) that set out transportation policies and programs for the region. A conforming RTIP model outcome projects that the regulated pollutants will be reduced to acceptable levels within time frames that meet the NAAQS.

SCAG is the MPO for the project region and is responsible for developing the RTP and RTIP for the region, including Los Angeles, Orange, San Bernardino, Riverside, Imperial, and Ventura counties. The 2008 RTP was found to conform by SCAG on May 8, 2008, and FHWA and FTA adopted the air quality conformity finding on June 5, 2008.

The proposed project was determined to be “not regionally significant” by SCAG in response to the Notice of Preparation (NOP) for the Environmental Impact Report in June 2006. Pursuant to Federal Conformity Regulations [specifically, 40 CFR 93.105 (c)(1)(i)], a description of the proposed project was submitted by the City to SCAG for an intergovernmental review and comment (SCAG Clearinghouse No. I 20070475 6th Street Viaduct Seismic Improvement Project). The results of the review were provided in a letter dated August 13, 2007, to Mr. Wallace Stokes of the City of Los Angeles Bureau of Engineering. The following paragraph, quoted directly from the letter, is the result of SCAG’s review:

“We have reviewed the 6th Street Viaduct Seismic Improvement Project, and have determined that the proposed Project is not regionally significant per SCAG Intergovernmental Review (IGR) Criteria and California Environmental Quality Act (CEQA) Guidelines (Section 15206). Therefore, the proposed Project does not warrant comments at this time.”

Furthermore, the proposed project is in SCAG’s 2008 RTP – Making the Connections within the “Los Angeles County Strategic Plan Projects List” with ID U1A0805.

The project is also listed in the Final 2008 RTIP, Page 48, on the Los Angeles Local Highway Projects list, under the conformity category “exempt” as follows:

- LAOG104; Bridge No. 53C1880.53, Sixth Street, Over Los Angeles River, E Santa Ana FWY. LSSRP Seismic bridge replacement.

The 2008 RTIP was federally approved on November 17, 2008. The design concept and scope of the proposed project is consistent with the project description in the Final 2008 RTIP and the assumptions in SCAG’s regional emission analysis. As such, the project would not interfere with timely implementation of all Transportation Control Measures (TCMs) identified in the currently approved SIP. Because the proposed project is included in the list of projects exempt from the requirement to demonstrate conformity by the RTIP, the regional emissions contemplated by the Plan would not change due to implementation of the proposed project.

### 3.15.3.3 Project-Level Conformity

Basic elements of the federal CAA include NAAQS for criteria air pollutants, hazardous air pollutants (HAPs) emission standards, state attainment plans, motor vehicle emissions standards, stationary source emission standards and permits, acid rain control measures, stratospheric O₃ protection, and enforcement provisions.

The NAAQS have two tiers: primary standards to protect public health and secondary standards to prevent environmental degradation (e.g., damage to vegetation and property, visibility impairment). The CAA mandates that the state submit and implement a SIP for areas not meeting the NAAQS. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 Amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require a demonstration of reasonable progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA that are most applicable to the proposed project include Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions).

Title I of the CAA identifies attainment, nonattainment, and unclassifiable areas with regard to the criteria pollutants, and it sets deadlines for all areas to reach attainment for the following criteria pollutants: O₃, NO₂, SO₂, particulates less than 10 microns in diameter (PM₁₀), CO, and Pb. The NAAQS were amended in July 1997 to include the 8-hour O₃ standard and an NAAQS for fine particulates less than 2.5 microns in diameter (PM₂.₅).

Title II of the CAA contains many provisions with regard to mobile sources, including motor vehicle emission standards (e.g., new tailpipe emissions standards for cars and trucks and
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance,
Minimization, and/or Mitigation Measures

nitrogen oxides [NO\textsubscript{x}] standards for heavy-duty vehicles), fuel standards (e.g., requirements for
reformulated gasoline), and a program for cleaner fleet vehicles.

The EPA reviews the most up-to-date scientific information and the existing ambient standard
for each pollutant every 5 years and obtains advice from the Clean Air Scientific Advisory
Committee on each review. Based on these, EPA applies consideration to revise NAAQS
accordingly. The NAAQS for particulate matter were amended in September 2006 to strengthen
the 24-hour PM\textsubscript{2.5} standard. EPA had revised the O\textsubscript{3} standard in 1997, setting the 8-hour standard
at 0.08 parts per million (ppm). On March 12, 2008, EPA strengthened the 8-hour O\textsubscript{3} NAAQS
based on new scientific evidence about the effects of ground-level O\textsubscript{3} on public health and the
environment. The new standard (primary and secondary) is 0.075 ppm. Furthermore, based on
new scientific studies and several health risk assessment results, EPA revised the lead NAAQS
to provide increased protection for children and other at-risk populations against adverse health
effects, most notably including neurological effects in children. The revised standard level is
0.15 micrograms per cubic meter (\textmu g/m\textsuperscript{3}) over a period of 3 months. The final rule was signed
on October 15, 2008. The area designation/classification based on the new Pb standard became
effective on November 16, 2010, and attainment demonstration SIPs will be due by late 2013.

The standards for all criteria pollutants are presented in Table 3.15-2; health effects that result
from exposure to these pollutants are shown in Table 3.15-3. Nonattainment designations are
categorized by EPA into seven levels of severity: basic, marginal, moderate, serious, severe-15\textsuperscript{74},
severe-17, and extreme. The SCAB is currently classified as a nonattainment area for O\textsubscript{3} and fine
particulates (PM\textsubscript{10} and PM\textsubscript{2.5}). Based on 1990 CAAA, the SCAB nonattainment designations are
as follows: nonattainment for PM\textsubscript{2.5}, requiring attainment by 2015; and “severe-17” for 8-hour
O\textsubscript{3}, requiring attainment with the standard by 2021 (the former 1-hour O\textsubscript{3} standard was revoked
by EPA on June 15, 2005; thus, it is no longer in effect for the state of California). The SCAB
was in “serious nonattainment” status for PM\textsubscript{10} until 2006. The Basin met the PM\textsubscript{10} standards at
all stations except for western Riverside, where the annual PM\textsubscript{10} standard was not met as of
2006. The annual standard was revoked by EPA in December 2006 due to a lack of evidence
linking health problems to long-term exposure to coarse particulate pollution. The 24-hour PM\textsubscript{10}
standard is retained at its existing value. Currently, the Basin meets the 24-hour average federal
standard, and the only days that exceed the standard are associated with high wind natural events
or exceptional events, such as wildfires.

\textsuperscript{74} The “-15” and “-17” designate the number of years within which attainment must be achieved.
Table 3.15-2
Ambient Air Quality Standards

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>California Standards a,c Concentration</th>
<th>Federal Standards b,c</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Primary</td>
</tr>
<tr>
<td>Ozone (O₃)</td>
<td>1 Hour</td>
<td>0.09 ppm (180 µg/m³)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>8 Hour</td>
<td>0.07 ppm (137 µg/m³)</td>
<td>0.075 ppm (147 µg/m³)</td>
</tr>
<tr>
<td>Respirable Particulate Matter (PM₁₀)</td>
<td>24 Hour Annual Average (AAM)</td>
<td>50 µg/m³</td>
<td>150 µg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>— e</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM₂.₅)</td>
<td>24 Hour Annual Average (AAM)</td>
<td>No Separate State Standard</td>
<td>35 µg/m³ f</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>8 Hour</td>
<td>9.0 ppm (10 mg/m³)</td>
<td>9 ppm (10 mg/m³)</td>
</tr>
<tr>
<td></td>
<td>1 Hour</td>
<td>20 ppm (23 mg/m³)</td>
<td>35 ppm (40 mg/m³)</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO₂)</td>
<td>Annual Average (AAM)</td>
<td>0.030 ppm (56 µg/m³)</td>
<td>0.053 ppm (100 µg/m³)</td>
</tr>
<tr>
<td></td>
<td>1 Hour</td>
<td>0.18 ppm (338 µg/m³)</td>
<td>—</td>
</tr>
<tr>
<td>Sulfur Dioxide (SO₃)</td>
<td>Annual Average (AAM)</td>
<td>—</td>
<td>0.030 ppm (80 µg/m³)</td>
</tr>
<tr>
<td></td>
<td>24 Hour</td>
<td>0.04 ppm (105 µg/m³)</td>
<td>0.14 ppm (365 µg/m³)</td>
</tr>
<tr>
<td></td>
<td>3 Hour</td>
<td>—</td>
<td>0.5 ppm (1,300 µg/m³)</td>
</tr>
<tr>
<td></td>
<td>1 Hour</td>
<td>0.25 ppm (655 µg/m³)</td>
<td>—</td>
</tr>
<tr>
<td>Lead (Pb) f</td>
<td>30-Day Average</td>
<td>1.5 µg/m³</td>
<td>1.5 µg/m³</td>
</tr>
<tr>
<td></td>
<td>Calendar Quarter</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>3-month rolling b</td>
<td>—</td>
<td>0.15 µg/m³</td>
</tr>
<tr>
<td>Visibility-Reducing Particles</td>
<td>8 Hour</td>
<td>In sufficient amount to produce an extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles when the relative humidity is less than 70%.</td>
<td>—</td>
</tr>
<tr>
<td>Sulfates</td>
<td>24 Hour</td>
<td>25 µg/m³</td>
<td>—</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>1 Hour</td>
<td>0.03 ppm (42 µg/m³)</td>
<td>—</td>
</tr>
<tr>
<td>Vinyl Chloride g</td>
<td>24 Hour</td>
<td>0.01 ppm (26 µg/m³)</td>
<td>—</td>
</tr>
</tbody>
</table>

a California standards for O₃, CO (except Lake Tahoe), SO₂ (1 and 24 hour), NO₂, suspended particulate matter (PM₁₀, PM₂.₅), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than O₃, particulate matter, and those based on annual averages or annual arithmetic mean) 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 PM₂.₅, 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.

c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to these reference conditions; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d The new standard of 0.075 ppm (previously 0.08 ppm) was adopted on March 12, 2008, and it became effective in June.

e The annual standard of 50 µg/m³ was revoked by EPA in December 2006 due to a lack of evidence linking health problems to long-term exposure to coarse particulate pollution.

f Based on 2004-2006 monitored data, EPA tightened the 24-hour standard of PM₂.₅ from the previous level of 65µg/m³. The updated area designation will become effective in early 2010.

The California Air Resources Board (CARB) has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow implementation of control measures at levels below the ambient concentrations specified for these pollutants.

h Final rule for the new federal standard was signed October 15, 2008.

AAM – annual arithmetic mean; mg/m³ – milligrams per cubic meter; µg/m³ – micrograms per cubic meter; ppm – parts per million

### Table 3.15-3

**Health Effects Summary for Criteria Air Pollutants**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Sources</th>
<th>Primary Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone ($O_3$)</td>
<td>Atmospheric reaction of organic gases with nitrogen oxides in the presence of sunlight.</td>
<td>Aggravation of respiratory diseases; irritation of eyes; impairment of pulmonary function; plant leaf injury.</td>
</tr>
<tr>
<td>Nitrogen Dioxide ($NO_2$)</td>
<td>Motor vehicle exhaust; high temperature; stationary combustion; atmospheric reactions.</td>
<td>Aggravation of respiratory illness; reduced visibility; reduced plant growth; formation of acid rain.</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>Incomplete combustion of fuels and other carbon-containing substances, such as motor vehicle exhaust; and natural events, such as decomposition of organic matter.</td>
<td>Reduced tolerance for exercise; impairment of mental function; impairment of fetal development; impairment of learning ability; death at high levels of exposure; aggravation of some cardiovascular diseases (angina).</td>
</tr>
<tr>
<td>Particulate Matter ($PM_{10}$ and $PM_{2.5}$)</td>
<td>Fuel combustion in motor vehicles, equipment, and industrial sources; construction activities; industrial processes; residential and agricultural burning; atmospheric chemical reactions.</td>
<td>Reduced lung function; aggravation of the effects of gaseous pollutants; aggravation of respiratory and cardiorespiratory diseases; increased cough and chest discomfort; soiling; reduced visibility.</td>
</tr>
<tr>
<td>Sulfur Dioxide ($SO_2$)</td>
<td>Combustion of sulfur-containing fossil fuels; smelting of sulfur-bearing metal ores; industrial processes.</td>
<td>Aggravation of respiratory and cardiovascular diseases; reduced lung function; carcinogenesis; irritation of eyes; reduced visibility; plant injury; deterioration of materials (e.g., textiles, leather, finishes, coating).</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>Contaminated soil.</td>
<td>Impairment of blood function and nerve construction; behavioral and hearing problems in children.</td>
</tr>
</tbody>
</table>


For CO, attainment demonstrations were previously submitted to EPA in 1992, 1994, and 1997 to bring the SCAB into attainment with the federal standard in 2000. In 2001, the CO standard was exceeded in the SCAB on 3 days, thus leaving the basin in nonattainment status. At that time, a request to EPA for an extension of the attainment date to 2002 was planned to be included in the revision to the 1997 Air Quality Management Plan (AQMP). Due to delays, the CO attainment demonstration provided in the 1997 AQMP amendments lapsed. In January 2005, the California Air Resources Board (CARB) declared CO attainment for the SCAB based on air quality data collected during 2001 through 2003. The redesignation was approved by the State Office of Administrative Law, and it became effective on July 23, 2004. The 2005 CO Redesignation Request and Maintenance Plan for SCAB was reviewed and approved by EPA, and the federal CO attainment status for SCAB became effective on June 11, 2007.

All nonattainment areas are subject to a “transportation conformity” measure, requiring local transportation and air quality officials to coordinate their planning to ensure that transportation projects do not hinder an area’s ability to reach its clean air goals. These requirements become effective 1-year after an area’s nonattainment designation.

**Request for Reclassification of Basin’s 8-hour Ozone Status to Extreme Nonattainment**

For a nonattainment area, the CAA provides voluntary reclassification of the area to a higher classification by submitting a request to EPA. The SCAQMD requested (as part of its 2007 AQMP submittal to EPA) a reclassification for the Basin from “severe-17” to “extreme”
nonattainment. On April 15, 2010, EPA’s Region 9 Administrator signed a final rule to grant the reclassification request. This has extended the 8-hour O₃ attainment date to 2024 and allow attainment demonstration to rely on emission reductions from measures that anticipate the development of new technologies or improvement of existing control technologies.

**California Ambient Air Quality Standards**

The State of California began to set its ambient air quality standards, CAAQS, in 1969 under the mandate of the Mulford-Carrell Act. The California Clean Air Act (CCAA) was enacted September 30, 1988, and it became effective January 1, 1989. The CCAA requires all areas of the state to achieve and maintain the CAAQS by the earliest practicable date. Table 3.15-1 shows the CAAQS currently in effect for each of the criteria pollutants, as well as the other pollutants recognized by the state. As shown in Table 3.15-2, the CAAQS are more stringent than the NAAQS for most of the criteria air pollutants. In general, California state standards are more health protective than the corresponding NAAQS. In addition, the CAAQS include standards for other pollutants recognized by the state. For example, California has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Moreover, on April 28, 2005, CARB approved a new 8-hour-average O₃ standard of 0.070 ppm to further protect California’s most vulnerable population (i.e., children) from the adverse health effects associated with ground-level O₃. The standard went into effect in early 2006.

According to the CAAQS, the SCAB is classified as an extreme nonattainment area for O₃ and nonattainment area for PM_{10} and PM_{2.5}. The SCAB complies with the state standards for sulfates, hydrogen sulfide, and vinyl chloride, and is unclassified for the California standard for visibility-reducing particles. Table 3.15-4 provides the Basin’s attainment status with respect to federal and state standards.

**Project-level Conformity Determination**

Project-level conformity is required for projects in CO, PM_{10}, and PM_{2.5} nonattainment and maintenance areas. As discussed previously, a region is a nonattainment area if one or more monitoring stations in the region fail to attain the relevant CAAQS or NAAQS. Areas that were previously designated nonattainment, but have recently met the CAAQS or NAAQS, are called maintenance areas. In general, projects must not cause the standards to be violated, and in nonattainment areas, the project must not cause any increase in the number and severity of violations.
Table 3.15-4
South Coast Air Basin Attainment Status

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>National Standard</th>
<th>California Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone (O$_3$), 1-hour average</td>
<td>Not Applicable</td>
<td>Extreme</td>
</tr>
<tr>
<td>Ozone (O$_3$), 8-hour average</td>
<td>Severe-17 $^b$</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>Attainment/Maintenance $^c$</td>
<td>Attainment $^c$</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO$_2$)</td>
<td>Attainment/Maintenance</td>
<td>Nonattainment $^d$</td>
</tr>
<tr>
<td>Sulfur Dioxide (SO$_2$)</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>Serious</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>Nonattainment</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>Nonattainment $^e$</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>Sulfates (SO$_4^{2-}$)</td>
<td>Not Applicable</td>
<td>Attainment</td>
</tr>
</tbody>
</table>

$^a$ The National 1-hour O$_3$ standard was revoked June 15, 2005.
$^b$ A request for reclassification status to “extreme” nonattainment was submitted to EPA in September 2007.
$^c$ The redesignation request for CO status to attainment-maintenance, as adopted by SCAQMD on March 4, 2005, and by CARB on February 24, 2006, was recently approved by EPA, and the redesignation became effective June 11, 2007.
$^d$ The State NO$_2$ standard was amended February 22, 2007, to lower the 1-hour standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. The Office of Administrative Law approved the proposed amendments and the new standards became effective on March 20, 2008.
$^e$ Area designation for California, based on the 2008 Pb NAAQS became effective on November 16, 2010.


In March 2006, the Transportation Conformity Rule was updated to include regulations for performing qualitative analysis of PM$_{10}$ and PM$_{2.5}$ hot-spot impacts. Only projects that are considered “Projects of Air Quality Concern” (POAQC) are required to perform an analysis. POAQC are defined generally, as: (1) new or expanded highway projects that have a significant number of significant increase in diesel vehicles, (2) projects affecting intersections that are Level of Service (LOS) D, E, or F with a significant number of diesel vehicles, (3) new or expanded bus and rail terminals and transfer points with a significant number of diesel vehicles congregating in a single location, and (4) projects in or affecting locations, areas, or categories of sites that are identified in the PM$_{10}$ or PM$_{2.5}$ applicable implementation plan as sites of possible violation.

Project-level transportation conformity was determined by conducting hot-spot analysis for CO, PM$_{10}$, and PM$_{2.5}$, for which the SCAB is designated as nonattainment or maintenance area. The hot-spot analyses were based on the Caltrans guidance document, *Transportation Project-Level Carbon Monoxide Protocol (CO Protocol)*,$^75$ and the FHWA/EPA guidance document,

---

Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in $PM_{2.5}$ and $PM_{10}$ Nonattainment and Maintenance Areas (Guidelines)\textsuperscript{76}.  

The proposed project is not a new facility, and it does not include the addition of traffic lanes; therefore, no capacity enhancement or change in traffic pattern is anticipated. As such, the future (postconstruction) project traffic volumes and associated air pollutant emissions would be based on the ambient growth rate; the no-action and build traffic volumes and associated emissions data would be the same, and no significant impact from project implementation, with the exception of improved seismic safety, is expected to occur.  

Table 3.15-5, which was derived from the project traffic study, summarizes the effect of project implementation during the construction years and for future/post-construction years, on traffic conditions along the adjacent roadways, which would be carrying additional detour traffic volume during the construction years. As shown, no change in truck percentages is expected to occur as a result of project implementation. The primary focus of this project-level air quality or hot-spot analysis is the operational impact on air quality created by the proposed improvement. The analysis is provided for CO, $PM_{10}$, and $PM_{2.5}$. The analysis years consist of the project’s opening year (2018) and the design or horizon year (2038) referenced in the approved plan. The approach to the local analysis is tiered, and it is dependent on the SIP: the CO analysis can be qualitative or quantitative. The $PM_{10}$ and $PM_{2.5}$ analysis is qualitative in scope.  

**CO Hot-Spot Analysis**

The CO Protocol has a screening exercise that would determine whether the project requires a qualitative or quantitative analysis, or if none would be necessary. Below are the steps taken following Figure 1 of the CO Protocol (flow charts of Figures 1 and 3 in the CO Protocol are included in the Air Quality Technical Report).  

3.1.1 Is the project exempt from all emissions analyses?

The proposed project is defined as “reconstructing of a bridge (6th Street Viaduct), with no additional travel lanes,” in Table 1 of the Protocol, among the Safety projects that are exempt from all emission analyses; however, because the horizontal alignment of the new structure may be different from the existing viaduct (when the final design alternative is selected), this study proceeds with examining the potential CO hot-spot impact analysis; continue to step 3.1.2.

### Table 3.15-5

**Peak-Hour Traffic Conditions along Local Roadway Segments for Existing Year, Opening Year, Detour Years, and Horizon Year**

<table>
<thead>
<tr>
<th>Year</th>
<th>Scenario</th>
<th>Peak Hour</th>
<th>Soto Street to Boyle Avenue</th>
<th>Boyle Avenue to I-101 NB On-ramp</th>
<th>I-101 NB On-ramp to Mateo Street</th>
<th>Mateo Street to Alameda Street</th>
<th>Alameda Street to Central Avenue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>v/c LOS</td>
<td>EB</td>
<td>v/c LOS</td>
<td>EB</td>
<td>v/c LOS</td>
</tr>
<tr>
<td>2007</td>
<td>Existing</td>
<td>AM</td>
<td>0.15/A 0.5/A 1.538</td>
<td>0.09/A 0.54/A 1.52</td>
<td>0.11/A 0.52/A 1.532</td>
<td>0.14/A 0.42/A 1.329</td>
<td>0.17/A 0.4/A 1.368</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM</td>
<td>0.44/A 0.18/A 1.490</td>
<td>0.38/A 0.17/A 1.326</td>
<td>0.4/A 0.15/A 1.322</td>
<td>0.38/A 0.13/A 1.299</td>
<td>0.35/A 0.16/A 1.234</td>
</tr>
<tr>
<td>2018</td>
<td>Opening Year - (Build and No Action)</td>
<td>AM</td>
<td>0.16/A 0.53/A 1.652</td>
<td>0.1/A 0.58/A 1.631</td>
<td>0.12/A 0.56/A 1.641</td>
<td>0.15/A 0.45/A 1.425</td>
<td>0.18/A 0.43/A 1.466</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM</td>
<td>0.48/A 0.19/A 1.600</td>
<td>0.41/A 0.18/A 1.420</td>
<td>0.43/A 0.16/A 1.411</td>
<td>0.41/A 0.14/A 1.318</td>
<td>0.38/A 0.17/A 1.323</td>
</tr>
<tr>
<td>2014-2017</td>
<td>Detour Years</td>
<td>AM</td>
<td>0.11/A 0.23/A 0.52</td>
<td>0.04/A 103</td>
<td>0.04/A 0.06/A 252</td>
<td>0.13/A 0.17/A 716</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM</td>
<td>0.26/A 0.13/A 0.924</td>
<td>0.05/A 120</td>
<td>0.04/A 0.04/A 202</td>
<td>0.19/A 0.1/A 682</td>
<td></td>
</tr>
<tr>
<td>2038</td>
<td>Horizon Year - (Build and No Action)</td>
<td>AM</td>
<td>0.19/A 0.65/B 2.030</td>
<td>0.12/A 0.72/C 2.010</td>
<td>0.15/A 0.69/B 2.020</td>
<td>0.18/A 0.55/A 1.750</td>
<td>0.22/A 0.53/A 1.800</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM</td>
<td>0.58/A 0.24/A 1.976</td>
<td>0.5/A 0.23/A 1.750</td>
<td>0.53/A 0.19/A 1.740</td>
<td>0.5/A 0.17/A 1.620</td>
<td>0.47/A 0.21/A 1.630</td>
</tr>
</tbody>
</table>

### Table 3.15-6

**Segments of 7th Street Viaduct**

<table>
<thead>
<tr>
<th>Year</th>
<th>Scenario</th>
<th>Peak Hour</th>
<th>Soto Street to Boyle Avenue</th>
<th>Boyle Avenue to Santa Fe Avenue</th>
<th>Santa Fe Avenue to Mateo Street</th>
<th>Mateo Street to Alameda Street</th>
<th>Alameda Street to Central Avenue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>v/c LOS</td>
<td>EB</td>
<td>v/c LOS</td>
<td>EB</td>
<td>v/c LOS</td>
</tr>
<tr>
<td>2007</td>
<td>Existing</td>
<td>AM</td>
<td>0.11/A 0.3/A 989</td>
<td>0.18/A 0.26/A 1.057</td>
<td>0.16/A 0.3/A 1.293</td>
<td>0.22/A 0.37/A 1.437</td>
<td>0.19/A 0.38/A 1.355</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM</td>
<td>0.16/A 0.35/A 1.217</td>
<td>0.26/A 0.17/A 1.296</td>
<td>0.4/A 0.15/A 1.348</td>
<td>0.36/A 0.2/A 1.374</td>
<td>0.32/A 0.21/A 1.243</td>
</tr>
<tr>
<td>2018</td>
<td>Opening Year - (Build and No Action)</td>
<td>AM</td>
<td>0.12/A 0.33/A 1.060</td>
<td>0.2/A 0.28/A 1.134</td>
<td>0.17/A 0.41/A 1.387</td>
<td>0.24/A 0.4/A 1.540</td>
<td>0.2/A 0.4/A 1.461</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM</td>
<td>0.17/A 0.37/A 1.304</td>
<td>0.39/A 0.12/A 1.223</td>
<td>0.43/A 0.18/A 1.461</td>
<td>0.38/A 0.22/A 1.452</td>
<td>0.34/A 0.23/A 1.365</td>
</tr>
<tr>
<td>2014-2017</td>
<td>Detour Years</td>
<td>AM</td>
<td>0.19/A 0.54/A 1.741</td>
<td>0.28/A 0.66/B 2.247</td>
<td>0.23/A 0.7/B 2.216</td>
<td>0.3/A 0.69/B 2.370</td>
<td>0.23/A 0.6/A 2.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM</td>
<td>0.38/A 0.42/A 1.931</td>
<td>0.67/B 0.23/A 2.154</td>
<td>0.64/B 0.26/A 2.157</td>
<td>0.59/A 0.3/A 2.149</td>
<td>0.38/A 0.28/A 1.600</td>
</tr>
<tr>
<td>2038</td>
<td>Horizon Year - (Build and No Action)</td>
<td>AM</td>
<td>0.14/A 0.4/A 1.300</td>
<td>0.38/A 0.34/A 1.400</td>
<td>0.21/A 0.5/A 1.710</td>
<td>0.3/A 0.5/A 1.900</td>
<td>0.25/A 0.5/A 1.790</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM</td>
<td>0.21/A 0.45/A 1.600</td>
<td>0.48/A 0.15/A 1.500</td>
<td>0.53/A 0.22/A 1.600</td>
<td>0.42/A 0.28/A 1.790</td>
<td>0.42/A 0.28/A 1.690</td>
</tr>
</tbody>
</table>

Notes: a. No traffic flow due to Viaduct closure.
b. From 8 studied segments of 4th street, the 5 segments that were affected by the detour plan are presented.

3.1.2 Is project exempt from regional emissions analyses?

Yes – The project is defined as exempt in the currently conforming RTP and RTIP (see Appendix D); in addition, see the response to the previous question; continue to step 3.1.9.

3.1.9 Examine local impacts – Proceed to Section 4 (Figure 3)

Section 4, local analysis: procedures delineated in the flow chart of Figure 3 of the CO Protocol were followed as described below.

Level 1. Is the project in a CO nonattainment area?

No – The project is located in the SCAB, which was approved and redesignated by EPA as a CO attainment/maintenance area as of June 11, 2007. Proceed to Level 1a.

Level 1a. Was the area designation “attainment” after the 1990 Clean Air Act?

Yes – See response to previous question. Proceed to Level 1b.

Level 1b. Has “continuous attainment” been verified with the local Air District, if appropriate?

The redesignation to attainment-maintenance was recently approved (June 11, 2007) by EPA; therefore, the annual review of monitoring data has not occurred. According to Section 4.1.3 of the Protocol, proceed to Level 7.

Level 7. Does project worsen air quality?

No – Based on the following discussion, as prescribed by the Protocol, the project is not likely to worsen air quality at the intersections or for the local project area.

Screening Analysis (Reference Section 4.7.1 of CO Protocol)

a. Does the project significantly increase (more than 2 percent) the percentage of vehicles operating in cold start mode?

An increase in percentage of vehicles in cold start mode is not anticipated because the project does not include areas such as parking lots where engine cold starts are expected to occur.

b. Does the project significantly increase traffic volumes? According to the Protocol, increases in traffic volume in excess of 5 percent are generally considered potentially significant. Increases less than 5 percent would be potentially significant, if a reduction in average speeds is anticipated.
The project is a bridge seismic improvement, non capacity-increasing project. The project does not include the addition of traffic lanes and would not change the fleet mix or traffic patterns; therefore, it would not result in a significant increase (if any) of daily traffic volumes.

c. Does the project worsen traffic flow? For uninterrupted roadway segments, a reduction in average speeds (within a range of 3 to 50 mph) should be regarded as worsening traffic flow. For intersections, a reduction in average speed or an increase in average delay should be considered as worsening traffic flow.

The proposed project provides seismic improvement for the safety of the viaduct. A replacement viaduct would provide the same number of traffic lanes, a median, shoulders, and sidewalks, but no additional traffic lanes. As such, the project would not cause changes in truck volume percent or AADT compared to the No Action Alternative. No adverse impacts from implementation of the project are expected to occur.

Based on the above analysis, it is concluded that the project is satisfactory for the screening level analysis, and no further qualitative or quantitative CO analysis is required.

**Particulate Matter (PM$_{10}$ and PM$_{2.5}$) Qualitative Hot-Spot Analysis**

Pursuant to Federal Conformity Regulations [specifically, 40 CFR 93.105 (c)(1)(i)], an Interagency Review Form was prepared for the proposed project and was submitted to the SCAG Transportation Conformity Working Group (TCWG). The project Review Form was discussed among representatives at the TCWG meeting on July 22, 2008, to determine if the proposed project requires a project-level PM hot-spot analysis. The TCWG determined that the project is not a project of air quality concern; therefore, no further PM hot-spot analysis is required for the proposed project. A copy of the Project Review Form, as well as the TCWG conformity determination (from the minutes of the work group meeting) is provided in Appendix J.

**3.15.3.4 Construction Impacts**

Project-related air-contaminant emissions would be considered causing adverse air quality impacts if they result in emissions that either create a violation of the NAAQS (Table 3.15-2) or exceed Thresholds of Significance. Table 3.15-6 outlines the threshold criteria recommended by SCAQMD for use in evaluating the effects of project emissions, pertaining to CEQA, on existing air quality and potential violations of standards and plans.

Based on the guidelines of the *L.A. CEQA Thresholds Guide*\(^\text{77}\), construction of the proposed project would have a significant air quality impact if any of the following would occur:

\(^{77}\) City of Los Angeles, 2006. L.A. CEQA Thresholds Guide.
Table 3.15-6
SCAQMD CEQA Air Quality Significance Thresholds

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Maximum Emission (lbs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Construction</td>
</tr>
<tr>
<td>NO\textsubscript{x}</td>
<td>100</td>
</tr>
<tr>
<td>VOC</td>
<td>75</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>150</td>
</tr>
<tr>
<td>PM\textsubscript{2.5}</td>
<td>55</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>150</td>
</tr>
<tr>
<td>CO</td>
<td>550</td>
</tr>
<tr>
<td>Lead</td>
<td>3</td>
</tr>
</tbody>
</table>

Toxic Air Contaminants (TACs) and Odor Thresholds

- **TACs (including carcinogens and noncarcinogens)**
  - Maximum Incremental Cancer Risk ≥ 10 in 1 million
  - Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million)
  - Chronic & Acute Hazard Index ≥ 1.0 (project increment)
- **Odor**
  - Project creates an odor nuisance pursuant to SCAQMD Rule 402

Ambient Air Quality for Criteria Pollutants

- **NO\textsubscript{2}**
  - 1-hour average annual arithmetic mean
  - SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:
    - 0.18 ppm (338 \(\mu g/m^3\)) – state
    - 0.030 ppm (56 \(\mu g/m^3\)) – state and 0.0534 ppm – federal
- **PM\textsubscript{10}**
  - 24-hour average annual average
  - 10.4 \(\mu g/m^3\) (construction)\(^c\) and 2.5 \(\mu g/m^3\) (operation)
  - 1.0 \(\mu g/m^3\)
- **PM\textsubscript{2.5}**
  - 24-hour average
  - 10.4 \(\mu g/m^3\) (construction)\(^c\) and 2.5 \(\mu g/m^3\) (operation)
- **Sulfate**
  - 24-hour average
  - 25 \(\mu g/m^3\)
- **CO**
  - 1-hour average 8-hour average
  - SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:
    - 20 ppm (23,000 \(\mu g/m^3\)) – state
    - 9.0 ppm (10,000 \(\mu g/m^3\)) – state/federal


- **Regional Impact**: Construction-related emissions of criteria pollutants exceed the SCAQMD Mass Daily Thresholds provided in Table 3.15-6.
- **Local Impact**: Proposed project construction emissions would result in offsite ambient air pollutant concentrations that exceed any of the SCAQMD thresholds of significance summarized in Table 3.15-6.
- **Toxic Air Contaminants**: Project construction activities would emit carcinogenic or TACs that exceed the maximum individual cancer risk of ten in one million, or an acute or chronic hazard index of 1.0.
- **Odor**: Project construction activities would create objectionable odors at sensitive receptors.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

**Analysis Methodology**

Construction impacts consist of (1) direct air pollutant emissions from onsite operation of heavy-duty construction equipment and earthwork activities (e.g., excavation, grading), as well as offsite emissions from haul trucks and construction workers commuting to and from construction site; and (2) indirect impacts from vehicular emissions due to traffic detours during the required closure of the viaduct (for the Replacement Alternative).

The SCAQMD guidance document, *CEQA Air Quality Handbook, November 1993* (Handbook), was used to calculate air pollutant emissions from construction of the proposed project. Mass daily emissions during different construction stages were forecast using the construction schedule and phasing provided by the proposed project’s design engineers. The CARB OFFROAD 2007 emissions model was used to develop exhaust emission factors for the various types of off-road construction equipment to be used in the project construction activities. The EMFAC2007 emissions model was used to develop the emission factors for on-road trucks and employee vehicles. Fugitive dust emission factors were based on guidance from SCAQMD. The localized effects from the onsite portion of mass daily emissions were evaluated for each phase of construction using the dispersion model ISCST-AERMOD, consistent with procedures outlined in EPA’s *1998 Guideline on Air Quality Models* and SCAQMD’s *Localized Significance Threshold Methodology for CEQA Evaluations* guidance documents. The emission rates utilized in dispersion modeling analysis were developed from the peak daily onsite emissions divided by the 8-hour-per-day construction duration. Details of the construction schedule, the type and amount of equipment anticipated to be used in each phase, the emissions estimation model, and dispersion model input assumptions used in this analysis are presented in the Air Quality Technical Report\(^7\) prepared for this project.

The SCAQMD document titled, *Final – Methodology to Calculate Particulate Matter (PM) 2.5 and PM\(_{2.5}\)* Significance Thresholds (October 2006), provides appropriate guidance for analyzing PM\(_{2.5}\) emissions. Because PM\(_{2.5}\) emission factors for mechanical or combustion processes are not well developed, SCAQMD has recommended an indirect approach to calculating PM\(_{2.5}\) emissions until more precise PM\(_{2.5}\) emission factors are developed. Since PM\(_{2.5}\) is a subset of PM\(_{10}\), the current methodology for calculating PM\(_{2.5}\) from fugitive dust sources (e.g., grading, demolition, unpaved roads, open storage piles) and combustion sources (i.e., stationary combustion sources, vehicle exhaust) is based on estimated PM\(_{10}\) emissions. Total suspended particulate matter emissions typically contain specific fractions of PM\(_{10}\) and PM\(_{2.5}\) that can be measured. In general, particulate matter from fugitive dust-generating sources is primarily composed of PM\(_{10}\), with a relatively small fraction of the fugitive particulate matter consisting of

---

\(^7\) Air Quality Technical Report for 6\(^{th}\) Street Viaduct Seismic Improvement Project. 2008; updated 2011.
PM$_{2.5}$. According to the report, fugitive dust contains approximately 21 percent PM$_{2.5}$. Alternatively, particulate matter from combustion sources is primarily composed of PM$_{2.5}$, with a small fraction consisting of PM$_{10}$. For off-road heavy-duty equipment, exhaust emissions consist of approximately 89 percent PM$_{2.5}$.

**Alternative 1 – No Action**

No air quality impacts would occur as long as the viaduct remains in service and no construction is warranted. At an unpredictable time in the future, the viaduct may be determined to be unserviceable. In this event, the City would have to seek funding sources to replace it. Under that circumstance, the viaduct would need to be closed to traffic until the new viaduct was completed. Impacts to air quality under this scenario would be similar to Alternative 3 – Replacement, except that there would be some changes to emission factors used in the calculation of the air pollutant emissions.

**Alternative 2 – Retrofit**

**Direct Construction Impacts**

Air pollutant emissions from construction equipment operation are calculated for the worst day during each phase of construction. Since the worst day of Alternative 2 could be similar to Alternative 3, the equipment mix of Alternative 3 is used for the calculation. Please see the Alternative 3 analysis below.

**Indirect Construction Impacts**

Since Alternative 2 construction would not require long-term viaduct closure (e.g., continuous closure lasting a week or longer), no traffic detours would occur; therefore, no vehicular emissions associated with traffic detours are anticipated.

**Alternative 3 – Replacement**

**Regional Impacts**

*a. Direct Construction Impacts*

In accordance with the SCAQMD Air Quality Handbook for CEQA impact analysis, emissions were calculated for a worst-case day (see Figure 3.15-2). The worst-case day represents the maximum emissions that can reasonably be expected and helps in determining the degree of potential air quality impact.

Table 3.15-7 summarizes the mass daily direct construction emissions for the proposed project for the worst-case days of each of the years 1 through 4 of the construction period. As shown for year 3 of construction, daily emissions for the 2 months with the most construction activities were estimated because 1 month would include most earthwork activities and another would contain the most overlapping phases. Emissions exceeding the threshold criteria are shown in **bold type**. As Table 3.15-7 shows, year 1 of construction activities would include the highest
Figure 3.15-2
Outline of Construction Schedule for Replacement Alternative

<table>
<thead>
<tr>
<th>Activity</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>8</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Buildings Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utility Relocation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viaduct Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ramps Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foundation Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retaining Walls &amp; Roadway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sections</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column/Pier Table Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abutment Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main Spans Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approach Spans Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roadways/Surface Reconstruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park/Sidewalks/Barrier Railing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleanup and Move Out</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TL #: Analyzed Timeline in Year # of construction


### Table 3.15-7

**Estimate of Regional Direct Construction Emissions**

(lbs/day)

<table>
<thead>
<tr>
<th>Construction Year</th>
<th>VOC</th>
<th>NOx</th>
<th>CO</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YEAR 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peak Concurrent Activities (Month 6)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onsite</td>
<td>42</td>
<td>332</td>
<td>184</td>
<td>81</td>
<td>28</td>
</tr>
<tr>
<td>Offsite</td>
<td>&lt;1</td>
<td>52</td>
<td>53</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>384</td>
<td>237</td>
<td>83</td>
<td>30</td>
</tr>
<tr>
<td><strong>Regional Daily Significance Threshold</strong></td>
<td>75</td>
<td>100</td>
<td>550</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Over/(Under) regional CEQA threshold</td>
<td>(33)</td>
<td>284</td>
<td>(313)</td>
<td>(67)</td>
<td>(25)</td>
</tr>
<tr>
<td>Exceed CEQA Threshold?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>YEAR 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peak Concurrent Activities (Month 12)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onsite</td>
<td>21</td>
<td>169</td>
<td>101</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>Offsite</td>
<td>1</td>
<td>13</td>
<td>18</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>182</td>
<td>119</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>Over/(Under) regional CEQA threshold</td>
<td>(53)</td>
<td>82</td>
<td>(431)</td>
<td>(128)</td>
<td>(44)</td>
</tr>
<tr>
<td>Exceed CEQA Threshold?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>YEAR 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peak Concurrent Activities (Month 1)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onsite</td>
<td>27</td>
<td>217</td>
<td>134</td>
<td>42</td>
<td>17</td>
</tr>
<tr>
<td>Offsite</td>
<td>&lt;1</td>
<td>15</td>
<td>22</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>232</td>
<td>156</td>
<td>43</td>
<td>17</td>
</tr>
<tr>
<td>Over/(Under) regional CEQA threshold</td>
<td>(48)</td>
<td>132</td>
<td>(394)</td>
<td>(107)</td>
<td>(38)</td>
</tr>
<tr>
<td>Exceed CEQA Threshold?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Peak Concurrent Activities (Month 8)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onsite</td>
<td>28</td>
<td>226</td>
<td>145</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Offsite</td>
<td>&lt;1</td>
<td>5</td>
<td>13</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>230</td>
<td>158</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Over/(Under) regional CEQA threshold</td>
<td>(47)</td>
<td>130</td>
<td>(392)</td>
<td>(136)</td>
<td>(43)</td>
</tr>
<tr>
<td>Exceed CEQA Threshold?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>YEAR 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peak Concurrent Activities (Month 1)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onsite</td>
<td>18</td>
<td>139</td>
<td>89</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Offsite</td>
<td>&lt;1</td>
<td>10</td>
<td>17</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>149</td>
<td>106</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Over/(Under) regional CEQA threshold</td>
<td>(57)</td>
<td>49</td>
<td>(444)</td>
<td>(135)</td>
<td>(47)</td>
</tr>
<tr>
<td>Exceed CEQA Threshold?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

* Compiled using the CEQA Air Quality Handbook and the emissions inventory from OFFROAD model. The equipment mix and use assumption for each phase is provided by the construction engineer.

* PM$_{10}$ emissions estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression.

* Offsite emissions include motor vehicle emissions associated with construction equipment transport to the site, workers' commute, and debris-hauling activities.

worst-case daily pollutant emissions. The calculation results indicate that unmitigated daily direct emissions of NO\textsubscript{X} would exceed the SCAQMD regional significance threshold level during peak overlapping activities of each construction year. Maximum regional direct construction emissions would not exceed the SCAQMD daily significance thresholds for other criteria pollutants.

\textbf{b. Indirect Emissions from Detour Traffic}

Construction of the new viaduct would trigger traffic detours as a result of viaduct closure. The daily emissions of detoured vehicle traffic during the construction years were calculated using the peak-hour vehicle miles traveled (VMT) data and projected average vehicle speeds within the project study area. These data were obtained from the Traffic Analysis Report prepared for this project (originally prepared 2008 and validated 2011). Emission factors for the average travel speeds were obtained using the EMFAC2007 model.\textsuperscript{79} Table 3.15-8 summarizes the results of air pollutant emissions from traffic estimates during the detour years. As shown, during the detour years, the net change of emissions between the viaduct opened (no detour traffic) and viaduct closed (with detour traffic) scenarios for all pollutants except NO\textsubscript{x}, would be negative. Regional NO\textsubscript{x} emissions would increase 0.5 lbs/day or less than 0.1 percent of total NO\textsubscript{x} emissions.

\textbf{c. Total Regional Construction Emissions}

The total direct and indirect construction emissions are subject to SCAQMD significance criteria for construction impacts. Table 3.15-9 presents the total regional emissions and comparison with the SCAQMD thresholds of significance.

As Table 3.15-9 shows, the regional emissions of NO\textsubscript{X} would exceed the SCAQMD daily significance threshold during each of the four construction years, while emissions of other criteria pollutants would not exceed the thresholds.

### Table 3.15-8

**Project Indirect Construction (Detour) Emissions during Detour Years (lbs/day)**

<table>
<thead>
<tr>
<th>Project Scenario/ Roadway Segments</th>
<th>CO</th>
<th>VOC</th>
<th>NOX</th>
<th>SO2</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 2018 – Without Project (Viaduct Open)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th Street - Soto Street to Central Avenue</td>
<td>89.7</td>
<td>3.3</td>
<td>23.7</td>
<td>0.2</td>
<td>17.6</td>
<td>3.9</td>
</tr>
<tr>
<td>1st Street - Soto Street to Central Avenue</td>
<td>109.1</td>
<td>3.9</td>
<td>30.2</td>
<td>0.3</td>
<td>22.7</td>
<td>5.0</td>
</tr>
<tr>
<td>4th Street - Soto Street to Central Avenue</td>
<td>199.3</td>
<td>7.1</td>
<td>55.1</td>
<td>0.6</td>
<td>41.5</td>
<td>9.2</td>
</tr>
<tr>
<td>7th Street - Soto Street to Central Avenue</td>
<td>73.6</td>
<td>2.6</td>
<td>20.4</td>
<td>0.2</td>
<td>15.3</td>
<td>3.4</td>
</tr>
<tr>
<td>Central Avenue – 1st Street to 7th Street</td>
<td>37.3</td>
<td>1.4</td>
<td>9.8</td>
<td>0.1</td>
<td>7.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Alameda Street – 1st Street to 7th Street</td>
<td>77.8</td>
<td>2.8</td>
<td>21.5</td>
<td>0.2</td>
<td>16.2</td>
<td>3.6</td>
</tr>
<tr>
<td>Mateo Street – 6th Street to 7th Street</td>
<td>3.7</td>
<td>0.1</td>
<td>0.9</td>
<td>&lt;0.1</td>
<td>0.7</td>
<td>0.2</td>
</tr>
<tr>
<td>Santa Fe Avenue – 6th Street to 7th Street</td>
<td>7.7</td>
<td>0.3</td>
<td>1.9</td>
<td>&lt;0.1</td>
<td>1.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Boyle Avenue – 1st Street to 7th Street</td>
<td>45.6</td>
<td>1.7</td>
<td>12.0</td>
<td>0.1</td>
<td>9.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Soto Street – 1st Street to SR 60 EB On-ramp</td>
<td>114.1</td>
<td>4.1</td>
<td>31.5</td>
<td>0.3</td>
<td>23.7</td>
<td>5.2</td>
</tr>
<tr>
<td><strong>Total Year 2018 – No Action</strong></td>
<td><strong>757.8</strong></td>
<td><strong>27.3</strong></td>
<td><strong>207.0</strong></td>
<td><strong>2.1</strong></td>
<td><strong>155.5</strong></td>
<td><strong>34.4</strong></td>
</tr>
<tr>
<td><strong>Year 2018 – With Project (Viaduct Closed)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th Street - Soto Street to Central Avenue</td>
<td>14.0</td>
<td>0.5</td>
<td>3.7</td>
<td>&lt;0.1</td>
<td>2.7</td>
<td>0.6</td>
</tr>
<tr>
<td>1st Street - Soto Street to Central Avenue</td>
<td>114.4</td>
<td>4.1</td>
<td>31.6</td>
<td>0.3</td>
<td>23.8</td>
<td>5.3</td>
</tr>
<tr>
<td>4th Street - Soto Street to Central Avenue</td>
<td>219.4</td>
<td>7.8</td>
<td>60.7</td>
<td>0.6</td>
<td>45.7</td>
<td>10.1</td>
</tr>
<tr>
<td>7th Street - Soto Street to Central Avenue</td>
<td>119.4</td>
<td>4.2</td>
<td>33.0</td>
<td>0.3</td>
<td>24.9</td>
<td>5.5</td>
</tr>
<tr>
<td>Central Avenue – 1st Street to 7th Street</td>
<td>32.2</td>
<td>1.2</td>
<td>8.5</td>
<td>0.1</td>
<td>6.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Alameda Street – 1st Street to 7th Street</td>
<td>77.8</td>
<td>2.8</td>
<td>21.5</td>
<td>0.2</td>
<td>16.2</td>
<td>3.6</td>
</tr>
<tr>
<td>Mateo Street – 6th Street to 7th Street</td>
<td>4.4</td>
<td>0.2</td>
<td>1.1</td>
<td>&lt;0.1</td>
<td>0.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Santa Fe Avenue – 6th Street to 7th Street</td>
<td>7.7</td>
<td>0.3</td>
<td>1.9</td>
<td>&lt;0.1</td>
<td>1.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Boyle Avenue – 1st Street to 7th Street</td>
<td>45.5</td>
<td>1.7</td>
<td>12.0</td>
<td>0.1</td>
<td>8.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Soto Street – 1st Street to SR 60 EB On-ramp</td>
<td>120.3</td>
<td>4.3</td>
<td>33.3</td>
<td>0.3</td>
<td>25.1</td>
<td>5.5</td>
</tr>
<tr>
<td><strong>Total Roadway Traffic Emissions</strong></td>
<td><strong>754.9</strong></td>
<td><strong>27.0</strong></td>
<td><strong>207.2</strong></td>
<td><strong>2.1</strong></td>
<td><strong>155.8</strong></td>
<td><strong>34.4</strong></td>
</tr>
<tr>
<td><strong>Detour Emissions (Total Indirect Construction Daily Emissions)</strong></td>
<td><strong>-2.9</strong></td>
<td><strong>-0.3</strong></td>
<td><strong>0.2</strong></td>
<td><strong>0.0</strong></td>
<td><strong>0.3</strong></td>
<td><strong>0.0</strong></td>
</tr>
</tbody>
</table>

Note: Emissions are calculated using emission factors from EMFAC2007, at the projected average speed, and VMT of each roadway segment within the study area (from Traffic Analysis Report). The calculation worksheets are included in the Air Quality Technical Report.

EB – eastbound

Table 3.15-9
Estimated Total Regional Construction Emissions of (lbs/day)

<table>
<thead>
<tr>
<th>Scenario/Alternative</th>
<th>CO</th>
<th>VOC</th>
<th>NOx</th>
<th>SO2</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadway Emissions – Year 2018 Viaduct Open – No Action</td>
<td>757.8</td>
<td>27.3</td>
<td>207.0</td>
<td>2.1</td>
<td>155.5</td>
<td>34.4</td>
</tr>
<tr>
<td>Roadway Emissions – Year 2018 Viaduct Closed – Alternative 3B</td>
<td>754.9</td>
<td>27.0</td>
<td>207.2</td>
<td>2.1</td>
<td>155.8</td>
<td>34.4</td>
</tr>
<tr>
<td>Detour Emissions – Alternative 3B</td>
<td>-2.9</td>
<td>-0.3</td>
<td>0.2</td>
<td>0.0</td>
<td>0.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Direct Construction Emissions – Year 1</td>
<td>237</td>
<td>42</td>
<td>384</td>
<td>1</td>
<td>83</td>
<td>30</td>
</tr>
<tr>
<td>Total Regional Construction Emissions – Year 1</td>
<td>234</td>
<td>42</td>
<td>384</td>
<td>1</td>
<td>83</td>
<td>30</td>
</tr>
<tr>
<td>Direct Construction Emissions – Year 2</td>
<td>119</td>
<td>22</td>
<td>182</td>
<td>1</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>Total Regional Construction Emissions – Year 2</td>
<td>116</td>
<td>22</td>
<td>182</td>
<td>1</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>Direct Construction Emissions – Year 3</td>
<td>158</td>
<td>28</td>
<td>230</td>
<td>1</td>
<td>43</td>
<td>17</td>
</tr>
<tr>
<td>Total Regional Construction Emissions – Year 3</td>
<td>155</td>
<td>28</td>
<td>230</td>
<td>1</td>
<td>43</td>
<td>17</td>
</tr>
<tr>
<td>Direct Construction Emissions – Year 4</td>
<td>106</td>
<td>18</td>
<td>149</td>
<td>1</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Total Regional Construction Emissions – Year 4</td>
<td>103</td>
<td>18</td>
<td>149</td>
<td>1</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>SCAQMD CEQA Significance Threshold</td>
<td>550</td>
<td>75</td>
<td>100</td>
<td>150</td>
<td>150</td>
<td>55</td>
</tr>
</tbody>
</table>

Notes:
Emissions exceeding the threshold criteria are shown in bold type.
• Roadway emissions are calculated using emission factors from EMFAC2007, at the projected average speed, and VMT of each roadway segment within the study area (from Traffic Analysis Report).
• The calculation worksheets are included in the Air Quality Technical Report.
• Direct construction emissions calculated using the CEQA Air Quality Handbook and the emissions inventory from OFFROAD model.


Localized Impacts

a. Direct Construction Emissions

The localized effects from onsite construction emissions constitute the direct construction emissions (i.e., emissions generated within the construction site). The localized effects from onsite construction emissions were evaluated to determine whether the proposed project construction would result in offsite ambient air pollutant concentrations that would exceed a SCAQMD threshold of significance. A screening analysis was conducted using the methodology promulgated by SCAQMD in its Localized Significance Threshold (LST) Methodology for CEQA Evaluations (SCAQMD, 2003). It was estimated that the project’s maximum daily disturbed area during any construction phase would be 2.5 to 5 acres. This corresponds to the lookup tables in the LST document for projects that have maximum disturbance areas at any time of less than or equal to 5 acres. The project onsite construction emissions of NOX, CO, PM10, and PM2.5 were compared with the threshold values in lookup tables C-1, C-2, C-4, and C-6 of the 2006-2008 LSTs, respectively.
The closest sensitive receptors to the construction site include the first row of single-family residences located approximately 600 ft and 400 ft north and east of the proposed project’s eastern limit, respectively; Santa Isabel Elementary School; Soto Street Elementary School; and Boyle Heights Industrial Medical Clinic, approximately 0.3-mile, 0.4-mile, and 0.1-mile southeast of the project eastern limit, respectively. Year 1 of construction activities includes demolition of several buildings that are near the southernmost adjacent residences (approximately 200 ft from the nearest residence); as such, the active construction site boundary would be closer to the sensitive receptors during year 1 of construction. The construction site boundary during years 2 through 4 of construction are farther from these residences. Therefore, the LSTs used for year 1 are for receptors within 330 ft of the construction site boundary and for years 2 to 4 are for the receptors within 660 ft of the construction site.

The projected maximum daily localized emissions and the applicable LSTs are provided in Table 3.15-10. As shown, the screening analysis indicates that at the nearest sensitive receptors, the estimated localized mass daily emissions would exceed the SCAQMD daily significance thresholds for NO\textsubscript{X} during the first and third years of construction and for PM\textsubscript{10} and PM\textsubscript{2.5} during the first year. As such, potential impacts of localized NO\textsubscript{X} and particulates emissions concentrations at the nearest sensitive receptors may be significant during these years of construction.

Based on the results of the screening analysis, a more refined dispersion modeling analysis using the EPA preferred AERMOD model was performed for NO\textsubscript{X} and particulate matter (PM\textsubscript{10} and PM\textsubscript{2.5}) emissions during peak construction activities. The modeling was conducted for year 1 (the year in which most demolition activities would occur, resulting in the highest PM emissions and with highest NO\textsubscript{X} emissions due to the type and quantity of equipment used for construction activities).

\textbf{b. Indirect Emissions from Detour Traffic}

The emissions from vehicle traffic along the roadways adjacent to the construction site constitute the indirect construction emissions and are evaluated in the air quality analysis. This is the traffic redirected to the detour route due to closure of the 6th Street viaduct during construction.

The effects of CO emissions from detour traffic are local in nature, and they are prominent at the intersections with potential for hot-spot generation; therefore, local CO concentrations were projected at selected intersections using the CALINE-4 traffic emission dispersion model. The analysis followed Appendix B of the CO Protocol and is consistent with procedures identified through SCAQMD’s CO modeling protocol. The SCAQMD recommends a hot-spot evaluation of potential localized CO impacts when volume-to-capacity ratios are increased by 2 percent at
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

October 2011  3-242  6th Street Viaduct Seismic Improvement Project

Table 3.15-10

<table>
<thead>
<tr>
<th>Analyzed Construction Stage/Phase</th>
<th>Maximum Onsite Pollutants Emissions (pounds/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CO</td>
</tr>
<tr>
<td>Year 1</td>
<td>184</td>
</tr>
<tr>
<td>SCAQMD Localized Daily Significance Threshold – Year 1\textsuperscript{a}</td>
<td>3,030</td>
</tr>
<tr>
<td>Exceed Threshold?</td>
<td>No</td>
</tr>
<tr>
<td>Year 2</td>
<td>101</td>
</tr>
<tr>
<td>Year 3</td>
<td>145</td>
</tr>
<tr>
<td>Year 4</td>
<td>89</td>
</tr>
<tr>
<td>SCAQMD Localized Daily Significance Threshold – Years 2 through 4\textsuperscript{a}</td>
<td>4,547</td>
</tr>
<tr>
<td>Exceed Threshold?</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: Exceedances from thresholds are shown in bold type.
\textsuperscript{a} The nearest sensitive receptors include the single-family residences located approximately 600 ft north of the project alignment and west of US 101; Soto Street Elementary School, Soto Street Children’s Center and Boyle Heights Medical Clinic, approximately 0.3-mile, 0.45-mile, and 0.1-mile southeast of the project eastern limit, respectively. The active construction site boundary during year 1 is closer, approximately 198 ft from the nearest residence; therefore, the LSTs for year 1 correspond to the receptors within 330 ft from the construction site.

\textsuperscript{b} The project site is located in SCAQMD Source Receptor Area (SRA) No. 1. It was estimated that the project’s maximum daily disturbed area during any construction phase would be 2.5 to 5 acres (see Appendix A). The localized significance thresholds (LST) in the table are from the lookup tables for a 5-acre site in the SRA No. 1, at 330 ft (year 1) and 660 ft (Years 2 through 4) distances; Tables C-1, C-2, C-4, and C-6 of the 2006-2008 lookup tables were used for LSTs of NO\textsubscript{X}, CO, PM\textsubscript{10}, and PM\textsubscript{2.5}, respectively.


intersections with an LOS of D or worse. The SCAQMD also recommends a CO hot-spot evaluation when an intersection declines in LOS by one level beginning when LOS changes from an LOS of C to D. As shown in Table 3.15-11, of the 31 studied intersections, 10 would be impacted by the detour traffic. Analysis of the affected intersections was performed for the base year (2007), as well as the detour year (2018). The ambient CO concentrations were estimated based on the CEQA Handbook and CO Protocol guidance and using SCAQMD projected future year 1-hour and 8-hour concentrations for the Central Los Angeles monitoring station area (SCAQMD, 2007). Receptor locations were 10 ft from each intersection corner. The results of local area CO dispersion analysis are presented in Table 3.15-12.
# Table 3.15-11
## Intersections Impacted by Traffic Diversion during Construction Years

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Peak Hour</th>
<th>Existing (Year 2007)</th>
<th>Year (2018)</th>
<th>V/C</th>
<th>LOS</th>
<th>V/C</th>
<th>LOS</th>
<th>V/C</th>
<th>LOS</th>
<th>Increase</th>
<th>Exceeds SCAQMD Threshold</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Street - Pecan Street/US 101 SB On-Ramp</td>
<td>AM</td>
<td>1.037</td>
<td>F</td>
<td>0.801</td>
<td>D</td>
<td>0.898</td>
<td>D</td>
<td>0.097</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.541</td>
<td>A</td>
<td>0.412</td>
<td>A</td>
<td>0.499</td>
<td>A</td>
<td>0.087</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Street and US 101 SB Off-Ramp</td>
<td>AM</td>
<td>1.074</td>
<td>F</td>
<td>0.787</td>
<td>C</td>
<td>0.885</td>
<td>D</td>
<td>0.097</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.451</td>
<td>A</td>
<td>0.366</td>
<td>A</td>
<td>0.421</td>
<td>A</td>
<td>0.055</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Street and US 101 NB Off-Ramp</td>
<td>AM</td>
<td>0.109</td>
<td>F</td>
<td>1.059</td>
<td>F</td>
<td>1.137</td>
<td>F</td>
<td>0.078</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.422</td>
<td>A</td>
<td>0.399</td>
<td>A</td>
<td>0.469</td>
<td>A</td>
<td>0.070</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Street and Boyle Avenue</td>
<td>AM</td>
<td>0.718</td>
<td>C</td>
<td>0.804</td>
<td>D</td>
<td>0.899</td>
<td>D</td>
<td>0.095</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.595</td>
<td>A</td>
<td>0.669</td>
<td>B</td>
<td>0.771</td>
<td>C</td>
<td>0.102</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Street and I-5 SB Ramps/Gertrude Street</td>
<td>AM</td>
<td>0.731</td>
<td>C</td>
<td>0.719</td>
<td>C</td>
<td>0.809</td>
<td>D</td>
<td>0.090</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.87</td>
<td>D</td>
<td>1.040</td>
<td>F</td>
<td>1.127</td>
<td>F</td>
<td>0.087</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Street and I-5 NB Ramps/Cummings Street</td>
<td>AM</td>
<td>0.67</td>
<td>B</td>
<td>0.801</td>
<td>D</td>
<td>0.877</td>
<td>D</td>
<td>0.076</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.647</td>
<td>B</td>
<td>0.755</td>
<td>C</td>
<td>0.773</td>
<td>C</td>
<td>0.018</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Street and S. Soto Street</td>
<td>AM</td>
<td>0.102</td>
<td>F</td>
<td>1.115</td>
<td>F</td>
<td>1.205</td>
<td>F</td>
<td>0.090</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.142</td>
<td>F</td>
<td>1.542</td>
<td>F</td>
<td>1.591</td>
<td>F</td>
<td>0.048</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th Street and Santa Fe Avenue</td>
<td>AM</td>
<td>0.403</td>
<td>A</td>
<td>0.444</td>
<td>A</td>
<td>0.685</td>
<td>B</td>
<td>0.241</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.476</td>
<td>A</td>
<td>0.582</td>
<td>A</td>
<td>0.816</td>
<td>D</td>
<td>0.235</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th Street and Boyle Avenue</td>
<td>AM</td>
<td>0.339</td>
<td>A</td>
<td>0.371</td>
<td>A</td>
<td>0.836</td>
<td>D</td>
<td>0.465</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.334</td>
<td>A</td>
<td>0.365</td>
<td>A</td>
<td>0.645</td>
<td>B</td>
<td>0.280</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th Street and S. Soto Street</td>
<td>AM</td>
<td>0.557</td>
<td>A</td>
<td>0.605</td>
<td>B</td>
<td>0.712</td>
<td>C</td>
<td>0.107</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.67</td>
<td>B</td>
<td>0.725</td>
<td>C</td>
<td>0.826</td>
<td>D</td>
<td>0.101</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LOS: level of service; NB: northbound; SB: southbound; v/c: vehicle to capacity ratio

* Based on SCAQMD recommendations, significant impacts occur when volume-to-capacity ratios are increased by 2 percent at intersections with LOS D or worse, or when an intersection declines in LOS by one level beginning when LOS changes from LOS C to D.

Table 3.15-12
Detour Years Localized Carbon Monoxide Concentrations
(Indirect Construction Emissions)

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Peak Hour</th>
<th>1-hour Concentration (ppm)</th>
<th>8-hour Concentration (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing(^a) (2007)</td>
<td>Detour Year 2018 Viaduct Open</td>
<td>Detour Year 2018 Viaduct Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Viaduct Closed</td>
<td>Viaduct Closed</td>
</tr>
<tr>
<td>4(^{th}) Street and US 101 SB Off-Ramp</td>
<td>AM</td>
<td>8.0</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>6.7</td>
<td>6.1</td>
</tr>
<tr>
<td>4(^{th}) Street and US 101 NB Off-Ramp</td>
<td>AM</td>
<td>7.9</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>7.1</td>
<td>5.6</td>
</tr>
<tr>
<td>4(^{th}) Street and Boyle Avenue</td>
<td>AM</td>
<td>7.6</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>7.4</td>
<td>5.7</td>
</tr>
<tr>
<td>4(^{th}) Street and I-5 SB Ramps/ Gertrude Street</td>
<td>AM</td>
<td>7.2</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>7.2</td>
<td>5.9</td>
</tr>
<tr>
<td>4(^{th}) Street and I-5 NB Ramps/ Cummings Street</td>
<td>AM</td>
<td>7.4</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>7.5</td>
<td>5.8</td>
</tr>
<tr>
<td>4(^{th}) Street and S. Soto Street</td>
<td>AM</td>
<td>8.7</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>10.3</td>
<td>5.8</td>
</tr>
<tr>
<td>7(^{th}) Street and Santa Fe Avenue</td>
<td>AM</td>
<td>7.4</td>
<td>6.4</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>7.2</td>
<td>6.9</td>
</tr>
<tr>
<td>7(^{th}) Street and Boyle Avenue</td>
<td>AM</td>
<td>6.8</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>7.0</td>
<td>5.7</td>
</tr>
<tr>
<td>7(^{th}) Street and S. Soto Street</td>
<td>AM</td>
<td>7.7</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>7.9</td>
<td>5.7</td>
</tr>
</tbody>
</table>

State Standard (ppm) | 20 | 9.0
Federal Standard (ppm) | 35 | 9.0

NB – northbound; SB – southbound
4\(^{th}\) Street - Pecan Street/ US 101 SB On-Ramp was not modeled due to its very close proximity to 4\(^{th}\) Street and US 101 SB Off-Ramp.
Total CO concentrations include background 1-hour and 8-hour concentrations of 5.1 and 4.6 ppm, respectively, based on SCAQMD projected future concentrations for the Central Los Angeles monitoring station.
\(^a\) Existing CO levels refer to 2007 and include worst-case background concentrations of 5.58 ppm, 1-hour average, and 5.02 ppm, 8-hour average. Background concentrations are based on a 3-year average of the highest 1-hour and 8-hour concentrations measured at the Central Los Angeles (Main Street) air monitoring station. This scenario presents conditions for CEQA thresholds.


Table 3.15-12 indicates that during the detour years at the analyzed intersections, the 1-hour CO concentrations would range from 5.6 ppm to 6.9 ppm, and 8-hour CO concentrations would range from 5.0 ppm to 5.6 ppm. Therefore, the state 1-hour standard (20 ppm) and the federal/state 8-hour standard (9.0 ppm) would not be exceeded; thus, the proposed project would not have a significant impact upon local CO concentrations at any intersections during the detour years. Since impacts would not occur at the intersections with the highest potential for CO hot-
spots formation, sensitive receptors in the detour area would not be significantly affected by CO emissions generated by the additional/diverted traffic during the construction years.

c. Combined Direct and Indirect Construction Emissions Localized Impact

The combined direct and indirect construction emissions include onsite construction emissions (direct) and emissions from traffic along the detour route (indirect), including construction-related traffic. Local impacts from combined construction and detour traffic emissions of NO\(_X\), PM\(_{10}\), and PM\(_{2.5}\) were evaluated using the AERMOD dispersion model. Table 3.15-13 presents the modeling results for years 1 and 3 of construction, which represent the worst-case construction emissions. For conservative estimates, the detour traffic of year 2018 was considered for both of the analyzed years.

<table>
<thead>
<tr>
<th>Pollutant (Averaging Time)</th>
<th>Impact Criteria (^a)</th>
<th>Maximum Ambient Pollutant Impact at Nearest Sensitive Receptors (^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Residential</td>
</tr>
<tr>
<td>PM(_{10}) (24-Hour)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1</td>
<td>Maximum Increase</td>
<td>11.2</td>
</tr>
<tr>
<td>Threshold (µg/m(^3))</td>
<td>(µg/m(^3))</td>
<td>10.4</td>
</tr>
<tr>
<td>Significant Impact</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>PM(_{2.5}) (24-Hour)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1</td>
<td>Maximum Increase</td>
<td>8.4</td>
</tr>
<tr>
<td>Threshold (µg/m(^3))</td>
<td>(µg/m(^3))</td>
<td>10.4</td>
</tr>
<tr>
<td>Significant Impact</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>NO(_2) (1-hour) (^c,d)</td>
<td>Concentration at Receptor (project + background) (µg/m(^3))</td>
<td>266</td>
</tr>
<tr>
<td>Year 1</td>
<td></td>
<td>338</td>
</tr>
<tr>
<td>Threshold (µg/m(^3))</td>
<td>Adverse Concentration</td>
<td>No</td>
</tr>
</tbody>
</table>

\(a\) Exceedances of the thresholds are shown in bold. The thresholds for PM\(_{10}\)/PM\(_{2.5}\) are incremental thresholds; therefore, only impacts of emissions from project construction are compared to the thresholds. The thresholds for CO and NO\(_2\) are combined thresholds; therefore, impacts from project emissions plus background pollutant concentrations are compared to the thresholds.

\(b\) The nearest sensitive receptors include single-family residences located approximately 600 ft (182 meters) north of the project and west of US 101; Soto Street Elementary School, Soto Street Children’s Center and Boyle Heights Medical Clinic, approximately 0.3-mile (482 meters), 0.45-mile (724 meters) and 0.25-mile (395 meters) southeast of the project eastern limit, respectively.

\(c\) NO\(_2\) concentrations were calculated using the conversion rate from NO\(_X\) to NO\(_2\) based on the distance of receptor from the emission source.

\(d\) Background concentrations: NO\(_2\) =212 µg/m\(^3\): estimated based on ambient concentration trends and the last 4 years of monitored data at Main Street Monitoring Station; CO (2014 concentration): 1-hour = 5,840 µg/m\(^3\) (5.1 ppm); 8-hour = 5,267 µg/m\(^3\) (4.6 ppm); projected future CO concentrations.


As shown in Table 3.15-13, the potential increase in PM$_{2.5}$ emissions and the estimated potential NO$_2$ concentrations, when added to background ambient concentrations, would not violate their respective air quality standards at any of the sensitive receptor locations. As such, localized impacts with respect to these pollutant local concentrations during construction would not exceed CEQA thresholds.

The projected potential impacts represent worst-case conditions during demolition and site preparation, when earthwork activities occur close to the nearest residential units. The impacts would be reduced as these activities conclude near the northeast site boundary and move farther from the residential receptors. Table 3.15-13 also indicates that maximum PM$_{10}$ concentrations could reach a level of 11.2 µg/m$^3$ at the nearest residence located north of the project site during the peak concurrent demolition/construction activities of year 1 (month 6). This increased concentration level would exceed the SCAQMD threshold, but the impacts could be minimized by applying mitigation measures.

### 3.15.3.5 Toxic Air Contaminants

The greatest potential for direct or onsite emissions of TACs would be related to diesel particulate emissions associated with heavy equipment operations during grading and excavation activities. The indirect emissions of air toxics would be the MSAT emissions from the local roadways during detour years.

According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the construction schedule of 44 months, and considering that most grading and excavation activities would occur intermittently during different construction phases, the proposed project would not result in a long-term (i.e., 70 years) substantial source of TAC emissions with no residual emissions after construction and corresponding individual cancer risk. As such, potential impacts related to TAC emissions during construction would be less than significant, and no mitigation measures are required.

**Asbestos**

The project area does not include naturally occurring asbestos; however, project construction activities may include the demolition of buildings constructed prior to 1980. These structures may contain friable ACMs, which are subject to regulations that require demolition activities to minimize asbestos released into the air. Primarily, this is accomplished through the observation of rules for asbestos management promulgated by the National Emission Standards for Hazardous Air Pollutants (NESHAP). EPA enforces the NESHAP rules through CARB and SCAQMD.
The NESHAP asbestos rule specifies work practices to be followed during demolition of all structures that contain, or may contain, asbestos (40 CFR 61, Subpart M [NESHAP]). These work practices have been designed to effectively reduce airborne asbestos to safe levels. The proposed project would be subject to the NESHAP asbestos rule; therefore, it would be required to comply with these specified work practices. Additionally, demolition activities would be subject to SCAQMD Rule 1403, Asbestos Emissions from Demolition/Renovation Activities; and Rule 301, Demolition and Renovation Project Fees. Consequently, airborne asbestos would not be generated in unhealthy amounts during demolition.

Therefore, adverse air quality impacts from asbestos are not anticipated, and no mitigation measures would be required.

### 3.15.3.6 Mobile Source Air Toxics

Controlling air toxic emissions became a national priority with the passage of the CAAA, whereby Congress mandated that EPA regulate 188 air toxics, also known as hazardous air pollutants (HAPs). Mobile source air toxics (MSATs) are a subset of 188 air toxics that are the compounds emitted from roadway vehicles and non-road equipment. EPA has identified 7 compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA)\(^80\). The identified priority MSATs are benzene, formaldehyde, 1,3-butadiene, acrolein, naphthalene, diesel particulates and diesel exhaust organic gases (DPM), and polycyclic organic matter (POM). While FHWA considers these the priority MSATs, the list is subject to change and may be adjusted in consideration of future EPA rules.

Currently, neither EPA nor CARB have established regulatory concentration targets for the seven relevant MSAT pollutants appropriate for use in the project development process. For the same reason, states are neither required to achieve an identified level of air toxics in the ambient air nor identify air toxics reduction measures in the SIP. Developing strategies for reduction of MSATs is a cooperative effort between federal and local authorized agencies. Furthermore, the tools and techniques for assessing project-specific health impacts from MSATs are currently limited.

FHWA released an interim guidance on February 3, 2006, determining when and how to address MSAT impacts in the NEPA process for transportation projects\(^81\). The guidance document was updated on September 30, 2009 (FHWA, 2009)\(^82\). FHWA has identified three levels of analysis:

---


(1) No analysis for projects with no potential for meaningful MSAT effects;
(2) Qualitative analysis for projects with low potential MSAT effects; and
(3) Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

For projects warranting MSAT analysis, the seven priority MSATs should be analyzed.

Based on FHWA’s approach in the interim guidance update document, the proposed project would be considered to have no meaningful impacts on traffic volumes or fleet mix. The purpose of this project is to correct seismic deficiencies of the 6th Street Viaduct by replacing the viaduct with a seismically sound structure (Alternative 3) or by implementing a retrofit technique that would ensure the seismic safety of the viaduct for approximately 30 years (Alternative 2). The proposed project alternatives would not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the existing conditions. As such, it can be concluded that this project would generate minimal air quality impacts for CAA criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs. The Air Quality Technical Report, prepared as part of the EIR/EIS preparation for this project, provides an analysis of project MSAT emissions for the purpose of comparison with CEQA baseline (year 2007), and for indirect construction emissions during detour years (consistent with criteria pollutant analysis). However, as described in Section 3.15.3.5, the effect of changes in MSAT emissions would be short term, the potential impacts related to MSAT emissions during construction are considered less than significant, and no mitigation measures are required.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. According to an FHWA analysis, even after accounting for a 145 percent increase in VMT, the Agency predicts a combined reduction of 72 percent in the total annual emission rate for the priority MSATs, from 1999 to 2050. This will reduce the background level of MSATs, as well as the possibility of even minor MSAT emissions from this project.

3.15.3.7 Permanent Impacts
The purpose of the proposed project is to correct seismic deficiencies of the 6th Street Viaduct 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 AASHTO and the LADOT. No additional capacity to the viaduct or nearby roadways is proposed; therefore, there would be no permanent impacts to air quality under any of the alternatives considered in this EIR/EIS.

### 3.15.3.8 Indirect Impacts

There would be no indirect impacts to air quality if the viaduct remains in service (Alternative 1) or undergoes retrofit (Alternative 2). Construction of the new viaduct under Alternative 3 – Replacement would trigger traffic detours as a result of viaduct closure. Air pollutant emissions from detour traffic during construction years are calculated and presented in Section 3.15.3.4 above.

Note that under Alternative 1 – No Action, if the viaduct was determined unserviceable, the City would have to seek emergency funding sources to replace it. The viaduct would have to be closed and traffic detouring would occur. Air pollutant emissions during the detour years would be similar to Alternative 3, but for a longer period of time; however, exact calculation cannot be made because the timing and duration cannot be estimated.

### 3.15.4 Avoidance, Minimization, and Mitigation Measures

**Alternative 1 – No Action**

No mitigation is required as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would identify funding sources to replace it. Minimization measures described under Alternative 3 – Replacement would apply under this scenario.

**Alternative 2 – Retrofit**

Construction of Alternative 2 is expected to be at a smaller scale than Alternative 3. In addition, no long-term traffic detour would be required. The contractor would be required to follow the requirements of existing SCAQMD rules and regulations. No additional mitigation measures would be required.

**Alternatives 3 – Replacement**

Tables 3.15-7 and 3.15-9 indicate that maximum construction emissions during peak construction activities would exceed the regional threshold of NOX emissions during the construction period; and Table 3.15-13 shows that the maximum localized emissions would slightly exceed the localized PM10 localized significance threshold (LST) during the most intense demolition activities of year 1 (month 6) at the nearest residential receptor. Therefore, practices that would minimize air pollution must be employed during project construction.
Reduction of construction emissions would be achieved by two types of actions, including compliance with the requirements of existing SCAQMD rules and regulations and implementation of additional mitigation measures, as follows:

- In addition to SCAQMD Rule 403 requirements, the contractor shall water all excavation/earth-moving activity areas as necessary to remain visibly moist during active operations.
- The contractor shall 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.
- The contractor shall properly tune and maintain construction equipment in accordance with manufacturer’s specifications.
- During construction, the contractor shall 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 during second-stage smog alerts.
- To the extent possible, the contractor shall use construction equipment that is powered by aqueous diesel or alternative fuel sources (e.g., methanol, natural gas, or propane).
- Where feasible, the contractor shall use diesel oxidation catalyst for heavy-duty construction equipment.

To further minimize the impacts associated with emissions of PM and air toxics from construction-related activities, the following mitigation measures would be implemented to the extent practicable.

**Fugitive Dust Source Controls**
The City would require the contractor to:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to active and inactive sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.

**Mobile and Stationary Source Controls**
The City would require the contractor to:

- Reduce use, trips, and unnecessary idling of heavy equipment.
- Maintain and tune engines per manufacturer’s specifications to perform at EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit
technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.

- Prohibit any tampering with engines and adhere to manufacturer’s recommendations.
- Lease new and clean equipment meeting the most stringent of applicable federal and state standards, if practicable.
- Utilize EPA-registered particulate traps and other appropriate controls where suitable to reduce emissions of particulate matter and other pollutants at the construction site.

**Administrative Controls**

The City would:

- Require the contractor to prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.)
- Meet EPA diesel fuel requirements for off-road and on-highway and, where appropriate, use alternative fuels such as natural gas and electric power.
- Develop a construction traffic and parking management plan that minimizes interference and maintains traffic flow as part of the TMP.
- Require the contractor to identify sensitive receptors in the project area and specify the means to minimize impacts to these populations.

### 3.15.5 Climate Change

Climate change is analyzed in Chapter 4, Section 4.8. Neither EPA nor FHWA has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on FHWA’s climate change Web site: [http://www.fhwa.dot.gov/hep/climate/index.htm](http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process – from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision making and improve efficiency at the program level, and it will inform the analysis and stewardship needs of project-level decision making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.
Because there have been more requirements set forth in California legislation and executive orders regarding climate change, the issue is addressed in the CEQA chapter of this environmental document and may be used to inform the NEPA decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hour traveled.

❖ ❖ ❖
3.16 Noise

This section evaluates potential noise and vibration impacts on nearby noise-sensitive areas resulting from the proposed project. The detailed analysis, including input and output data, is contained in the Noise Study Report prepared for this project and Technical Memorandum prepared to validate the original Noise Study Report.84

3.16.1 Regulatory Setting

The National Environmental Policy Act (NEPA) and CEQA provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires a strictly baseline-versus-build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. The rest of this section will focus on the federal 23 CFR 772 noise analysis; please see Chapter 4 of this document for further information on noise analysis under CEQA.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA (and Caltrans, as assigned) involvement, the federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA [A-weighted decibels])85 is lower than the NAC for commercial areas (72 dBA). Table 3.16-1 lists the NAC for use in the NEPA 23 CFR 772 analysis.

Figure 3.16-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

---

85 See Section 3.16.2 - Fundamentals of Noise for a definition of various noise descriptors.
Table 3.16-1
Noise Abatement Criteria

<table>
<thead>
<tr>
<th>Activity Category</th>
<th>NAC, Hourly A-Weighted Noise Level, dBA L_{eq}(h)</th>
<th>Description of Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>57 Exterior</td>
<td>Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.</td>
</tr>
<tr>
<td>B</td>
<td>67 Exterior</td>
<td>Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.</td>
</tr>
<tr>
<td>C</td>
<td>72 Exterior</td>
<td>Developed lands, properties, or activities not included in Categories A or B above.</td>
</tr>
<tr>
<td>D</td>
<td>Undeveloped lands</td>
<td>Undeveloped lands.</td>
</tr>
<tr>
<td>E</td>
<td>52 Interior</td>
<td>Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.</td>
</tr>
</tbody>
</table>

Source: 23 CFR 772.

Figure 3.16-1 Noise Levels of Common Activities
In accordance with the Caltrans’ *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

The Caltrans’ *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5-dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include residents’ acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978, and the cost per benefited residence.

**City of Los Angeles Noise Standards**

The City’s noise criteria/standards are applicable to construction and operation of the proposed project as described below.

**Construction Noise Regulations.** The City’s noise ordinance sets forth noise limits for construction activities. Chapter XI, Article 2, Section 112.05, of the Los Angeles Municipal Code states that noise generated from construction and industrial machinery shall not exceed a maximum of 75 dBA at a distance of 50 ft, except where compliance is technically infeasible. “The burden of proving that compliance is technically infeasible shall be upon the person or persons charged with a violation of this section. Technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or any other noise-reduction device or technique during the operation of the equipment.”

In addition, Section 41.40 of the Los Angeles Municipal Code restricts construction activities during different hours of the day. According to this code, no person shall perform any construction or repair work that makes loud noises that disturbs persons occupying sleeping quarters in any place of residence between the hours of 9:00 p.m. of one day and 7:00 a.m. of the following day. Furthermore, the code prohibits any person other than an individual homeowner engaged in the...
repair or construction of his single-family dwelling from performing any construction or repair work on land occupied by residential buildings, or within 500 ft of land so occupied, before 8:00 a.m. or after 6:00 p.m. on any Saturday or at any time on any Sunday. If a tight project construction schedule would necessitate construction activities to occur outside of the hours allowed by the City’s noise ordinance, then a permit from the Police Commission is required.

**Land-Use Noise Regulations.** Table 3.16-2 lists the City’s noise standards. A violation of these standards would occur if the ambient background noise were exceeded by more than 5 dBA. The ambient noise is measured when the alleged noise source of concern, or that which is to be introduced, is not operating. The standard sets the minimum ambient noise level at 50 dBA during daytime and 40 dBA at night in residential areas, unless measured higher.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Presumed Ambient Noise Levels, dBA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day (7:00 a.m. to 10:00 p.m.)</td>
</tr>
<tr>
<td>Residential, agricultural</td>
<td>50</td>
</tr>
<tr>
<td>Commercial, Public Use</td>
<td>60</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>60</td>
</tr>
<tr>
<td>Heavy manufacturing</td>
<td>65</td>
</tr>
</tbody>
</table>

**Notes:**
- **Noise Limitation:** No equipment or machinery shall be operated in any manner as to create any noise that would cause the noise level at any occupied property to exceed the ambient noise level by more than 5 dB.
- **At the boundary line between two zones,** the presumed ambient noise level of the quieter zone shall be used.
- **Adjustments to Noise Source:**
  - Where the sound alleged to be offending is of a type or character set forth below, the following decibel values shall be the sound level measurement of the offending noise:
    - a. Add 5 dBA to any steady, pure tone with audible fundamental frequency or overtones above 200 Hz.
    - b. Add 5 dBA from any repeated, impulsive noise.
    - c. Subtract 5 dBA from any noise occurring 15 minutes or less in any period of 60 consecutive minutes between the hours of 7:00 a.m. and 10:00 p.m. of any day.


In addition to the above-listed City noise standards, the City also uses the California General Plan’s guidelines for using the community noise equivalent level (CNEL) to assess community noise in determining land use compatibility for future developments, as listed in the *Los Angeles CEQA Thresholds Guide* and shown in Table 3.16-3; however, due to the nature of this proposed project, where potential noise impacts would more likely stem from traffic diversion onto areas along nearby roadways during peak traffic hours from the construction period viaduct closure, Caltrans criteria and the City standards listed in Table 3.16-2, which also satisfy CEQA requirements, would be more appropriate.
Table 3.16-3
Land Use Compatibility Guidelines for Community Noise

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Community Noise Exposure CNEL, dBA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normally Acceptable</td>
</tr>
<tr>
<td>Single-Family, Duplex, Mobile Homes</td>
<td>50 – 60</td>
</tr>
<tr>
<td>Multi-Family Homes</td>
<td>50 – 65</td>
</tr>
<tr>
<td>Schools, Libraries, Churches, Hospitals, Nursing Homes</td>
<td>50 – 70</td>
</tr>
<tr>
<td>Transient Lodging – Motels, Hotels</td>
<td>50 – 65</td>
</tr>
<tr>
<td>Auditoriums, Concert Halls, Amphitheaters</td>
<td>--</td>
</tr>
<tr>
<td>Sports Arena, Outdoors Spectator Sports</td>
<td>--</td>
</tr>
<tr>
<td>Playgrounds, Neighborhood Parks</td>
<td>50 – 70</td>
</tr>
<tr>
<td>Golf Courses, Riding Stables, Water Recreation, Cemeteries</td>
<td>50 – 75</td>
</tr>
<tr>
<td>Office Buildings, Business and Professional Commercial</td>
<td>50 – 70</td>
</tr>
<tr>
<td>Industrial, Manufacturing, Utilities, Agriculture</td>
<td>50 – 75</td>
</tr>
</tbody>
</table>

**Normally Acceptable:** Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

**Conditionally Acceptable:** New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

**Normally Unacceptable:** New construction or development would generally be discouraged. If new construction or development does proceed, then a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

**Clearly Unacceptable:** New construction or development should generally not be undertaken.


Under CEQA, a *substantial noise increase* may result in a significant adverse environmental effect and, if so, must be mitigated or identified as a noise impact for which it is likely that no or only partial abatement measures are available. Per the *Los Angeles CEQA Thresholds Guide*, proposed project operations would normally pose a significant noise impact if they cause the ambient noise level measured at the property line of affected uses to increase by 3 dBA in CNEL to or within the “normally unacceptable” or “clearly unacceptable” category, or any 5 dBA or greater noise increase (see Table 3.16-3).

### 3.16.2 Affected Environment

**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 (L\(_p\)) cannot be added or subtracted by ordinary arithmetic means. When two sounds of equal L\(_p\) are combined, they will produce a combined L\(_p\), which is 3 dB greater than the original individual L\(_p\). 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 L\(_p\) is equal to the higher L\(_p\); in other words, 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 will respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear. In general, the healthy human ear is most sensitive to sounds between 1,000 Hertz (Hz) and 5,000 Hz, and it perceives a sound within that range as being more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of L\(_p\) adjustments is usually applied to the sound level at different frequencies. These adjustments are referred to as a weighting network. The A-scale weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. Noise levels for traffic noise reports are typically reported in terms of dBA. In environmental noise studies, A-weighted sound pressure levels are commonly referred to as noise levels.

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns; others are random. Some noise levels fluctuate rapidly; others fluctuate slowly. Some noise levels vary widely; others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following is a list of the noise descriptors most commonly used in traffic noise analysis:

- **Equivalent Sound Level** (L\(_{eq}\)) – L\(_{eq}\) represents an average of the sound energy occurring over a specified period. L\(_{eq}\) is, in effect, the steady-state sound level that, in a stated period, would contain the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A-weighted equivalent sound level, L\(_{eq}\) (h), is the energy average of the A-weighted sound levels occurring during a 1-hour period.

- **Percentile-Exceeded Sound Level** (L\(_x\)) – L\(_x\) represents the sound level exceeded for a given percentage of a specified period. For example, L\(_{10}\) is the sound level exceeded 10 percent of the time, and L\(_{90}\) is the sound level exceeded 90 percent of the time.

- **Maximum Sound Level** (L\(_{max}\)) – L\(_{max}\) is the highest instantaneous sound level measured during a specified period.
Existing Noise Environment

Noise measurement sites are locations where noise measurements are undertaken to determine existing noise levels and to verify or calibrate computer noise models. These sites are chosen as being representative of similar noise-sensitive receptor sites in the area. Noise-sensitive receptors are locations selected for determining noise impacts. These locations normally represent areas where frequent outdoor human-use occurs or is likely to occur in the foreseeable future (e.g., vacant property for which development plans have received final approval). Locations that are expected to receive the greatest noise impacts, such as the first row of houses from the noise source, are generally chosen. All measurement sites are selected so that there would not be any unusual noises from sources, such as dogs, pool pumps, or children, which could affect the measured levels. It is also desirable to choose sites that are free of major obstructions or contamination.

The 6th Street Viaduct is located in the area zoned for industrial use. Current uses along the corridor on the north and south sides of the viaduct are indoor manufacturing/commercial buildings and parking lots. No noise-sensitive receptors or sensitive land uses are located immediately adjacent to the viaduct. The closest residences to the project site are located approximately 600 ft northeast of the proposed project’s eastern limit near 6th Street and Clarence Street (Figure 3.15-1). Therefore, existing noise measurements were conducted within the community east of the proposed project site, as shown in Figure 3.16-2. Noise measurements for the 6th Street project were conducted in conformance with Caltrans’ Technical Noise Supplement and the guidelines outlined in FHWA’s Measuring of Highway-Related Noise, as well as City procedures outlined in Chapter XI of the Los Angeles Municipal Code.

Table 3.16-4 summarizes the results of the ambient noise measurements at the selected locations. Measurements were conducted during peak traffic hours when traffic was observed to be free flowing; therefore, it was reasonable to assume that the worst hourly noise levels were recorded. Existing peak-hour noise levels were measured between 56 and 78 dBA at receptors that may be affected by traffic diversion resulting from the proposed closure of the 6th Street Viaduct during construction of Alternative 3. Note that these noise levels are generated primarily by existing traffic on respective streets.

Figure 3.16-2 Noise Measurement Locations
### Table 3.16-4
Noise Measurement Results

<table>
<thead>
<tr>
<th>Site Number</th>
<th>Street Address, City</th>
<th>Land Use ¹</th>
<th>Measurement Date</th>
<th>Start Time</th>
<th>Measured L&lt;sub&gt;eq&lt;/sub&gt;², dBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 1</td>
<td>Intersection of 4&lt;sup&gt;th&lt;/sup&gt; Street and South Boyle Avenue</td>
<td>COM</td>
<td>9/12/2007</td>
<td>7:30 am</td>
<td>73</td>
</tr>
<tr>
<td>ST 2</td>
<td>Intersection of 4&lt;sup&gt;th&lt;/sup&gt; Street and Gless Street</td>
<td>SCH</td>
<td>9/12/2007</td>
<td>7:55 am</td>
<td>77</td>
</tr>
<tr>
<td>ST 3</td>
<td>135 South Gless Street</td>
<td>SFR</td>
<td>9/12/2007</td>
<td>8:25 am</td>
<td>58</td>
</tr>
<tr>
<td>ST 4</td>
<td>1939/1933 2&lt;sup&gt;nd&lt;/sup&gt; Street</td>
<td>SCH</td>
<td>9/12/2007</td>
<td>9:00 am</td>
<td>61</td>
</tr>
<tr>
<td>ST 5</td>
<td>300 South St. Louis Street</td>
<td>SFR</td>
<td>9/12/2007</td>
<td>9:30 am</td>
<td>72</td>
</tr>
<tr>
<td>ST 6</td>
<td>600 South St. Louis Street</td>
<td>REC</td>
<td>9/12/2007</td>
<td>9:55 am</td>
<td>67</td>
</tr>
<tr>
<td>ST 7</td>
<td>Intersection at Whittier Boulevard between South Boyle Avenue and Chicago Street</td>
<td>COM</td>
<td>9/12/2007</td>
<td>3:50 pm</td>
<td>76</td>
</tr>
<tr>
<td>ST 8</td>
<td>2100 East 6&lt;sup&gt;th&lt;/sup&gt; Street</td>
<td>MFR</td>
<td>9/12/2007</td>
<td>4:15 pm</td>
<td>62</td>
</tr>
<tr>
<td>ST 9</td>
<td>700 South Soto Street</td>
<td>SFR</td>
<td>9/12/2007</td>
<td>4:45 pm</td>
<td>73</td>
</tr>
<tr>
<td>ST 10</td>
<td>456 South Breed Street</td>
<td>MFR</td>
<td>9/12/2007</td>
<td>5:15 pm</td>
<td>62</td>
</tr>
<tr>
<td>ST 11</td>
<td>919 South Soto Street</td>
<td>SCH</td>
<td>9/13/2007</td>
<td>7:10 am</td>
<td>73</td>
</tr>
<tr>
<td>ST 12</td>
<td>2229 East 2&lt;sup&gt;nd&lt;/sup&gt; Street</td>
<td>SFR</td>
<td>9/13/2007</td>
<td>7:55 am</td>
<td>56</td>
</tr>
<tr>
<td>ST 13</td>
<td>963 South Breed Street</td>
<td>SFR</td>
<td>9/13/2007</td>
<td>9:05 am</td>
<td>61</td>
</tr>
<tr>
<td>ST 14</td>
<td>212 South Boyle Avenue</td>
<td>MFR</td>
<td>9/18/2007</td>
<td>6:46 am</td>
<td>68</td>
</tr>
<tr>
<td>ST 15</td>
<td>Intersection of South Boyle Avenue and I-5 ramp</td>
<td>MFR</td>
<td>9/18/2007</td>
<td>7:22 am</td>
<td>72</td>
</tr>
<tr>
<td>ST 16</td>
<td>201 South Soto Street</td>
<td>MFR</td>
<td>9/18/2007</td>
<td>7:55 am</td>
<td>74</td>
</tr>
<tr>
<td>ST 17</td>
<td>459 South Soto Street</td>
<td>SFR</td>
<td>9/18/2007</td>
<td>8:33 am</td>
<td>78</td>
</tr>
<tr>
<td>ST 18</td>
<td>2422 East 7&lt;sup&gt;th&lt;/sup&gt; Street</td>
<td>MFR</td>
<td>9/18/2007</td>
<td>9:30 am</td>
<td>66</td>
</tr>
<tr>
<td>LT 1&lt;sup&gt;3&lt;/sup&gt;</td>
<td>2112 Inez Street</td>
<td>SFR</td>
<td>9/12/2007</td>
<td>3:27 pm</td>
<td>59</td>
</tr>
</tbody>
</table>

Notes:
¹ SFR – Single-Family Residential; MFR – Multiple-Family Residential; COM – Commercial; REC – Recreation; SCH – School
² All short-term measured noise levels were measured for periods of 20 minutes.
³ Noise level shown is the actual peak-hour noise level during a 24-hour period.


### 3.16.3 Environmental Consequences

#### 3.16.3.1 Construction Impacts

Construction noise is regulated by Caltrans Standard Specifications, Section 7-1.001, Sound Control Requirements. These requirements state that noise levels generated during construction should comply with applicable local, state, and federal requirements. Normally, construction noise levels should not exceed 86 dBA (L<sub>max</sub>) at a distance of 50 ft (15 m). The City of Los Angeles construction noise limit for residences is 75 dBA, L<sub>eq</sub>.

Noise impacts from construction activities for the proposed project are a function of the noise generated by construction equipment, location and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. The degree of construction noise impacts could vary for different areas within the project site depending on the construction activities. For
environmental impact analysis purposes, a construction equipment list for each phase of project construction was developed to calculate the expected level of noise to be generated from equipment operation. A construction noise impact is determined using the construction noise limits set forth by the City of Los Angeles Noise Ordinance (Table 3.16-2).

**Alternative 1 – No Action**

No construction noise impacts would occur as long as the viaduct remains in service. In the event the viaduct was determined unserviceable, the City would seek emergency funding sources to replace it. It is estimated that the time to construct a new viaduct would range between 5 and 7 years from the time it was declared out of service. Noise effects during construction of the new viaduct would be the same as Alternative 3 – Replacement. In addition, the viaduct would have to be closed during construction, resulting in traffic detours similar to Alternative 3, but potentially longer in duration. Traffic noise generated along the detour routes would be similar to the Replacement Alternative.

**Alternative 2 – Retrofit**

**Construction Noise**

Noise levels to be generated from the pool of equipment during each phase of construction were estimated based on the Alternative 3 (Replacement) list of equipment to represent the worst-case scenario. 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. Since the nearest commercial/industrial land uses are located immediately adjacent to the project corridor, the expected construction noise levels at the property lines of these land uses would likely exceed Caltrans recommended 86 dBA (L$_{max}$) at a distance of 50 ft on an occasional basis due to infrequent heavy equipment operations (i.e., only on occasions when the hydraulic hammer or diesel pile driver is operating); however, these commercial/industrial areas 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. Since the closest residences to the viaduct are located 600 ft away, no adverse noise impact would occur. (See calculation results under Alternative 3 – Replacement below to support this statement.)

**Traffic Noise**

Construction of the Retrofit Alternative would not require long-term permanent closure of the viaduct; therefore, noise would result primarily from construction equipment and material hauling activities. This impact is temporary and not unusual for a major public works construction project in an urban area. No adverse noise impacts from vehicular traffic are anticipated.
Alternative 3 – Replacement

Construction Noise

Construction of the proposed project is anticipated to occur over the 4-year construction period. Normally, construction noise differs with various construction activities, and each type of construction activity has its own noise characteristics based on the mix of construction equipment in use. The highest construction noise levels for this proposed project are expected to occur during construction phases involving foundation/substructure, superstructure, and wall and embankment construction activities because these phases of construction require the use of a noisier equipment fleet, such as impact pile drivers (see Table 3.16-5). Noise impacts from these activities would be confined to a relatively narrow corridor extending along both sides of the viaduct and corresponding to the construction sequence. Since the nearest commercial/industrial land uses are located immediately adjacent to the project corridor, the expected construction noise levels at the property lines of these land uses would likely exceed Caltrans recommended 86 dBA ($L_{\text{max}}$) at a distance of 50 ft on an occasional basis due to infrequent heavy equipment operations (i.e., only on occasions when the hydraulic hammer or diesel pile driver is operating); however, these areas 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.

Table 3.16-5

<table>
<thead>
<tr>
<th>Construction Activity Equipment</th>
<th>Number of Equipment Vehicles</th>
<th>Daily Operation Hours</th>
<th>Sound Level at 50 ft</th>
<th>Effective Usage Factor</th>
<th>$L_{\text{eq}}(h)$ at 50 ft</th>
<th>$L_{\text{eq}}(h)$ at Closest Residences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Building Demolition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front End Loader</td>
<td>1</td>
<td>8</td>
<td>75</td>
<td>0.30</td>
<td>70</td>
<td>46</td>
</tr>
<tr>
<td>Dump Truck</td>
<td>2</td>
<td>8</td>
<td>80</td>
<td>0.60</td>
<td>78</td>
<td>54</td>
</tr>
<tr>
<td>Flat Bed Truck</td>
<td>1</td>
<td>8</td>
<td>81</td>
<td>0.30</td>
<td>76</td>
<td>52</td>
</tr>
<tr>
<td>Water Truck</td>
<td>1</td>
<td>8</td>
<td>78</td>
<td>0.30</td>
<td>73</td>
<td>49</td>
</tr>
<tr>
<td>Crane</td>
<td>1</td>
<td>8</td>
<td>81</td>
<td>0.30</td>
<td>76</td>
<td>52</td>
</tr>
<tr>
<td>Excavator with Hydraulic Hammer</td>
<td>1</td>
<td>8</td>
<td>81</td>
<td>0.30</td>
<td>76</td>
<td>52</td>
</tr>
<tr>
<td>Dozer</td>
<td>1</td>
<td>8</td>
<td>80</td>
<td>0.30</td>
<td>75</td>
<td>51</td>
</tr>
<tr>
<td><strong>Overall $L_{\text{eq}}$</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>84</td>
</tr>
<tr>
<td><strong>Existing Viaduct Demolition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>Hydraulic Pulverizer Claw</td>
<td>1</td>
<td>8</td>
<td>83</td>
<td>0.30</td>
<td>78</td>
<td>54</td>
</tr>
<tr>
<td>Crane</td>
<td>1</td>
<td>8</td>
<td>81</td>
<td>0.30</td>
<td>76</td>
<td>52</td>
</tr>
<tr>
<td>Front End Loader</td>
<td>1</td>
<td>8</td>
<td>75</td>
<td>0.30</td>
<td>70</td>
<td>46</td>
</tr>
<tr>
<td>Excavator with Hydraulic Hammer</td>
<td>2</td>
<td>8</td>
<td>90</td>
<td>0.60</td>
<td>88</td>
<td>64</td>
</tr>
<tr>
<td>Dump Truck</td>
<td>2</td>
<td>8</td>
<td>80</td>
<td>0.60</td>
<td>78</td>
<td>54</td>
</tr>
<tr>
<td>Excavator with Hydraulic Thumb</td>
<td>2</td>
<td>8</td>
<td>83</td>
<td>0.60</td>
<td>81</td>
<td>57</td>
</tr>
<tr>
<td><strong>Overall $L_{\text{eq}}$</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>89</td>
</tr>
<tr>
<td><strong>USACE Ramp Demolition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>66</td>
</tr>
<tr>
<td>Front End Loader</td>
<td>1</td>
<td>8</td>
<td>75</td>
<td>0.30</td>
<td>70</td>
<td>46</td>
</tr>
<tr>
<td>Dump Truck</td>
<td>10</td>
<td>8</td>
<td>80</td>
<td>3.00</td>
<td>85</td>
<td>61</td>
</tr>
<tr>
<td>Flat Bed Truck</td>
<td>1</td>
<td>8</td>
<td>81</td>
<td>0.30</td>
<td>76</td>
<td>52</td>
</tr>
<tr>
<td>Water Truck</td>
<td>1</td>
<td>8</td>
<td>78</td>
<td>0.30</td>
<td>73</td>
<td>49</td>
</tr>
<tr>
<td>Crane</td>
<td>1</td>
<td>8</td>
<td>81</td>
<td>0.30</td>
<td>76</td>
<td>52</td>
</tr>
</tbody>
</table>
### Table 3.16-5
Estimated Construction Noise Levels (in dBA)

<table>
<thead>
<tr>
<th>Construction Activity Equipment</th>
<th>Number of Equipment Vehicles</th>
<th>Daily Operation Hours</th>
<th>Sound Level at 50 ft</th>
<th>Effective Usage Factor</th>
<th>L&lt;sub&gt;a&lt;/sub&gt;(h) at 50 ft</th>
<th>L&lt;sub&gt;a&lt;/sub&gt;(h) at Closest Residences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavator with Hydraulic Hammer</td>
<td>1</td>
<td>8</td>
<td>90</td>
<td>0.30</td>
<td>85</td>
<td>61</td>
</tr>
<tr>
<td>Dozer</td>
<td>1</td>
<td>8</td>
<td>80</td>
<td>0.30</td>
<td>75</td>
<td>51</td>
</tr>
<tr>
<td><strong>Overall L&lt;sub&gt;a&lt;/sub&gt;</strong></td>
<td><strong>89</strong></td>
<td><strong>65</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Foundation Construction – Option 1: Pile Driving</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crane</td>
<td>1</td>
<td>8</td>
<td>81</td>
<td>0.30</td>
<td>76</td>
<td>52</td>
</tr>
<tr>
<td>Impact Piling Hammer</td>
<td>1</td>
<td>4</td>
<td>101</td>
<td>0.05</td>
<td>88</td>
<td>64</td>
</tr>
<tr>
<td>Crane – 40 ton</td>
<td>1</td>
<td>4</td>
<td>75</td>
<td>0.15</td>
<td>67</td>
<td>43</td>
</tr>
<tr>
<td><strong>Overall L&lt;sub&gt;a&lt;/sub&gt;</strong></td>
<td><strong>88</strong></td>
<td><strong>65</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Foundation Construction – Option 2: Drilled Shaft</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drill rig/Auger</td>
<td>1</td>
<td>8</td>
<td>80</td>
<td>0.30</td>
<td>75</td>
<td>51</td>
</tr>
<tr>
<td>Crane</td>
<td>1</td>
<td>8</td>
<td>81</td>
<td>0.30</td>
<td>76</td>
<td>52</td>
</tr>
<tr>
<td>Crane – 30 ton</td>
<td>1</td>
<td>4</td>
<td>75</td>
<td>0.15</td>
<td>67</td>
<td>43</td>
</tr>
<tr>
<td>Backhoe</td>
<td>1</td>
<td>4</td>
<td>75</td>
<td>0.15</td>
<td>67</td>
<td>43</td>
</tr>
<tr>
<td>Welder</td>
<td>1</td>
<td>4</td>
<td>73</td>
<td>0.15</td>
<td>65</td>
<td>41</td>
</tr>
<tr>
<td>Air Compressor</td>
<td>1</td>
<td>8</td>
<td>65</td>
<td>0.30</td>
<td>60</td>
<td>36</td>
</tr>
<tr>
<td><strong>Overall L&lt;sub&gt;a&lt;/sub&gt;</strong></td>
<td><strong>79</strong></td>
<td><strong>56</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Footing Construction</strong></td>
<td><strong>78</strong></td>
<td><strong>54</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Column Construction</strong></td>
<td><strong>78</strong></td>
<td><strong>55</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Balanced Cantilever Erection</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crane - 275 ton</td>
<td>2</td>
<td>8</td>
<td>84</td>
<td>0.60</td>
<td>82</td>
<td>58</td>
</tr>
<tr>
<td>Crane – 140 ton</td>
<td>3</td>
<td>8</td>
<td>81</td>
<td>0.90</td>
<td>81</td>
<td>57</td>
</tr>
<tr>
<td>Crane - 30</td>
<td>3</td>
<td>8</td>
<td>75</td>
<td>0.90</td>
<td>75</td>
<td>51</td>
</tr>
<tr>
<td>Electric Generators</td>
<td>2</td>
<td>8</td>
<td>70</td>
<td>0.60</td>
<td>68</td>
<td>44</td>
</tr>
<tr>
<td>Concrete Pump</td>
<td>2</td>
<td>2</td>
<td>77</td>
<td>0.15</td>
<td>69</td>
<td>45</td>
</tr>
<tr>
<td>Ready-mix Concrete Trucks</td>
<td>2</td>
<td>2</td>
<td>85</td>
<td>0.15</td>
<td>77</td>
<td>53</td>
</tr>
<tr>
<td>Backhoe</td>
<td>5</td>
<td>4</td>
<td>75</td>
<td>0.75</td>
<td>74</td>
<td>50</td>
</tr>
<tr>
<td><strong>Overall L&lt;sub&gt;a&lt;/sub&gt;</strong></td>
<td><strong>86</strong></td>
<td><strong>62</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AC, Base, Curb &amp; Gutter &amp; Sidewalk Removal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front End Loader</td>
<td>1</td>
<td>8</td>
<td>75</td>
<td>0.30</td>
<td>70</td>
<td>46</td>
</tr>
<tr>
<td>Dump Truck</td>
<td>2</td>
<td>8</td>
<td>80</td>
<td>0.60</td>
<td>78</td>
<td>54</td>
</tr>
<tr>
<td>Flat Bed Truck</td>
<td>1</td>
<td>8</td>
<td>81</td>
<td>0.30</td>
<td>76</td>
<td>52</td>
</tr>
<tr>
<td>Water Truck</td>
<td>1</td>
<td>8</td>
<td>78</td>
<td>0.30</td>
<td>73</td>
<td>49</td>
</tr>
<tr>
<td><strong>Overall L&lt;sub&gt;a&lt;/sub&gt;</strong></td>
<td><strong>81</strong></td>
<td><strong>57</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wall and Embankment Construction – Option 1: Proprietary Wall and Embankment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backhoe</td>
<td>2</td>
<td>8</td>
<td>75</td>
<td>0.60</td>
<td>73</td>
<td>49</td>
</tr>
<tr>
<td>Front End Loader</td>
<td>2</td>
<td>8</td>
<td>75</td>
<td>0.60</td>
<td>73</td>
<td>49</td>
</tr>
<tr>
<td>Plate Compactor</td>
<td>4</td>
<td>4</td>
<td>75</td>
<td>0.60</td>
<td>73</td>
<td>49</td>
</tr>
<tr>
<td>Dump Truck</td>
<td>6</td>
<td>8</td>
<td>80</td>
<td>1.80</td>
<td>83</td>
<td>59</td>
</tr>
<tr>
<td>Water Truck</td>
<td>1</td>
<td>2</td>
<td>78</td>
<td>0.08</td>
<td>67</td>
<td>43</td>
</tr>
<tr>
<td>Hand Compactor – 5hp</td>
<td>2</td>
<td>2</td>
<td>75</td>
<td>0.15</td>
<td>67</td>
<td>43</td>
</tr>
<tr>
<td>Steel Roller – 20 ton</td>
<td>2</td>
<td>8</td>
<td>76</td>
<td>0.60</td>
<td>74</td>
<td>50</td>
</tr>
<tr>
<td><strong>Overall L&lt;sub&gt;a&lt;/sub&gt;</strong></td>
<td><strong>84</strong></td>
<td><strong>61</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wall and Embankment Construction – Option 2: Concrete Reinforcing Wall on Steel Pile Foundation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
To assess noise impacts to the nearest residences from the 6th Street Viaduct, noise levels at these locations (6th Street/Whittier Boulevard and St. Louis Street) were calculated, as shown in Table 3.16-5. In computing the \( L_{eq} \) for equipment noise, it was assumed that the equipment would be operating at, or near, maximum sound levels 30 percent of the time during operation, except for the impact pile driver, for which 10 percent was assumed. All construction activities were assumed to be occurring daily during daytime hours, within which the construction noise limit is 75 dBA. It was assumed that no construction activity would occur on Sundays and holidays. If it became necessary to operate outside of the listed hours due to scheduling constraints, then a variance must be approved by the City.

Based on the results of construction noise prediction, overall noise levels expected at the closest residences, which are located to the east of the project site near 6th Street/Whittier Boulevard and St. Louis Street, during each of the construction phases/activities would range between 54 and 66 dBA. These expected noise levels would not exceed the City’s construction noise limit of 75 dBA.
dB; therefore, adverse noise impacts from construction activities are not anticipated on residents living closest to the project site.

Construction of any alignment alternative or bridge concept would have similar noise effects on local businesses situated immediately adjacent to the bridge. Selection of different alignment alternatives may result in different levels of noise impacts to the remaining businesses depending on the distance between the construction zone and the first row of buildings; however, the area is industrial/commercial, and the impact from any alignment would not be substantial.

**Traffic Noise**

Implementation of the proposed replacement alternatives would require closure of the 6th Street Viaduct during the 4-year construction period between 2014 and 2017, and traffic diversion would occur on nearby roadways where residential communities are located. Noise impacts from anticipated traffic diversion were evaluated to satisfy CEQA requirements. Traffic noise modeling was conducted along major roadways where sensitive receptors could be potentially affected by the increased traffic noise levels. The street detour segments contained in the noise modeling area are bound by Central Avenue and Soto Street on the west and east, respectively, and 1st and 7th Streets on the north and south, respectively (see Figure 3.16-2). The expected traffic diversion distributions within the study area during the proposed project construction period are shown in Figure 3.7-1 of Section 3.7, Traffic and Transportation/Pedestrian Facilities, of this EIR/EIS.

Noise levels were modeled along various roadways throughout the study area for existing year 2007, opening year 2018, and future design year 2038, using the FHWA traffic noise model, TNM 2.5. Comparisons of these noise levels would reveal any adverse noise effects on the community where traffic would be diverted during the construction period. The detailed traffic modeling input and output data are presented in the Noise Study Report for this project.

Tables 3.16-6 through 3.16-8 present the modeled noise levels along various street segments throughout the study area for the existing condition, Year 2018, and Year 2038. Note that noise levels for Year 2018 were modeled two ways: (1) representing conditions with the viaduct open, which is equivalent to the No Action Alternative, and (2) conditions when the viaduct is closed, which is equivalent to the worst-case construction scenario (year 4 of construction) when volumes would be highest due to normal annual growth. Comparisons of these noise levels would reveal any adverse noise effects on the community where traffic from the proposed project construction would be diverted.


### Table 3.16-6
Traffic Noise Modeling Results – Year 2007 (Existing Condition)

<table>
<thead>
<tr>
<th>Street</th>
<th>Segment and Intersection # (see Location of Intersection in Figure 3.7-1)</th>
<th>Land Use</th>
<th>Predicted Hourly Noise Level $L_{eq}$ (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th Street</td>
<td>Soto Street (6) to Boyle Avenue (22)</td>
<td>Commercial</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (22) to US 101 NB on-ramp (21)</td>
<td>Commercial</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>US 101 NB on-ramp (21) to Mateo Street (7)</td>
<td>Industrial</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Mateo Street (7) to Alameda Street (4)</td>
<td>Industrial</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Alameda Street (4) to Central Avenue (30)</td>
<td>Industrial</td>
<td>70</td>
</tr>
<tr>
<td>1st Street</td>
<td>Soto Street (25) to Boyle Avenue (17)</td>
<td>Commercial</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (17) to US 101 NB on/off-ramps (12)</td>
<td>Commercial</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>US 101 NB on/off-ramps (12) to SB on/off-ramps (11)</td>
<td>Commercial</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>US 101 SB on/off-ramps (11) to Alameda Street (1)</td>
<td>Residential</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Alameda Street (1) to Central Avenue (27)</td>
<td>Commercial</td>
<td>71</td>
</tr>
<tr>
<td>4th Street</td>
<td>Soto Street (26) to I-5 NB on/off-ramps/Cummings Street (20)</td>
<td>Commercial, Residential</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>I-5 NB on/off-ramps/Cummings Street (20) to SB on/off-ramps (19)</td>
<td>Residential</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>I-5 SB on/off-ramps/Cummings Street (19) to Boyle Avenue (18)</td>
<td>Residential</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (18) to US 101 NB off-ramp (15)</td>
<td>Residential</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>US 101 NB off-ramp (15) to SB off-ramp (14)</td>
<td>Residential</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>US 101 SB off-ramp (14) to Pecan Street/US 101 SB on-ramp (13)</td>
<td>Residential</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Pecan Street/US 101 SB on-ramp (13) to Alameda Street (2)</td>
<td>Residential</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>Alameda Street to Central Avenue, EB: (2) to (3), WB: (2) to (28)</td>
<td>Residential</td>
<td>73</td>
</tr>
<tr>
<td>7th Street</td>
<td>Soto Street (16) to Boyle Avenue (23)</td>
<td>Residential</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (23) to Santa Fe Avenue (10)</td>
<td>Residential</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Santa Fe Avenue (10) to Mateo Street (8)</td>
<td>Residential</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Mateo Street (8) to Alameda Street (5)</td>
<td>Residential</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Alameda Street (5) to Central Avenue (31)</td>
<td>Residential</td>
<td>71</td>
</tr>
<tr>
<td>Central Ave</td>
<td>1st Street (27) to 3rd Street (28)</td>
<td>Commercial</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>3rd Street (28) to 4th Street (29)</td>
<td>Industrial</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>4th Street (29) to 6th Street (30)</td>
<td>Industrial</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>6th Street (30) to 7th Street (31)</td>
<td>Industrial</td>
<td>67</td>
</tr>
<tr>
<td>Alameda Ave</td>
<td>1st Street (1) to 3rd Street (2)</td>
<td>Commercial</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>3rd Street (2) to 4th Street (3)</td>
<td>Industrial</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>4th Street (3) to 6th Street (4)</td>
<td>Industrial</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>6th Street (4) to 7th Street (5)</td>
<td>Industrial</td>
<td>71</td>
</tr>
<tr>
<td>Mateo St</td>
<td>6th Street (7) to 7th Street (8)</td>
<td>Industrial</td>
<td>62</td>
</tr>
<tr>
<td>Santa Fe Ave</td>
<td>6th Street/Frontage Road (9) to 7th Street (10)</td>
<td>Industrial</td>
<td>65</td>
</tr>
<tr>
<td>Boyle Ave</td>
<td>1st Street (17) to 4th Street (18)</td>
<td>Residential</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>4th Street (18) to 6th Street (22)</td>
<td>Residential</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>6th Street (22) to 7th Street (23)</td>
<td>Residential</td>
<td>68</td>
</tr>
<tr>
<td>Soto St</td>
<td>1st Street (25) to 4th Street (26)</td>
<td>Residential</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>4th Street (26) to 6th Street/Whittier Boulevard (6)</td>
<td>Residential</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>6th Street/Whittier Boulevard (6) to 7th Street (16)</td>
<td>Industrial</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>7th Street (16) to SR 60 EB on-ramp (24)</td>
<td>Residential</td>
<td>71</td>
</tr>
</tbody>
</table>

Note: Numbers in parenthesis denote the Study Intersection Number shown on Figure 3.17-1. EB: eastbound; NB: northbound; SB: southbound; WB: westbound.

<table>
<thead>
<tr>
<th>Street</th>
<th>Segment and Intersection # (see Figure 3.7-1 for Location)</th>
<th>Land Use</th>
<th>Hourly Noise Level $L_{eq}$ (dBA) Viaduct Open</th>
<th>Noise Level Increase/Decrease during Closed Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th Street</td>
<td>Soto Street (6) to Boyle Avenue (22)</td>
<td>Commercial</td>
<td>68 (66)</td>
<td>-2</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (22) to US 101 NB on-ramp (21)</td>
<td>Commercial</td>
<td>70 (62)</td>
<td>-8</td>
</tr>
<tr>
<td></td>
<td>US 101 NB on-ramp (21) to Mateo Street (7)</td>
<td>Industrial</td>
<td>69 (49)</td>
<td>-20</td>
</tr>
<tr>
<td></td>
<td>Mateo Street (7) to Alameda Street (4)</td>
<td>Industrial</td>
<td>69 (61)</td>
<td>-8</td>
</tr>
<tr>
<td></td>
<td>Alameda Street (4) to Central Avenue (30)</td>
<td>Industrial</td>
<td>70 (67)</td>
<td>-3</td>
</tr>
<tr>
<td>1st Street</td>
<td>Soto Street (25) to Boyle Avenue (17)</td>
<td>Commercial</td>
<td>69 (69)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (17) to US 101 NB on-off-ramps (12)</td>
<td>Commercial</td>
<td>69 (69)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>US 101 NB on-off-ramps (12) to SB on-off-ramps (11)</td>
<td>Commercial</td>
<td>71 (71)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>US 101 SB on-off-ramps (11) to Alameda Street (1)</td>
<td>Residential</td>
<td>72 (73)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Alameda Street (1) to Central Avenue (27)</td>
<td>Commercial</td>
<td>72 (72)</td>
<td>0</td>
</tr>
<tr>
<td>4th Street</td>
<td>Soto Street (26) to I-5 NB on-off-ramps/Cummings Street (20)</td>
<td>Commercial, Residential</td>
<td>73 (73)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1-5 NB on-off-ramps/Cummings Street (20) to SB on-off-ramps (19)</td>
<td>Residential</td>
<td>72 (73)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1-5 SB on-off-ramps (19) to Boyle Avenue (18)</td>
<td>Residential</td>
<td>72 (72)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (18) to US 101 NB off-ramp (15)</td>
<td>Residential</td>
<td>72 (72)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>US 101 NB off-ramp (15) to SB off-ramp (14)</td>
<td>Residential</td>
<td>73 (73)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>US 101 SB off-ramp (14) to Pecan Street/US 101 SB on-ramp (13)</td>
<td>Residential</td>
<td>73 (73)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Pecan Street/US 101 SB on-ramp (13) to Alameda Street (2)</td>
<td>Residential</td>
<td>74 (73)</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>Alameda Street to Central Avenue, EB: (29) to (3), WB: (2) to (28)</td>
<td>Residential</td>
<td>73 (74)</td>
<td>1</td>
</tr>
<tr>
<td>7th Street</td>
<td>Soto Street (16) to Boyle Avenue (23)</td>
<td>Residential</td>
<td>70 (72)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (23) to Santa Fe Avenue (10)</td>
<td>Residential</td>
<td>70 (73)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Santa Fe Avenue (10) to Mateo Street (8)</td>
<td>Residential</td>
<td>71 (73)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Mateo Street (8) to Alameda Street (5)</td>
<td>Residential</td>
<td>71 (73)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Alameda Street (5) to Central Avenue (31)</td>
<td>Residential</td>
<td>71 (72)</td>
<td>1</td>
</tr>
<tr>
<td>Central Avenue</td>
<td>1st Street (27) to 3rd Street (28)</td>
<td>Commercial</td>
<td>65 (65)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3rd Street (28) to 4th Street (29)</td>
<td>Industrial</td>
<td>66 (65)</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>4th Street (29) to 6th Street (30)</td>
<td>Industrial</td>
<td>67 (67)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6th Street (30) to 7th Street (31)</td>
<td>Industrial</td>
<td>67 (67)</td>
<td>0</td>
</tr>
<tr>
<td>Alameda Street</td>
<td>1st Street (1) to 3rd Street (2)</td>
<td>Commercial</td>
<td>70 (70)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3rd Street (2) to 4th Street (3)</td>
<td>Industrial</td>
<td>70 (70)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4th Street (3) to 6th Street (4)</td>
<td>Industrial</td>
<td>71 (71)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6th Street (4) to 7th Street (5)</td>
<td>Industrial</td>
<td>71 (71)</td>
<td>0</td>
</tr>
<tr>
<td>Mateo Street</td>
<td>6th Street (7) to 7th Street (8)</td>
<td>Industrial</td>
<td>63 (63)</td>
<td>0</td>
</tr>
<tr>
<td>Santa Fe Avenue</td>
<td>6th Street/Frontage Road (9) to 7th Street (10)</td>
<td>Industrial</td>
<td>65 (65)</td>
<td>0</td>
</tr>
<tr>
<td>Boyle Avenue</td>
<td>1st Street (17) to 4th Street (18)</td>
<td>Residential</td>
<td>66 (66)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4th Street (18) to 6th Street (22)</td>
<td>Residential</td>
<td>68 (68)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6th Street (22) to 7th Street (23)</td>
<td>Residential</td>
<td>68 (68)</td>
<td>0</td>
</tr>
<tr>
<td>Soto Street</td>
<td>1st Street (25) to 4th Street (26)</td>
<td>Residential</td>
<td>72 (72)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4th Street (26) to 6th Street/Whittier Boulevard(6)</td>
<td>Residential</td>
<td>72 (72)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6th Street/Whittier Boulevard(6) to 7th Street (16)</td>
<td>Industrial</td>
<td>69 (70)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>7th Street (16) to SR 60 EB on-ramp (24)</td>
<td>Residential</td>
<td>71 (71)</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Numbers in parenthesis denote the Study Intersection Number shown on Figure 3.17-1.

## Table 3.16-8

<table>
<thead>
<tr>
<th>Street</th>
<th>Segment and Intersection # (see Location of Intersection in Figure 3.7-1)</th>
<th>Land Use</th>
<th>2007 Hourly Noise Level $L_{eq}$ (dBA)</th>
<th>2038 Hourly Noise Level $L_{eq}$ (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th Street</td>
<td>Soto Street (6) to Boyle Avenue (22)</td>
<td>Commercial</td>
<td>68</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (22) to US 101 NB on-ramp (21)</td>
<td>Commercial</td>
<td>69</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>US 101 NB on-ramp (21) to Mateo Street (7)</td>
<td>Industrial</td>
<td>69</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Mateo Street (7) to Alameda Street (4)</td>
<td>Industrial</td>
<td>68</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Alameda Street (4) to Central Avenue (30)</td>
<td>Industrial</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>1st Street</td>
<td>Soto Street (25) to Boyle Avenue (17)</td>
<td>Commercial</td>
<td>68</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (17) to US 101 NB on/-off-ramps (12)</td>
<td>Commercial</td>
<td>69</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>US 101 NB on/-off-ramps (12) to SB on/-off-ramps (11)</td>
<td>Commercial</td>
<td>70</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>US 101 SB on/-off-ramps (11) to Alameda Street (1)</td>
<td>Residential</td>
<td>72</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>Alameda Street (1) to Central Avenue (27)</td>
<td>Commercial</td>
<td>71</td>
<td>73</td>
</tr>
<tr>
<td>4th Street</td>
<td>Soto Street (26) to I-5 NB on/-off-ramps/ Cummings Street (20)</td>
<td>Commercial, Residential</td>
<td>72</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>I-5 NB on/-off-ramps/Cummings Street (20) to SB on/-off-ramps (19)</td>
<td>Residential</td>
<td>72</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>I-5 SB on/-off-ramps (19) to Boyle Avenue (18)</td>
<td>Residential</td>
<td>71</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (18) to US 101 NB off-ramp (15)</td>
<td>Residential</td>
<td>71</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>US 101 NB off-ramp (15) to SB off-ramp (14)</td>
<td>Residential</td>
<td>72</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>US 101 SB off-ramp (14) to Pecan Street/US 101 SB on-ramp (13)</td>
<td>Residential</td>
<td>72</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>Pecan Street/US 101 SB on-ramp (13) to Alameda Street (2)</td>
<td>Residential</td>
<td>73</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>Alameda Street to Central Avenue, EB: (29) to (3), WB: (2) to (28)</td>
<td>Residential</td>
<td>73</td>
<td>74</td>
</tr>
<tr>
<td>7th Street</td>
<td>Soto Street (16) to Boyle Avenue (23)</td>
<td>Residential</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Boyle Avenue (23) to Santa Fe Avenue (10)</td>
<td>Residential</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Santa Fe Avenue (10) to Mateo Street (8)</td>
<td>Residential</td>
<td>71</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Mateo Street (8) to Alameda Street (5)</td>
<td>Residential</td>
<td>71</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Alameda Street (5) to Central Avenue (31)</td>
<td>Residential</td>
<td>71</td>
<td>72</td>
</tr>
<tr>
<td>Central Avenue</td>
<td>1st Street (27) to 3rd Street (28)</td>
<td>Commercial</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>3rd Street (28) to 4th Street (29)</td>
<td>Industrial</td>
<td>65</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>4th Street (29) to 6th Street (30)</td>
<td>Industrial</td>
<td>67</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>6th Street (30) to 7th Street (31)</td>
<td>Industrial</td>
<td>67</td>
<td>68</td>
</tr>
<tr>
<td>Alameda Street</td>
<td>1st Street (1) to 3rd Street (2)</td>
<td>Commercial</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>3rd Street (2) to 4th Street (3)</td>
<td>Industrial</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>4th Street (3) to 6th Street (4)</td>
<td>Industrial</td>
<td>70</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>6th Street (4) to 7th Street (5)</td>
<td>Industrial</td>
<td>71</td>
<td>72</td>
</tr>
<tr>
<td>Mateo Street</td>
<td>6th Street (7) to 7th Street (8)</td>
<td>Industrial</td>
<td>62</td>
<td>63</td>
</tr>
<tr>
<td>Santa Fe Avenue</td>
<td>6th Street/Frontage Road (9) to 7th Street (10)</td>
<td>Industrial</td>
<td>65</td>
<td>66</td>
</tr>
<tr>
<td>Boyle Avenue</td>
<td>1st Street (17) to 4th Street (18)</td>
<td>Residential</td>
<td>66</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>4th Street (18) to 6th Street (22)</td>
<td>Residential</td>
<td>68</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>6th Street (22) to 7th Street (23)</td>
<td>Residential</td>
<td>68</td>
<td>69</td>
</tr>
<tr>
<td>Soto Street</td>
<td>1st Street (25) to 4th Street (26)</td>
<td>Residential</td>
<td>71</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>4th Street (26) to 6th Street/Whittier Boulevard (6)</td>
<td>Residential</td>
<td>72</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>6th Street/Whittier Boulevard (6) to 7th Street (16)</td>
<td>Industrial</td>
<td>69</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>7th Street (16) to SR 60 EB on-ramp (24)</td>
<td>Residential</td>
<td>71</td>
<td>72</td>
</tr>
</tbody>
</table>

Note: Numbers in parenthesis denote the Study Intersection Number shown on Figure 3.17-1.

EB: eastbound; NB: northbound; SB: southbound; WB: westbound

As shown in Table 3.16-7, during the construction period, represented by year 2018 when the 6th Street Viaduct would be closed and traffic would be diverted to surrounding surface streets, the resulting noise levels are higher. Because the traffic would be dispersed along the proposed detour routes, the increase in noise levels along most affected street segments modeled was found to be not substantial—typically no more than 1 or 2 dBA; several would experience no increase; and only one segment, 7th Street between Boyle and Santa Fe Avenues, would be expected to incur a 3-dBA increase. Since the noise-level increase along the potentially affected roadways would be less than 5 dB (as allowed by City ordinance) no impact is expected to result from the detoured traffic dispersion during the anticipated 4-year construction period.

When comparing the predicted future (2038) noise levels associated with the proposed project to the existing noise levels, the noise level increase would not be more than 2 dB in all roadway segments under study. This would not constitute a “substantial increase” as defined under the Caltrans protocol (i.e., an increase of 12 dBA). Furthermore, the increases would be due to natural traffic growth, since there is no project-induced increase. In addition, since the projected noise-level increase along the potentially affected roadways would be less than 5 dB, as allowed by City ordinance, no adverse noise impact is expected to occur along City streets.

The level of traffic noise impacts would be the same for any bridge concept or alignment alternative.

**Construction Vibration Impacts**

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations that diminish in strength with distance. Construction vibration varies greatly depending on the construction phases, type and condition of equipment used, and layout of the construction site.

Construction vibration levels are governed primarily by the heaviest pieces of equipment, such as impact pile drivers and pavement breakers. Table 3.16-9 lists the various types of construction equipment anticipated for this project and typical vibration levels of the equipment at various distances in peak particle velocity (PPV) levels. Since the construction equipment is mobile, the intensities of vibration perceived would vary greatly depending on the spatial relationship between the source and the receiver. The worst vibration impacts would generally occur during demolition and viaduct foundation construction activities involving pavement breakers and pile drivers, respectively.
Table 3.16-9
Typical Construction Equipment Vibration Levels

<table>
<thead>
<tr>
<th>Construction Equipment</th>
<th>Peak Particle Velocity at Distance, PPV (inch/second)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25 feet (8 meters)</td>
</tr>
<tr>
<td>Concrete Pump</td>
<td>0.05</td>
</tr>
<tr>
<td>Crane</td>
<td>0.05</td>
</tr>
<tr>
<td>Excavator</td>
<td>0.107</td>
</tr>
<tr>
<td>Front End Loader</td>
<td>0.03</td>
</tr>
<tr>
<td>Impact Pile Driver</td>
<td>1.518</td>
</tr>
<tr>
<td>Pavement Breaker</td>
<td>0.622</td>
</tr>
<tr>
<td>Soil Auger</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Source: Parsons, February 2009.

The Federal Railroad Administration (FRA) provides ground-borne vibration impact criteria for various types of building uses. FRA provides a vibration damage threshold criterion of 0.50-inch/second PPV for fragile buildings and 0.12-inch/second PPV for extremely fragile historic buildings for typical construction equipment. FRA recommends that these criteria be used as a damage threshold for the fragile structures located near the right-of-way of a transit project.

With the current estimated construction equipment list, the highest vibration levels would be caused by the impact pile driver, which would be operational during substructure construction. Since no historic buildings are located within 50 ft of the proposed construction site, no adverse impacts from construction vibration are expected to occur even during impact pile driving activity, which would generate the highest vibration level among the various pieces of equipment during construction.

The level of vibration impacts would be the same for any bridge concept or alignment alternative.

3.16.3.2 Permanent Impacts

Alternative 1 – No Action

No long-term noise impacts would occur under this alternative as long as the viaduct remains in service. Traffic noise at the horizon year (2038) would be increased as a result of natural traffic growth, as shown in Table 3.16-8.

In the event the viaduct was determined to be unserviceable, the City would seek emergency funding to replace it. It is anticipated that the City would use a viaduct design similar to

---

90 USDOT, 1998.
Alternative 3 – Replacement. Noise impacts under this scenario would be similar to Alternative 3.

**Alternative 2 – Retrofit**
No long-term noise impacts would occur once the retrofit construction is complete. Traffic noise at the horizon year (2038) would be increased as a result of natural traffic growth, as shown in Table 3.16-8.

**Alternative 3 – Replacement**
None of the alternative bridge concepts or alignments would add traffic lanes or increase operating capacity of the 6th Street Viaduct; therefore, noise levels for the 2038 design year would be essentially the same as Alternative 2, as shown in Table 3.16-8. If compared to the Caltrans requirements and NAC, noise levels along various surrounding roadway segments within the study area are expected to approach or exceed the NAC. It should be noted, however, that even under the existing condition, the noise levels are predominantly generated by traffic on the surrounding local streets that are not associated with the proposed project (see Table 3.16-4).

**3.16.3.3 Indirect Impacts**
There would be no indirect noise impacts as long as the viaduct remains in service (Alternative 1) or is undergoing retrofit (Alternative 2). Construction of the new viaduct under Alternative 3 – Replacement would trigger traffic detours as a result of viaduct closure. Traffic noise related impacts along the detour route are assessed in Section 3.16.3.1 above.

Under Alternative 1 – No Action, if the viaduct was determined to be unserviceable, the City would have to seek emergency funding to replace it. The viaduct would have to be closed and traffic detours would occur. Traffic noise related impacts along the detour route would be similar to Alternative 3, but for a longer period of time.

**3.16.4 Avoidance, Minimization, and Mitigation Measures**

**Alternative 1 – No Action**
No mitigation is required as long as the viaduct remains in service. If the viaduct was determined unserviceable, the City would seek emergency funding sources to replace it. Minimization measures during viaduct construction would be the same as for Alternatives 2 and 3.

**Alternatives 2 and 3**
Because no long-term traffic associated operational noise impacts are anticipated as a result of proposed project implementation, no abatement measures would be required.

No construction noise impacts have been identified for the proposed project; however, to be proactive in minimizing the noise and vibration effects of the construction activities, the
following measures would be implemented at commercial/industrial land uses located immediately adjacent to the viaduct during periods of construction:

**Equipment Noise Control**
- 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).
- Utilize construction methods or equipment that would provide the lowest level of noise and ground vibration impact, such as alternative low-noise pile installation methods.
- Turn off idling equipment.

**Administrative Measures**
- Implement a construction noise and/or vibration monitoring program to limit noise effects.
- Comply with relevant noise ordinance sections of the City of Los Angeles. The City imposes a limit on noise generated by construction activities, as well as specific hours during which construction activities shall not occur.
- Limit construction activities to daytime hours. If nighttime construction is necessary, then the proper permits and variances would be obtained.
- Comply with the Traffic Management Plan (TMP) on designated construction routes to avoid or minimize impacts on noise-sensitive receptors located in areas of close proximity to the project site.
- Keep noise levels relatively uniform and avoid impulsive noises.
- Maintain good public relations with the community to minimize objections to the unavoidable construction noise. Provide frequent activity updates of all construction activities and schedules.
- A combination of the aforementioned abatement/mitigation techniques with equipment noise control and administrative measures could be selected to provide the most effective means to minimize the effects of the construction activity. Application of these abatement/mitigation measures would help reduce construction-related noise effects; however, a temporary increase in noise and vibration over the existing ambient levels may still occur.
3.17 Energy

3.17.1 Regulatory Setting
The CEQA Guidelines, Energy Conservation, state that EIRs are required to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

NEPA (42 U.S.C. Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

3.17.2 Affected Environment
California’s major sources of energy include electricity, natural gas, and crude oil. Much of the energy consumed in the state is for residential, commercial, and transportation purposes. The California Energy Commission (CEC) tracks and forecasts energy use according to CEC forecast regions. Most of the electric energy used in southern California is imported to the region from coal-fire and hydroelectric generating facilities located elsewhere in California and out of state. Utilities in southern California participate in power-sharing arrangements with other entities throughout the western United States. Electric energy within the project area is provided by the LADWP distribution networks.

Energy consumption associated with transportation activities is almost entirely related to the consumption of fossil fuel (i.e., gasoline and diesel). The CEC has released the Transportation Energy Forecasts and Analyses for the 2009 Integrated Energy Policy Report in May 2010. According to this report, the total gasoline fuel consumption in California for Year 2007 was 15.7 billion gallons, and the diesel fuel consumption was 3.8 billion gallons. The current recession has had a significant impact on the state's transportation sector. California's average daily gasoline sales for the first 6 months of 2009 were 1 percent lower than the same period in 2008, continuing a reduction in demand observed since 2004. Daily diesel fuel sales for the first 6 months of 2009 were 8.4 percent lower than the same period in 2008, continuing a declining trend since 2007.

Between 2007 and 2030, CEC staff estimate that total annual gasoline consumption in California will fall 13.3 percent in the low-demand case to 13.57 billion gallons, largely as a result of high fuel prices, efficiency gains, and competing fuel technologies. In the high-demand case, the recovering economy and lower relative prices lead to a gasoline demand peak in 2014 of 16.40 billion gallons before consumption falls to a 2030 level of 14.32 billion gallons, 8.5 percent below 2007 levels. During the same period, CEC staff expect total diesel demand in California to increase 35 percent in the low-demand case to 5.138 billion gallons and 42 percent in the high demand case to 5.399 billion gallons.
3.17.3 Environmental Consequences

3.17.3.1 Construction Impacts

**Alternative 1 – No Action**

There would be no construction impact to energy resources under this alternative as long as the viaduct remains in service. If the viaduct was determined unserviceable, the City would seek emergency funding sources to replace it. Under this circumstance, construction impacts related to energy would be the same as described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**

Construction of this alternative would require one-time energy consumption to manufacture building materials for viaduct retrofit. This consumption would be required to improve public safety, and the consumption rate would not cause a substantial depletion in the supplies of nonrenewable energy resources.

**Alternative 3 – Replacement**

Construction of this alternative would require one-time energy consumption to manufacture building materials and construct the viaduct. This consumption would be required to improve public safety, and the consumption rate would not cause a substantial depletion in the supplies of nonrenewable energy resources.

3.17.3.2 Permanent Impacts

**Alternative 1 – No Action**

There would be no long-term impact to energy resources under this alternative as long as the viaduct remains in service. If the viaduct was determined unserviceable, the City would seek emergency funding sources to replace it. Under this circumstance, long-term impacts related to energy would be the same as described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**

There would be no long-term impact to energy resources under this alternative.

**Alternative 3 – Replacement**

Additional lighting would be installed on the new viaduct. The electrical power required for this new lighting would be provided by LADWP, and the consumption rate would not cause a substantial depletion in the supplies of the nonrenewable resources.

The proposed replacement alternative would not add traffic lanes; therefore, no substantial increase in vehicular traffic volumes beyond natural growth is anticipated. No long-term effect to fuel consumption from Alternative 3 is expected.
3.17.3.3 Indirect Impacts
No indirect impacts were identified.

3.17.4 Avoidance, Minimization, and Mitigation Measures

Alternative 1 – No Action
No mitigation is required.

Alternative 2 – Retrofit
No mitigation is required.

Alternative 3 – Replacement
No mitigation is required.
PART III – BIOLOGICAL ENVIRONMENT

This section discusses potential impacts to biological resources within the project area as a result of proposed project implementation. The information presented in this section is excerpted from the Natural Environment Study (NES) conducted for this project.91

A project biologist and botanist conducted a general plant and wildlife survey on May 4, 2007, by walking and driving throughout the study area, utilizing binoculars when necessary. The biological study area (BSA) is similar to the APE designated for the historical and archaeological study. The California Native Plant Society’s (CNPS) Inventory of Rare and Endangered Vascular Plants of California92 and the California Department of Fish and Game’s (CDFG) California Natural Diversity Database93 were reviewed prior to the field survey to identify special-status plants, wildlife, and habitats known to occur in the vicinity of the survey area, which extends from the east side to the west side of the project limits and the area surrounding the viaduct footprint.

The biological survey was conducted to assess the biological conditions of the site, inventory the wildlife habitat and vegetation types, and to evaluate the site’s potential to support special-status plant and wildlife species within the survey area. All species observed were recorded in field notes. Plant species were identified in the field or collected for subsequent identification using keys in Hickman (1993)94 and Munz (1974).95 Taxonomy follows Hickman (1993) and current scientific data (e.g., scientific journals) for scientific and common names. The Sunset Western Garden Book96 was used for ornamental species that were not included in the references listed above. Taxonomy and nomenclature for wildlife generally follows Fisher and Case (1997)97 for amphibians and reptiles, American Ornithologists Union (1998)98 for birds, and Baker et al. (2003) for mammals.

The project site was resurveyed on November 9, 2010. A Senior Terrestrial Ecologist completed a thorough windshield and walking reconnaissance of the underside of the 6th Street Viaduct, adhering to the same BSA used in the original 2009 survey.

---

91 Natural Environment Study for 6th Street Viaduct Seismic Improvement Project. September, 2011.
93 CDFG, 2009. California Department of Fish and Game. California Natural Diversity Database.
3.18 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and fish passage and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

3.18.1 Affected Environment

The project vicinity is composed primarily of developed areas and is generally considered of low biological value to plant and wildlife species. Although non-native ornamental vegetation is present, along with small disturbed ruderal patches of invasive weeds, no natural communities/vegetation types are present on the site or in the immediate vicinity. No critical habitat under the Federal Endangered Species Act (FESA) is present within the project area.

3.18.2 Environmental Consequences

Since no natural communities/vegetation types are present on the site or in the immediate vicinity, no direct, indirect, short-term, or long-term impacts would occur with implementation of any of the proposed project alternatives.

3.18.3 Avoidance, Minimization, and Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

3.19 Wetlands and Other Waters

3.19.1 Regulatory Setting

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

Section 404 of the CWA establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation’s waters would be significantly degraded. The Section
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by 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 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 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 that 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 less effect 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. Essentially, this executive order states that a federal agency, such as FHWA, and/or the Department, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds that (1) 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 Boards (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the 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, then a Lake or Streambed Alteration Agreement will be required. The 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 USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from CDFG.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. State Water Quality Certification Section 401 of the CWA gives the states the authority to veto or place conditions on federally permitted activities that may result in water
pollution. Specifically, Section 401 requires that any applicant for a federal permit or license that may result in a discharge to waters of the U.S. must first obtain certification from the state. If the state finds that the discharge will violate state water quality standards, it may reject the permit or license. A discharge is defined as an emission from a “discrete conveyance”. The RWQCB also issues water quality certifications in compliance with Section 401 of the CWA. See Section 3.11 – Water Quality and Stormwater Runoff, for additional details.

3.19.2 Affected Environment

The concrete-lined Los Angeles River is the only watercourse within the BSA, which is located in the Upper Los Angeles River Reach 3. This watercourse is under the jurisdiction of USACE (confirmed via consultation with Ken Wong, USACE Regulatory Division, Los Angeles District, September 2009). All of the areas satisfying USACE’s jurisdictional criteria for waters of the U.S. are also subject to CDFG jurisdiction pursuant to Section 1602 of the California Fish and Game Code.

The sides and bottom of the Los Angeles River are mapped as two classes of riverine wetlands (Figure 3.19-1) by the Cowardin classification system. The central part of the channel is mapped as R2UBHx (R=riverine, 2=lower perennial, UB=unconsolidated bottom, h=diked/impounded, x=excavated), the sides as R2USFr (R=riverine, 2=lower perennial, US=unconsolidated shore, F= semi-permanently flood, r=artificial). The section of the Los Angeles River at the project area does not appear to remain inundated or saturated near the surface for long enough to meet the USACE wetland criteria. The wetlands in this concrete-lined channel are inherently transient because they form on the shallow concrete bottom of the concrete trapezoidal channel, which is designed for very high conveyance capacity. Winter rains, which cause the Los Angeles River to run hard and fast, would scour them completely, possibly several times during a typical winter. No riparian vegetation or wetlands are present within the Los Angeles River segment within the BSA of the proposed project based on the field surveys conducted by the biologists in 2007 and 2010.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Figure 3.19-1  Riverine Wetlands Designation within the Project Study Area

3.19.3  Environmental Consequences

3.19.3.1 Construction Impacts

Alternative 1 – No Action
No impacts to wetlands or water channel would occur under this alternative as long as the viaduct remains in service.

Alternative 2 – Retrofit
Alternative 2 would not involve retrofit or removal of the center pier in the river. Work within the Los Angeles River channel would be minimal. As stated in Section 3.19.2, no wetlands are present within the channel; therefore, no impacts to wetlands would occur. However, work in the Los Angeles River channel is expected during the retrofit construction. Relevant permits (i.e., Section 404 Nationwide Permit, Section 401, and Section 1602) would be required. Ongoing coordination with appropriate agencies has occurred throughout the environmental review process of this project.

Alternative 3 – Replacement
Alternative 3 would result in temporary impacts to approximately 1.5 acres of Waters of the U.S., as shown in Figure 3.19-2. Temporary impacts include physical impacts from construction activities, including bridge improvement and water diversion activities.
Figure 3.19-2
Area of Disturbance within the Los Angeles River from the Proposed Project
3.19.3.2 Permanent Impacts

**Alternative 1 – No Action**
No impacts to riparian or wetlands would occur under this alternative as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. No impacts to wetlands would occur since no riparian or wetlands are present. Impacts to the channel from dredge and fill operations as a result of new viaduct construction would occur as described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**
There would be no permanent impacts to the Los Angeles River.

**Alternative 3 – Replacement**
The project potentially involves placement of fill in the Los Angeles River, which is a jurisdictional waterway of USACE. The nature of the fill is placement of a viaduct pier within the waterway. A USACE Section 404 – Nationwide Permit will be obtained during the final design phase.

As part of the new viaduct construction, the existing center pier would be removed. A summary of the permanent direct impacts, resulting from the fill associated with the center pier of the viaduct, is provided in Table 3.19-1 and graphically shown in Figure 3.19-2. The areas shown are of the area of the center pier under different bridge concepts (impact to waterway). The net impact would be the increased footprint area, as compared to the existing footprint area.

<table>
<thead>
<tr>
<th>Bridge Concept</th>
<th>New Viaduct Pier Footprint (acres)</th>
<th>Existing Viaduct Pier Footprint (acres)</th>
<th>Net New Impact to Los Angeles River (acres)</th>
<th>Impacted Area Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept 1</td>
<td>0.089</td>
<td>0.048</td>
<td>+0.041</td>
<td>Water Column, Concrete Bottom</td>
</tr>
<tr>
<td>Concept 2</td>
<td>0</td>
<td>0.048</td>
<td>-0.048</td>
<td>N/A</td>
</tr>
<tr>
<td>Concept 3</td>
<td>0</td>
<td>0.048</td>
<td>-0.048</td>
<td>N/A</td>
</tr>
<tr>
<td>Concept 4</td>
<td>0.045</td>
<td>0.048</td>
<td>-0.003</td>
<td>N/A</td>
</tr>
<tr>
<td>Concept 4A</td>
<td>0.049</td>
<td>0.048</td>
<td>+0.001</td>
<td>N/A</td>
</tr>
<tr>
<td>Concept 5</td>
<td>0.021</td>
<td>0.048</td>
<td>-0.027</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Based on the information shown in Table 3.19-1, most bridge concepts would have no or negligible net impact to the Los Angeles River waterway (i.e., they avoid placement of fill in the Waters of the U.S.) except for Concept 1, which would result in an additional impact. Concept 4
has been identified as the preferred alternative, and it would not place additional fill in Waters of the U.S.

The Los Angeles River in this area is concrete-lined channel, so there would be no soft bottom habitat impact. Because no natural conditions or native vegetation types are present in this portion of the channel or in the immediate vicinity, it does not provide suitable habitat for any special-status plant or wildlife species. The site also does not contain any federally designated critical habitat areas. Due to the extremely limited biological value of the concrete-lined waterway, the minimal amount of fill is not expected to degrade any local species habitats or other biological resources, and the impact would not be considered adverse.

3.19.3.3 Indirect Impacts

There would be no indirect impacts to wetlands or Waters of the U.S. under any of the project alternatives. For the No Action Alternative, if the project is determined to be unserviceable, the City would identify the emergency funding to replace it. The indirect impacts under this circumstance would be the same as described under Alternative 3 – Replacement.

3.19.4 Avoidance, Minimization, and Mitigation Measures

**Alternative 1 – No Action**

No mitigation is required.

**Alternative 2 – Retrofit**

In addition to measures presented previously in Section 3.11, Water Quality and Stormwater Runoff, the following measures would avoid and minimize impacts to the Waters of the U.S. for the proposed project:

- Compliance with the dredge and fill permit and water quality certification requirements of §§ 404 and 401 of the federal CWA, administered by the USACE and RWQCB, respectively.
- Compliance with the Streambed Alteration Agreement requirements of California Fish and Game Code §1602, administered by the CDFG.

Additional conditions may be required by USACE and CDFG as part of the permitting process, and those conditions would be adhered to.

**Alternative 3 – Replacement**

Minimization measures are the same as Alternative 2.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

3.20  Plant Species

3.20.1  Regulatory Setting

USFWS and CDFG have regulatory responsibility for the protection of special-status plant species under federal and state laws, respectively. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA).

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

The regulatory requirements for FESA can be found at U.S.C 16, 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 CEQA, Public Resources Code, Sections 2100-21177.

3.20.2  Affected Environment

The study area consists of a highly urbanized environment. It is mainly developed, including many industrial and commercial buildings, paved roadways, and several active railroad tracks running under the existing viaduct along the Los Angeles River. During the May 4, 2007 survey, a modest amount of water was flowing and utility workers were driving vehicles within the concrete-lined Los Angeles River. A high level of transient activity was observed throughout the survey area, including within the existing viaduct support structures.

Vegetation within the study area includes non-native invasive species growing through cracks in concrete and pavement, including London rocket (Sisymbrium irio), Mediterranean schismus (Schismus barbatus), foxtail chess (Bromus madritensis ssp. rubens), common sow-thistle (Sonchus oleraceus), and bermuda grass (Cynodon dactylon). In addition, other non-native invasive species are present in small ruderal patches (such as along chain-link fencing and abandoned railroad tracks), including Sellow's pampas grass (Cortaderia selloana), African fountain grass (Pennisetum setaceum), tree of heaven (Ailanthus altissima), smilo grass (Piptatherum miliaceum), and black mustard (Brassica nigra). Finally, the study area includes many non-native ornamental species growing in landscaped areas adjacent to buildings and roadways, such as Canary Island date palm (Phoenix canariensis), Mexican fan palm...
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

(Washingtonia robusta), acacia (Acacia redolens), gum (Eucalyptus sp.), Peruvian pepper tree (Schinus molle), elm (Ulmus sp.), and English walnut (Juglans regia).

3.20.3 Environmental Consequences

Alternative 1 – No Action
No temporary or permanent impacts to plant species would occur under this alternative as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. The new viaduct would be designed to meet current standards similar to Alternative 3 – Replacement. Impacts to mature trees within the BSA would be the same as described under Alternative 3 – Replacement.

Alternative 2 – Retrofit
No biological resources were identified during project-related field surveys within the viaduct footprint where construction activities would occur. No mature trees would be removed; hence, no adverse impacts to plant species are anticipated.

Alternative 3 – Replacement
Ornamental trees within the survey area have a low potential to support nesting birds, which are protected by the Migratory Bird Treaty Act. Given the larger construction area for Alternative 3, a preconstruction survey would be conducted to identify any mature trees subject to removal prior to the commencement of construction activities. If migratory birds are found, mitigation measures to protect them, as described in Section 3.21.4, would be implemented.

3.20.4 Avoidance, Minimization, and Mitigation Measures

Alternative 1 – No Action
No mitigation is required.

Alternative 2 – Retrofit
No mitigation is required.

Alternative 3 – Replacement
If mature trees were to be removed, a landscape plan would be developed to provide landscape within the remaining unused land of the disturbed area.

3.21 Animal Species

3.21.1 Regulatory Setting
Many federal and state laws regulate impacts to wildlife. The USFWS, National Oceanic and Atmospheric Administration (NOAA) Fisheries, and 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 FESA. Species listed or proposed for listing as threatened or endangered are discussed in Section 3.22 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 Service candidate species.

Federal laws and regulations pertaining to wildlife include:

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

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act (CEQA)
- Sections 1600 – 1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

### 3.21.2 Affected Environment

As previously described, most of the survey area is developed and completely surrounded by a highly urbanized environment. Due to the level of disturbance and the extremely limited amount of vegetated areas, the biological diversity within the survey area and immediate surroundings is low. The site provides very limited potential to support wildlife species that are highly adapted to urbanized conditions. These species occur throughout the urbanized areas of the region. Among the species expected to occur, the following were observed in the survey area during the May 4, 2007 survey: rock dove (*Columba livia*), American crow (*Corvus brachyrhynchos*), cliff swallow (*Petrochelidon pyrrhonota*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), mallard (*Anas platyrhynchos*), brewer’s blackbird (*Euphagus cyanocephalus*), rough-winged swallow (*Stelgidopteryx serripennis*), common grackle (*Quiscalus quiscula*), mourning dove (*Zenaida macroura*), killdeer (*Charadrius vociferus*), domestic cat (*Felis catus*), and domestic dog (*Canis lupus familiaris*). A few additional species, such as roof rat (*Rattus rattus*), Norway rat (*Rattus norvegicus*), Virginia opossum (*Didelphis virginiana*), and red-tailed hawks (*Buteo jamaicensis*) are also expected to occasionally utilize the survey area. Within the concrete-lined Los Angeles River bed in the survey area, a few additional species may be expected, such as mosquito fish (*Gambusia affinis*), Pacific tree frog (*Pseudacris Regilla*), and occasional water loving birds, such as the black necked stilt (*Himantopus mexicanus*), which was observed just downstream of the survey area. No cliff swallows or roosting bats were apparent underneath the 6th Street Viaduct during the May 4, 2007 survey.

Bat droppings were found at eye level on structural ledges of bridge columns at Anderson Street during the November 2010 site visit; however, droppings of various bat species are enough alike
to be of no value in species identification. The steady presence of water in the Los Angeles River would certainly foster large insect populations in the summer months. Possibly several species of bats could roost by day in crevices, then forage at night along the river. The 6th Street Viaduct affords both facets of habitat requirements for bats.

According to the California Natural Diversity Database (CNDDB) records in 2007, 4 species of bats were noted. In total, 30 sensitive species and 3 biotic communities were judged as potentially present in the project area (CNDDB list dated May 22, 2007). A synopsis of all sensitive species recorded within the same four USGS quadrangles was extracted from CNDDB archives in November 2010. No species of special concern have been added to CNDDB records of the vicinity of the 6th Street Viaduct.

### 3.21.3 Environmental Consequences

**Alternative 1 – No Action**

No temporary or permanent impacts to animal species would occur under this alternative as long as the viaduct remains in service. In the event the viaduct is determined to be unserviceable, the City would seek emergency funding sources to replace it. Impacts to animal species within the BSA would be the same as that described under Alternative 3 – Replacement.

**Alternative 2 – Retrofit**

Ornamental trees within the survey area have a low potential to support nesting birds, which are protected by the Migratory Bird Treaty Act. No mature trees are expected to be removed as part of the construction activities.

Construction activities may cause the loss of an unknown number of individual bats if construction occurs during the late spring or summer months. The loss of bats during project construction would not have regional biological importance, as other nearby bridges across the Los Angeles River would likely house equal numbers of bats.

**Alternative 3 – Replacement**

The impacts would be the same as those described under Alternative 2.

### 3.21.4 Avoidance, Minimization, and Mitigation Measures

**Alternative 1 – No Action**

No mitigation is required as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding to replace it. Under this circumstance, minimization measures described under Alternative 3 – Replacement would apply.
Alternative 2 – Retrofit
A preconstruction survey will be conducted by a qualified bat biologist during the spring and summer (May through August) to confirm the absence or presence of any roosting bats. The surveys shall include a combination of structure inspection, sampling, exit counts, and acoustic surveys. If bats are found, bat proofing (exclusion) will occur outside of the breeding season (October 30 through March 1) after juvenile bats have learned to fly; exclusion will be staged to ensure that roosting sites in areas not currently under construction will be available at all times during the project to minimize the potential effects on bats.

Alternative 3 – Replacement
To protect any possible migratory bird nesting or roosting bat activity, construction activities and removal of non-native ornamental vegetation will be conducted between September 1 and January 31. If initial vegetation removal and ground clearance cannot be avoided between February 1 and August 31, a qualified biologist shall conduct a preconstruction survey of trees and shrubbery for active nests. If active nests of migratory bird species occur within the construction area, any nests or roosts that are less than 50 percent complete would be removed and any further habitation would be prevented. Any nests that are more than 50 percent complete would have a buffer area of 50-ft radius for songbirds and 500-ft radius for raptors flagged off-limits until such time as the young have fledged. The biologist will monitor the site of active nests during the construction activities. Once the biologist determines that chicks have fledged or parents have abandoned the nest, the temporary fence can be removed and construction in such area can proceed.

If bats are found measures described under Alternative 2 above would be implemented.

3.22 Threatened and Endangered Species
3.22.1 Regulatory Setting
The primary federal law protecting threatened and endangered species is the FESA: 16 U.S.C., 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 FHWA, are required to consult with USFWS and NOAA Fisheries to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

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." The CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For projects 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.

### 3.22.2 Affected Environment

During the reconnaissance-level biological field survey, no native habitats, vegetation types, or special status species were observed within the survey area. The correspondences with USFWS confirming this finding are provided in Appendix K.

Table 3.22-1 lists special-status plant and wildlife species identified by CDFG and the California Native Plant Society (CNPS) with potential to occur within the project area.\(^99, \, 100, \, 101, \, 102\)

### 3.22.3 Environmental Consequences

There are no special-status plants and animals within or immediately adjacent to the biological survey area. Although several special-status plant and wildlife species are known to occur in the

---

\(^99\) California Department of Fish and Game (CDFG) California Natural Diversity Database, 2011: Hollywood, Los Angeles, Inglewood, and South Gate U.S. Geological Survey (USGS) quadrangles

\(^100\) CDFG Special Animals List, 2011.

\(^101\) Special Vascular Plants, Bryophytes, and Lichens List, 2011

Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

project region, as shown in Table 3.22-1, no threatened or endangered species are expected to occur within the survey area due to the lack of suitable habitat and the disturbed nature of the survey area. The staff of USFWS was contacted to determine there are no federal listed species and no critical habitat in this area. The field survey resulted in no native habitats, plant communities, or special-status species being observed within the project study area. No effects to threatened and endangered species as a result of proposed project implementation would occur under any of the alternatives implemented.

3.22.4  Avoidance, Minimization, and Mitigation Measures

Alternative 1 – No Action
No mitigation is required.

Alternative 2 – Retrofit
No mitigation is required.

Alternative 3 – Replacement
No mitigation is required.

Table 3.22-1
Special-Status Species with Potential to Occur in the 6th Street Viaduct Project Area

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arenaria paludicola</td>
<td>Marsh sandwort</td>
<td>FE, SE, CNPS List 1B.1</td>
<td>Marshes and swamps.</td>
<td>A</td>
<td>CNPS 2011; CDFG, 2011</td>
</tr>
<tr>
<td>Astragalus brauntonii</td>
<td>Braunton’s milk-vetch</td>
<td>FE, CNPS List 1B.1</td>
<td>Chaparral; coastal scrub; valley and foothill grassland.</td>
<td>A</td>
<td>CNPS 2011; CDFG, 2011</td>
</tr>
<tr>
<td>Astragalus pycnostachyus var. lanosissimus</td>
<td>Ventura marsh milk-vetch</td>
<td>FE, SE, CNPS List 1B.1</td>
<td>Coastal dunes; coastal scrub; marshes and swamps.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Astragalus tener var. titi</td>
<td>Coastal dunes milk-vetch</td>
<td>FE, SE, CNPS List 1B.1</td>
<td>Coastal bluff scrub; coastal dunes; coastal prairie.</td>
<td>A</td>
<td>CNPS 2011; CDFG, 2011</td>
</tr>
<tr>
<td>Atriplex serenana var. davidsonii</td>
<td>Davidson’s saltscale</td>
<td>CNPS List 1B.2</td>
<td>Coastal bluff scrub; coastal scrub.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>California macrophylla</td>
<td>Round-leaved filaree</td>
<td>CNPS List 1B.1</td>
<td>Cismontane woodland; valley and foothill grassland.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
</tbody>
</table>

103 Letters from USFWS dated July 22, 2009 and September 20, 2011 (See Appendix K).
Table 3.22-1  
Special-Status Species with Potential to Occur in the 6th Street Viaduct Project Area

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calochortus plummerae</td>
<td>Plummer’s mariposa lily</td>
<td>CNPS List 1B.2</td>
<td>Chaparral; cismontane woodland; coastal scrub; lower montane coniferous forest; valley and foothill grassland.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Calystegia sepium ssp. binghamiae</td>
<td>Santa Barbara morning-glory</td>
<td>CNPS List 1A</td>
<td>Marshes and swamps.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Camissonia lewisi</td>
<td>Lewis’s evening-primrose</td>
<td>CNPS List 3</td>
<td>Coastal bluff scrub; cismontane woodland; coastal dunes; coastal scrub; valley and foothill grassland.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Centromadia parryi ssp. australis</td>
<td>Southern tarplant</td>
<td>CNPS List 1B.1</td>
<td>Marshes and swamps; valley and foothill grassland; vernal pools.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Dudleya multicaulis</td>
<td>Many-stemmed dudleya</td>
<td>CNPS List 1B.2</td>
<td>Chaparral; coastal scrub; valley and foothill grassland.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Helianthus nuttallii ssp. parishii</td>
<td>Los Angeles sunflower</td>
<td>CNPS List 1A</td>
<td>Marshes and swamps.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Hordeum intercedens</td>
<td>Vernal barley</td>
<td>CNPS List 3.2</td>
<td>Coastal dunes; coastal scrub; valley and foothill grassland; vernal pools.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Horkelia canecata ssp. puberula</td>
<td>Mesa horkelia</td>
<td>CNPS List 1B.1</td>
<td>Chaparral; cismontane woodland; coastal scrub.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Lasthenia glabrata ssp. coulteri</td>
<td>Coulter’s goldfields</td>
<td>CNPS List 1B.1</td>
<td>Marshes and swamps; playas; vernal pools.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Linanthus orcutti</td>
<td>Orcutt’s linanthus</td>
<td>CNPS List 1B.3</td>
<td>Chaparral; lower montane coniferous forest; pinyon and juniper woodland.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Nasturtium gambelii</td>
<td>Gambel’s water cress</td>
<td>FE, ST, CNPS List 1B.1</td>
<td>Marshes and swamps.</td>
<td>A</td>
<td>CNPS 2011; CDFG, 2011</td>
</tr>
<tr>
<td>Navarretia fossalis</td>
<td>Moran’s navarretia</td>
<td>FT, CNPS List 1B.1</td>
<td>Chenopod scrub; marshes and swamps; playas; vernal pools.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Navarretia prostrata</td>
<td>Prostrate vernal pool navarretia</td>
<td>CNPS List 1B.1</td>
<td>Coastal scrub; meadows and seeps; valley and foothill grassland; vernal pools.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Orcuttia californica</td>
<td>California Orcutt grass</td>
<td>FE, SE, CNPS List 1B.1</td>
<td>Vernal pools.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Phacelia hubbyi</td>
<td>Hubby’s phacelia</td>
<td>CNPS List 4.2</td>
<td>Gravelly, rocky, talus; chaparral; coastal scrub; valley and foothill</td>
<td>A</td>
<td>CNPS, 2011</td>
</tr>
<tr>
<td>Phacelia stellaris</td>
<td>Brand’s star phacelia</td>
<td>FC, CNPS List 1B.1</td>
<td>Coastal dunes; coastal scrub.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Pseudo-gnaphalium leucocephalum</td>
<td>White rabbit-tobacco</td>
<td>CNPS List 2.2</td>
<td>Chaparral; cismontane woodland; coastal scrub; riparian woodland.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td>Ribes divaricatum var. parishii</td>
<td>Parish’s gooseberry</td>
<td>CNPS List 1A</td>
<td>Riparian woodland.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
</tbody>
</table>
### Table 3.22-1
Special-Status Species with Potential to Occur in the 6th Street Viaduct Project Area

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sympytotrichum defoliatum</strong></td>
<td>San Bernardino aster</td>
<td>CNPS List 1B.2</td>
<td>Cismontane woodland; coastal scrub; lower montane coniferous forest; meadows and seeps; marshes and swamps; valley and foothill grassland.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td><strong>Sympytotrichum greatae</strong></td>
<td>Greata’s aster</td>
<td>CNPS List 1B.3</td>
<td>Broadleafed upland forest; chaparral; cismontane woodland; lower montane coniferous forest; riparian woodland.</td>
<td>A</td>
<td>CNPS 2011</td>
</tr>
<tr>
<td><strong>Reptiles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phrynosoma coronatum blainvillii</td>
<td>Coast (San Diego) horned lizard</td>
<td>SSC</td>
<td>Coastal sage scrub and chaparral in arid and semi-arid climate conditions.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
<tr>
<td><strong>Invertebrates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carolella busckana</td>
<td>Busck’s gallmoth</td>
<td>-</td>
<td>Sand dunes.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
<tr>
<td><strong>Birds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Athene cunicularia</td>
<td>Burrowing owl</td>
<td>SSC</td>
<td>Open, dry annual or perennial grasslands, deserts, and scrublands with low-growing vegetation.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
<tr>
<td>Empidonax traillii extimus</td>
<td>South-western willow flycatcher</td>
<td>FE, SE</td>
<td>Riparian woodlands in southern California.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
<tr>
<td>Poliopitla californica californica</td>
<td>Coastal California gnatcatcher</td>
<td>FT, SSC</td>
<td>Coastal sage scrub below 2,500 feet in elevation in southern California.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antrozous pallidus</td>
<td>Pallid bat</td>
<td>SSC</td>
<td>Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
<tr>
<td>Eumops perotis californicus</td>
<td>Western mastiff bat</td>
<td>SSC</td>
<td>Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
<tr>
<td>Lasiurus cinereus</td>
<td>Hoary bat</td>
<td>-</td>
<td>Prefers open habitats or habitat mosaics, with access to trees for cover, and open areas or habitat edges for feeding.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
<tr>
<td>Microtus californicus stephensi</td>
<td>South coast marsh vole</td>
<td>SSC</td>
<td>Tidal marshes in Los Angeles, Orange, and southern Ventura counties.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
<tr>
<td>Nycitonomops femorosaccus</td>
<td>Pocketed free-tailed bat</td>
<td>SSC</td>
<td>Variety of arid areas in southern California: pine-juniper woodlands, desert scrub, palm oasis, desert wash, and desert riparian.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
</tbody>
</table>
Table 3.22-1
Special-Status Species with Potential to Occur in the 6th Street Viaduct Project Area

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
<th>General Habitat Description</th>
<th>Habitat Present/Absent</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nyctinomops macrotis</td>
<td>Big free-tailed bat</td>
<td>SSC</td>
<td>Low-lying arid areas in southern California.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
<tr>
<td>Taxidea taxus</td>
<td>American badger</td>
<td>SSC</td>
<td>Drier, open stages of most shrub, forest, and herbaceous habitats, with friable soils.</td>
<td>A</td>
<td>CDFG 2011</td>
</tr>
</tbody>
</table>

LEGEND:
Habitat Present/Absent: P: Present; A: Absent (no further work needed)
Federal (USFWS): FE: Endangered; FT: Threatened; FC: Candidate
State (CDFG): SE: Endangered; ST: Threatened; SR: Rare; SC: Candidate; SSC: Species of Special Concern; FP: Fully Protected Species
California Native Plant Society (CNPS) List Categories
List 1A: Plants Presumed Extinct in California
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2: Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
List 3: Plants About Which We Need More Information - A Review List;
List 4: Plants of Limited Distribution; A Watch List
California Native Plant Society (CNPS) Threat Rank Extensions
.1 Seriously threatened in California (high degree/immediacy of threat)
.2 Fairly threatened in California (moderate degree/immediacy of threat)
.3 Not very threatened in California (low degree/immediacy of threat or no current threats known)

3.23 Invasive Species

3.23.1 Regulatory Setting
On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” The FHWA guidance issued August 10, 1999, directs the use of the state’s noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

3.23.2 Affected Environment
The California Invasive Plant Council (Cal-IPC) maintains a California Invasive Plant Inventory that categorizes non-native invasive plants that threaten the state's wildlands. Approximately 200 species are currently considered invasive in California based on assessed ecological impacts. Vegetation within the project study area includes sparse non-native invasive species growing through cracks in concrete and pavement and in small ruderal patches, such as along chain-link fencing and abandoned railroad tracks. Species observed include London rocket (Sisymbrium irio), Mediterranean schismus (Schismus barbatus), foxtail chess (Bromus madritensis ssp. rubens), bermuda grass (Cynodon dactylon), Sellow's pampas grass (Cortaderia selloana), African fountain grass (Pennisetum setaceum), tree of heaven (Ailanthus altissima), smilo grass
(Piptatherum miliaceum), black mustard (Brassica nigra), tree tobacco (Nicotiana glauca), giant reed (Arundo donax), red-stemmed filaree (Erodium cicutarium), Italian thistle (Carduus pycnocephalus), tocalote (Centaurea melitensis), and castor bean (Ricinus communis). Invasive weeds are the type of plants best suited to growing in developed areas and extremely disturbed patches of soil.

3.23.3 Environmental Consequences
None of the species on the California list of noxious weeds is currently used by the City of Los Angeles or Caltrans for erosion control or landscaping purposes within the project area. Implementation of the proposed project would not introduce or promote the spread of invasive species within the project area except during the construction phase, when invasive species could be inadvertently hauled onsite via construction vehicles.

3.23.4 Avoidance, Minimization, and Mitigation Measures

Alternative 1 – No Action
No mitigation is required as long as the viaduct remains in service. In the event the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. Under this circumstance, measures to minimize effects from invasive species described under Alternative 3 – Replacement will apply.

Alternative 2 – Retrofit
No mitigation is required.

Alternative 3 – Replacement
In compliance with the Executive Order on Invasive Species, E.O. 13112, and subsequent guidance from FHWA, the landscaping and erosion control included in the project would not use species listed as noxious weeds. Precautions would be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should a propagation of invasive species in the project area occur prior to construction.
3.24 Any Irreversible and Irretrievable Commitments of Resources that would be Involved in the Proposed Action

Implementation of the proposed action involves commitment of a range of natural, physical, human, and fiscal resources. Land dedicated for the retrofit or replacement construction and subsequent operation of the viaduct would constitute a semi-permanent commitment for the life of the facility; however, if a greater need arose for use of the land or if the facility became obsolete, then the land could be converted to another use. Currently, there is no reason to believe that such a conversion would ever be necessary or desirable, given that the project corridor has been used for transportation purposes for more than 100 years and will continue to be used for the foreseeable future.

Construction and operation of the proposed project would also require consumption of fossil fuels, labor, and construction materials. Additionally, the project would require expenditure of labor, and natural resources would be used in the fabrication and preparation of the necessary construction materials. These expenditures would be, for the most part, irrecoverable; however, they are not in short supply, and their use would not have an adverse effect upon continued availability of these resources. Any construction would also require a substantial one-time expenditure of federal and local funds.

The commitment of these resources is based on the concept that residents in the immediate area, as well as the region, state, and nation, would benefit from the safer transportation system in this critical transportation artery to the most-populated and heavily visited city in California. This benefit is anticipated to outweigh the commitment of these resources.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

3.25  The Relationship between Local Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

The proposed project involves tradeoffs between obtaining the long-term benefits of preventing the loss of human lives and property damage due to the possible collapse of the 6th Street Viaduct in a major earthquake against short-term impacts to the environment. Construction activities would result in temporary impacts that would cease upon completion of the viaduct construction. These impacts include air quality degradation associated with increased emissions of criteria pollutants; noise effects generated by heavy equipment operation; socioeconomic and community impacts from construction; impacts to utility systems caused by relocation and potential service interruption; generation of hazardous materials and wastes from construction; and intermittent roadway obstruction and traffic detours. These impacts would be mitigated, with the exception of air quality during certain phases of construction.

If the Retrofit Alternative were implemented, then the proposed project would provide a viable east-west link between Boyle Heights and Downtown Los Angeles via a seismically retrofitted structure that could withstand a design-level earthquake over the next 30-year period. If the Replacement Alternative were implemented, then the proposed project would provide a viaduct that meets functional and seismic safety standards for a period of at least 75 years.

❖  ❖  ❖
3.26 Cumulative Impacts

3.26.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in a defined area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for a project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under the National Environmental Policy Act (NEPA), can be found in 40 CFR, Section 1508.7 of the Council on Environmental Quality (CEQ) Regulations.

3.26.2 Methodology

The cumulative impacts analysis for the proposed project was undertaken by following the steps set forth in the Caltrans Standard Environmental Reference (SER) and the FHWA Interim Guidance: Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process (2003). These steps include:

1. Identify resources to be analyzed.
2. Define the study area for each resource.
3. Describe the current health and historical context for each resource.
4. Identify direct and indirect impacts of the proposed project.
5. Identify other reasonable foreseeable actions that affect each resource.
6. Assess potential cumulative impacts.
8. Assess the need for mitigation.
As specified in Caltrans/FHWA guidance, if the proposed project would not result in a direct or indirect impact to a resource, it would not contribute to a cumulative impact on that resource. This cumulative impact analysis includes resources that are substantially impacted by the proposed project and resources that are currently in poor or declining health or at risk even if project impacts would not be substantial.

3.26.3 Affected Environment

The 6th Street Viaduct has been open for services since 1933. The project study area is located east of Downtown Los Angeles and is highly developed and urban/industrial in character. Land uses within the project area are dominated by industrial and warehouse uses, rail lines, and the concrete-lined Los Angeles River.

The project is located at the boundary of the City of Los Angeles General Plan’s Central City North and Boyle Heights Community Planning areas. Rehabilitation, reuse, and redevelopment activities, including conversion of abandoned industrial buildings to residential units, are rapidly progressing in the downtown area. The project area is located within the CRA/LA redevelopment area where industrial uses are preserved.

Sixth Street is designated as a Secondary Highway within the project study area; it carries an average of 13,260 cars daily. The roadway segment accommodates substantial local traffic movement in the east-west direction between East Los Angeles and Downtown Los Angeles. Sixth Street is connected to US 101 through a NB on-ramp immediately east of the project limit.

The overall visual quality of the project area is moderately low to low because of the industrial nature of the area and its lack of vegetation and open space, which give the area low vividness, intactness, and unity. The existing viaduct does have a high visual quality because of its architectural and historic character, which creates a very vivid, or memorable, structure, although the structure has been degraded somewhat by the removal of some architectural features, the addition of infill walls, replacement of historic lampposts, and deferred maintenance over time.

The 6th Street Viaduct was found to be eligible for the National Register of Historic Places (NRHP) for its association with the Los Angeles River bridge program and its extraordinary Streamline Moderne design using steel and reinforced concrete. Because the viaduct has been determined eligible for listing in the NRHP, it is also listed in the California Register of Historical Resources (CRHR). It was also determined eligible as one of a thematic group of 118 “Historic Highway Arch and Other Bridges in California” as part of the Caltrans Statewide Bridge Inventory in 1987. In addition, the 6th Street Viaduct is designated as City of Los Angeles Historic-Cultural Monument (HCM) #905.
In 2004, Caltrans established a survey population of 45 bridges within the City of Los Angeles (City of Los Angeles Monumental Bridges, 1900-1950).\(^{104}\) Of the 45 bridges examined as part of this study, 29 appeared to be significant as City of Los Angeles monumental bridges. The study concluded that the bridges in Los Angeles that are significant for their association with the Bureau of Engineering’s bridge program in the early to mid-twentieth century 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 determined the Los Angeles bridges are dispersed throughout the city and thus cannot be categorized as a historic district. Caltrans submitted this survey update to the SHPO.

The project area does not contain regionally significant visual resources; however, the 6\(^{th}\) Street Viaduct is locally recognized as a visual and historic icon within Boyle Heights and nearby Downtown Los Angeles communities.

### 3.26.4 Related Projects

Several projects are known to be proposed, approved, or under implementation within the immediate Downtown Los Angeles area and nearby vicinity. In identifying recent past, present, and future projects, the baseline (present) year 2007 was used to be consistent with the traffic study for this project. With this baseline, the projects that were approved prior to 2007 are considered part of the existing setting (for traffic analysis purposes), and projects that have not been approved are considered foreseeable future projects. For traffic-generating related projects, the trips to be generated by these projects were accounted for in the traffic analysis performed as part of the proposed project in 2008, with the exception of the Boyle Heights Mixed-Use Project, which was introduced in 2010.

- **Hollenbeck Police Station Replacement:** The project involves replacement of the existing Hollenbeck Police Station with new offices and is located at the corner of 1\(^{st}\) Street and Saint Louis Street in the City of Los Angeles. The new office will have a capacity of 350 sworn and civilian personnel, which is a potential increase of 73 employees. The additional 73 employees will generate an estimated 445 daily trips. The existing uses on the site provide trip credits, as allowed by LADOT traffic analysis guidelines. Due to the trip credits from existing uses, a net decrease in total daily trips and a minimal increase in peak-period traffic are expected. Note that this project became operational during the time the proposed project Final EIR/EIS was being prepared (August 2009).

---

**Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures**

- **Mixed-Use Project: 100-300 South Santa Fe Avenue**: This is a proposed residential, retail, and commercial mixed-use project. The project area is part of the MTA Maintenance Yard site located on the east side of Santa Fe Avenue between 1st Street and north of 4th Street in Downtown Los Angeles. The site address is within the Central City North Community Plan and Artists-in-Residence District. The project proposes development of 442 apartment units, 17 live/work units, and 25,000 square ft of retail use. The project would generate approximately 2,443 total trips per day, which includes 208 trips during the morning peak hour and 229 trips during the afternoon peak hour. The schedule to complete the project is not known as of the date this Final EIR/EIS was prepared (August 2009).

- **Pollo Campero Restaurant – 425 South Soto Street**: The Pollo Campero Restaurant is proposed in an existing commercial center located in the southwest quadrant of South Soto Street and 4th Street in the Boyle Heights community of the City of Los Angeles. The proposed restaurant is at 425 South Soto Street. The planned building area is 2,660 square ft and includes a drive-through facility. Construction of the project was completed by the time this Final EIR/EIS was prepared (August 2009).

- **East Los Angeles Area New High School No. 1 – Mission Road and Plaza Del Sol**: The project involves construction of four new buildings, totaling 108,000 square ft on a 6.22-acre site with a maximum enrollment of 1,026 students. A subterranean parking structure with 95 parking spaces and a two-way driveway with access from Mission Road for staff and visitors is provided below the first building. The second and third buildings are two-story structures with 19 classrooms in each building. The fourth building houses an indoor gymnasium and locker facilities, a library, a performing arts facility, and student services. A student drop-off/loading and unloading zone is on the south side of Plaza Del Sol just east of Mission Road. Construction of the project was completed by the time this Final EIR/EIS was prepared (August 2009).

- **Boyle Heights Mixed-Use Project**: The proposed project would redevelop the approximately 68.8-acre Wyvernwood Garden Apartments site (located at 2901 E. Olympic Boulevard) to provide up to 4,400 residential units (including no less than 1,200 rental units and up to 3,200 for-sale units), up to 300,000 square ft of neighborhood-serving retail and office commercial uses, up to 25,000 square ft of civic uses, and open space. The project would be constructed in five phases, with the initial phase to be completed in 2017 and the final phase to be completed in 2030. Under the maximum office scenario, the proposed project is estimated to generate approximately 19,382 net new daily trips, with 1,507 net trips in the a.m. peak hour and 1,927 net trips in the p.m. peak hour. Under the maximum retail scenario, the proposed project is estimated to generate approximately 19,640 net new daily trips, with 1,458 net trips in the a.m. peak hour and 1,934 net trips in the p.m. peak hour. A
traffic study was prepared to analyze operational impacts covering 52 intersections, 13 of which overlap with the proposed 6th Street Viaduct Seismic Improvement Project study intersections. Out of the 52 intersections analyzed, 22 were determined to be significantly impacted by the proposed Boyle Heights Mixed-Use Project at build-out. The traffic study proposed various measures to mitigate the impacts. Only six intersections would be left unmitigated; none of those unmitigated intersections coincide with the study intersections for the 6th Street Viaduct Seismic Improvement Project.

- **First Street Viaduct and Street Widening Project:** Currently under construction, this project widens the 1st Street Viaduct deck to accommodate the future MTA Gold Line Light Rail Extension project. It will provide two lanes of vehicular traffic in each direction (same as pre-project condition). Viaduct approaches and transition roadways will be improved. Construction will be completed in 2011.

- **East Los Angeles Area Primary Sewer Rehabilitation:** This project proposes rehabilitating approximately 21,635 linear ft of aging and structurally deteriorated sewers, ranging from 16 to 40 inches in diameter. The sewer reaches targeted for rehabilitation are scattered throughout the entire Central Area. The project area includes 7th Street in the vicinity of Santa Fe Avenue and Alameda Street between 6th Street and 7th Street. The rehabilitation schedule is from January 2010 to March 2012.

- **North Outfall Sewer (NOS) Rehabilitation Project:** This project will rehabilitate a portion of the NOS along the east side of the Los Angeles River. The reach of sewer will stretch from 6th Street and Mission Road to the Humboldt Division, which is approximately 2.7 miles north of 6th Street. The project is scheduled to be constructed between April 2014 and December 2016.

- **Central Industrial Redevelopment Project and Adelante Eastside Redevelopment Project:** These two projects are ongoing redevelopment projects under the CRA/LA. Detailed information on the projects is presented in Section 3.2.1.7 of this EIR/EIS.

- **Los Angeles River Revitalization Master Plan:** As described in Section 3.2.2.1 D of this EIR/EIS, the LARRMP is the conceptual framework to guide revitalization of the Los Angeles River. The plan was approved by the City Council in May 2007; however, there is no available implementation date for this project. The LARRMP has "near-term opportunities" that could be realized in a 5- to 15-year time horizon. All of the 15 smaller-scale projects in the vicinity of the 6th Street Viaduct are described as "design process could begin as soon as funding is available." It is unlikely that construction of the proposed project would overlap with construction of these Los Angeles River projects.
• **City of Los Angeles Bridge Improvement**: The City of Los Angeles Bureau of Engineering has identified more than 80 bridges throughout Los Angeles to be part of its Bridge Improvement Program (BIP), which implements a range of structural and seismic improvements to existing bridges and in some instances replaces bridges entirely. Several of the bridges currently undergoing improvement under the BIP are historic bridges, as summarized in Table 3.26-1.

• **Westside Subway Extension Project**: In fall 2007, MTA began an Alternatives Analysis study to look at whether a transit improvement was needed on the Westside and to evaluate a variety of options to improve mobility in the area. When built, it will provide a high-capacity, high-speed, dependable alternative for those traveling to key destinations such as the Miracle Mile, Beverly Hills, Century City, Westwood, and the UCLA campus. More than 300,000 people travel into the Westside every day for work from areas throughout the County. It will connect the Westside to the region's growing rail transit network. The Draft EIS/EIR for the Westside Subway Extension was prepared and approved by the Metro Board of Directors on October 28, 2010. The Final EIS/EIR is being prepared but has not been released as of this date of the FEIR/EIS preparation. The subway construction is scheduled to commence in 2015 and be completed in 2021. As part of the Westside Subway Extension, a Division 20 South Rail Yard would be constructed. The site of this rail yard is located north of 6th Street Viaduct west of the Los Angeles River. If constructed, some properties east of Santa Fe Avenue north of the 6th Street Viaduct would have to be acquired.

• **California High-Speed Rail Project**: Established in 1996, the California High-Speed Rail Authority (Authority) is the state agency responsible for planning, constructing, and operating a high-speed train system serving California's major metropolitan areas. The 800-mile-long high-speed train system will serve Sacramento, San Francisco Bay Area, Central Valley, Los Angeles, Inland Empire, Orange County, and San Diego. The California high-speed rail system, pending funding availability, is anticipated to be built in phases by 2020. The system is forecast to potentially carry more than 100 million passengers per year by 2030.
# Active Bridge Projects under Bridge Improvement Program

<table>
<thead>
<tr>
<th>Bridge Name/Year Built</th>
<th>Bridge Number</th>
<th>Federal/Local Designation</th>
<th>Proposed Improvement</th>
<th>Status/Construction Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Street Viaduct / 1929</td>
<td>53C1166</td>
<td>NRHP eligible; HCM #909</td>
<td>One side widening by 22 ft; replication of existing exterior elements.</td>
<td>EIR/Environmental Assessment (EA) completed Construction schedule: Summer 2008 – Fall 2011</td>
</tr>
<tr>
<td>Main Street Bridge / 1910</td>
<td>53C1010</td>
<td>NRHP eligible; HCM #901</td>
<td>Seismic retrofit; replace deck/ sidewalk; restore original barrier.</td>
<td>Category Exemption (CE)/Categorical Exclusion (CE) completed Construction schedule: Summer 2011 – Fall 2012</td>
</tr>
<tr>
<td>Fletcher Avenue Bridge / 1927</td>
<td>53C0096</td>
<td>NRHP eligible; HCM #322</td>
<td>Seismic Retrofit; replace sidewalk.</td>
<td>CE/CE completed Construction schedule: Summer 2011 – Fall 2012</td>
</tr>
<tr>
<td>Riverside Bridge (Figueroa Street) / 1927/1939 (Original 1927 bridge washed out)</td>
<td>53C0160</td>
<td>Not NRHP eligible; HCM #908</td>
<td>Replacement; modern concrete box-girder with exterior arch facia.</td>
<td>Initial Study (with Negative Declaration)/EA (with Finding of No Significant Impact) completed Construction schedule: Summer 2011 – Fall 2015</td>
</tr>
<tr>
<td>North Spring Street Bridge / 1928</td>
<td>53C0859</td>
<td>NRHP eligible; HCM #900</td>
<td>One side widening of 23 ft; modern concrete dual arch without spandrel columns.</td>
<td>Final EIR/EA in preparation Construction schedule: Spring 2012 – Fall 2015</td>
</tr>
<tr>
<td>Glendale-Hyperion Complex / 1929</td>
<td>53C1881-4</td>
<td>NRHP eligible; HCM #164</td>
<td>One side widening of 8 ft to Glendale bridges only; replication of existing exterior elements; restore original barrier for entire complex.</td>
<td>EIR/EA in preparation Construction schedule: Fall 2013 – Winter 2016</td>
</tr>
<tr>
<td>Riverside Bridge (Zoo Drive) / 1938</td>
<td>53C1298</td>
<td>NRHP eligible; HCM #910</td>
<td>Two side widening of 8 ft each; replication of existing exterior elements.</td>
<td>EIR/EA on hold Construction schedule: To be determined</td>
</tr>
<tr>
<td>Sixth Street Viaduct / 1932</td>
<td>53C1880</td>
<td>NRHP eligible; HCM #905</td>
<td>Replacement or seismic retrofit – Bridge type under Replacement Alternative is to be identified.</td>
<td>Final EIR/EIS in preparation Construction schedule: Fall 2014 – Fall 2018</td>
</tr>
</tbody>
</table>

*Source: Los Angeles Bridge Improvement Program, 2011.*
To date, the Authority has certified the Statewide Final Program-Level EIR/EIS and the Bay Area to Central Valley Final Program EIR/EIS, which are the first and second part, respectively, of the programmatic analysis in the tiered environmental review process for California’s high-speed rail. The environmental document for the Orange County to Los Angeles segment has not been prepared; however, based on a 10 percent design drawing made available by the project proponent, the high-speed rail track would run along the west bank of the Los Angeles River at a location adjacent to the existing railroad tracks and existing 6th Street Viaduct columns.

- **State Route 710 Extension Project:** State Route (SR) 710 serves as a major north-south link in the Los Angeles County transportation network. It is heavily traveled, with a very high percentage of trucks, and congestion is increasing within the corridor. Additional congestion is created on surface streets by a 6.2-mile-long gap that begins where SR 710 ends on Valley Boulevard near the Los Angeles/Alhambra border. Motorists who wish to continue traveling north must drive on local streets through the cities of Alhambra, Los Angeles, South Pasadena, and Pasadena. SR 710 resumes at Del Mar Boulevard in the City of Pasadena and continues 0.6-mile north, where it meets the Foothill Freeway (I-210). Since the 1960s, various conceptual plans have been proposed to close the SR 710 gap; however, none were acceptable to the nearby communities and environmental interests.

In 2006, the MTA commissioned a Tunnel Feasibility Assessment Study, which concluded that constructing a tunnel to connect SR 710 is feasible. Because a tunnel connection would relieve regional and local congestion, and improve air quality, it gained the support of MTA, Caltrans, FHWA, and SCAG. The environmental review process for this project has not officially begun. It is not likely that this project would be under construction at the same time as the 6th Street Viaduct Improvement Project.

### 3.26.5 Resources not Subject to Cumulative Impact Analysis

Based on the nature of the proposed project, the affected project area, and the impact analysis for each resource conducted for this EIR/EIS, it was determined the following resources would not be substantially impacted by the proposed project and are not at risk:

- **Community Character and Cohesion:** Construction of any project alternative, together with other proposed future foreseeable projects, would not cumulatively change the community character and cohesiveness of people residing in the project area, especially the Boyle Heights community and the Downtown Los Angeles area.

- **Utilities/Emergency Services:** Although several service utilities would be affected by construction activities, they are confined within the area adjacent to the project footprint. Once they are relocated, no cumulative effects to other service utilities would occur.
Likewise, emergency services would be affected only during the construction period. The project does not result in permanent effects to utilities or emergency services.

**Hydrology and Floodplain:** The area within the proposed construction zone is fully built-out; therefore, no substantial increase in runoff flow is expected. Construction-related nuisance flows would be diverted into detention basins to be treated before discharging to existing storm drains. Construction-site sheet flows would be retained to prevent discharge during construction. No cumulative impacts would occur during construction or operation of the project.

Based on the hydraulic analysis prepared for Alternative 3 (viaduct replacement), no impact to river flow would occur; therefore, no cumulative impacts on river hydraulics are anticipated.

**Water Quality and Stormwater Runoff:** Stormwater runoff occurring during construction and operation of the proposed project would be localized and confined within the site during construction and within the project area after construction is complete. No cumulative impacts pertaining to stormwater runoff would occur. Special water pollution control Best Management Practices (BMPs) would be employed to minimize impacts to the Los Angeles River water quality. No cumulative impacts to water quality are anticipated.

**Geology/Soils/Seismicity:** Seismically induced impacts are localized and would not result in any cumulative impacts as a result of the proposed project implementation.

**Paleontology:** Impacts associated with paleontological resources are localized. No cumulative impacts are anticipated as a result of the proposed project implementation.

**Hazardous Materials and Wastes:** Impacts associated with hazardous materials and wastes are localized. No cumulative impacts are anticipated as a result of the proposed project implementation.

**Energy:** Energy effects would occur during the construction period. No long-term cumulative effects are anticipated.

**Biological Environment:** Impacts associated with biological resources for this project are minimal and localized. No cumulative impacts are anticipated as a result of the proposed project implementation.

**Noise and Vibration:** 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. Since no fragile or historic buildings are located within 50 ft of the proposed construction site, no adverse impacts from construction vibration to
adjacent buildings are expected. No cumulative noise and vibration impacts are anticipated.

As discussed throughout this chapter, under the No Action Alternative, the viaduct may be determined to be unserviceable by the City of Los Angeles Bureau of Engineering and Caltrans due to advanced ASR deterioration or a major seismic event in the future, neither of which can be predicted. Under such an event, the City would take the viaduct out of service and seek emergency funding sources to replace it. It is estimated that the time to identify funding, complete design, acquire ROW, and construct a new viaduct would range between 5 and 7 years from the time it was placed out of service. The impacts during construction would be similar to Alternative 3 with the exception that the timing of when the viaduct would be placed out of service is unknown. In this scenario, the City would replace the viaduct under any circumstance.

3.26.6 Resources Analyzed for Cumulative Effects

Based on the nature of the proposed project, the affected project area, and the impact analysis for each resource conducted for this EIR/EIS, it was determined the following resources could be adversely affected when combined with the potential impacts from other related projects:

- Land Use and Planning
- Community Impacts
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Cultural Resources
- Visual Resources
- Air Quality

Analysis of impacts to these resources is presented in the sections that follow.

3.26.6.1 Land use and Planning

Resource Study Area

The project is located at the boundary of the City of Los Angeles General Plan’s Central City North and Boyle Heights Community Planning areas. The project area is located within the CRA/LA redevelopment area where industrial uses are preserved. The geographical area identified for land use and planning impact assessment covers the area that would potentially be either directly or indirectly affected by the proposed project activities, including the localized area within the project limits and approximately a 0.5-mile radius from the 6th Street Viaduct.

Health and Historical Context

The resource study area is located within the City of Los Angeles General Plan’s Central City North and Boyle Heights Community Planning areas. Land uses along the north and south sides of the viaduct are predominantly industrial and commercial. Railroad corridors exist along the
east and west banks of the river. Rehabilitation, reuse, and redevelopment activities in the downtown area are progressing very rapidly, while such activities in the Boyle Heights community are less apparent, which is evident from current property conditions in the vicinity. The area near the proposed project site west of the Los Angeles River, in the Arts District of downtown, has seen several adaptive reuse renovations of abandoned industrial buildings, which introduces residential uses to the primarily industrial district by converting the spaces into live/work units. Redevelopment within the project study area with the goal to preserve industrial land uses has been undertaken under the management of the CRA/LA. Improvements to the Los Angeles River corridor, including the area adjacent to the project study area, have been planned, and the guidelines for revitalization were developed as contained in the LARRMP; however, the LARRMP has not been integrated into the City of Los Angeles General Plan, and zoning or land use designations have not been revised to reflect the proposed elements of the plan. As of this date, there is no implementation schedule, so elements of the plan in the study area cannot be predicted in the foreseeable future.

**Project Impacts**
The project’s land use and planning impacts for each alternative are discussed in detail in Section 3.2.2 of this EIS/EIR and summarized below.

**Alternative 1 – No Action**
There would be no project impacts on land use or planning as long as the viaduct remains in service. If the viaduct was determined unserviceable, the City would seek emergency funding sources to replace it. Impacts on land use and planning as a result of new viaduct construction would be similar to Alternative 3 – Replacement.

**Alternative 2 – Retrofit**
- Alternative 2 would require some right-of-way (ROW) acquisition, including industrial properties, which would be inconsistent with the City of Los Angeles Community Plan objective of preserving the industrial area and employment.
- Alternative 2 would not provide the City with an opportunity to designate 6th Street along the 6th Street Viaduct as a bikeway because the viaduct does not have sufficient width for shoulders that can accommodate bicycles.

**Alternative 3 – Replacement**
Displacement of several industrial properties for ROW under Alternative 3 would be inconsistent with the City of Los Angeles Community Plan objective of preserving the industrial area and employment.
Reasonably Foreseeable Actions
Several development projects and transportation improvement projects have been constructed or planned within the same locality as the proposed project, as presented in Section 3.26.4. The following related projects, including Westside Subway Extension Project (Division 20 South Rail Yard), High-Speed Rail Project, and LARRMP, together with the proposed project, could impact land use within the vicinity of the 6th Street Viaduct on a cumulative basis. In turn, implementation of the proposed project could support several of the housing development and community redevelopment projects by providing a safe transportation link between Downtown Los Angeles and Boyle Heights.

Cumulative Impacts

Alternative 1 – No Action
There would be no cumulative impacts on land use or planning as long as the viaduct remains in service. If the viaduct was determined unserviceable, the City would seek emergency funding sources to replace it. Cumulative impacts on land use and planning as a result of new viaduct construction cannot be determined since the timing of such an event is unknown and other projects contributing to cumulative effects might be different from those listed in Section 3.26.4 at the time of occurrence.

Alternative 2 – Retrofit
The project area is located within the CRA/LA redevelopment area where there is a goal to preserve industrial uses under the Community Plan; however, several industrial buildings within the project area are being converted to residential lofts. Implementation of Alternative 2 would result in two business relocations to accommodate the retrofit construction. These acquisitions would not require a revision to any of the adopted plans or policies at the local and regional levels; however, conversion of industrial land uses to accommodate the retrofit construction would conflict with the City of Los Angeles’ industrial land use policies. This impact, along with the potential conversion of some industrial land uses that would be required as part of the foreseeable future projects (e.g., the future high-speed rail and Westside Subway Extension – Division 20 South Rail Yard projects), would constitute a cumulative adverse impact on industrial land uses.

Alternative 3 – Replacement
The project area is located within the CRA/LA redevelopment area where industrial uses are preserved; however, several industrial buildings within the project area are being converted to residential lofts. Implementation of Alternative 3 would require acquisition of several industrial buildings; the number of affected parcels would depend on the alignment chosen, as discussed in Section 3.4.3 of this EIR/EIS. This acquired land would be used to construct the viaduct structure and would be reserved as an easement (see Figure 3.4-3). The acquisition of industrial buildings...
to accommodate the retrofit construction would conflict with the City of Los Angeles’ Industrial Land Use Policy. This impact, along with the conversion of industrial land uses as part of the foreseeable future projects (e.g., the future high-speed rail and Westside Subway Extension – Division 20 South Rail Yard projects), would constitute a cumulative adverse impact on industrial land uses; however, the unused portion of the acquired land under the proposed project could potentially be redeveloped for industrial use.

Although implementation of Alternative 3 would have an adverse cumulative impact on land use and planning, it would provide the City with an opportunity to implement certain elements of the LARRMP. Land use and zoning changes associated with LARRMP implementation would have to be considered and approved by the City of Los Angeles Planning Department independent from the proposed project.

Avoidance, Minimization, or Mitigation Measures
To minimize cumulative land use conflicts within the project area, the City would encourage planning departments, divisions, agencies, and interested parties having responsibility for planning and policy development within the Central City North and Boyle Heights Community Plan areas including, but not limited to, the City of Los Angeles Planning Department, LABOE Architecture Division, CRA/LA, LARRMP committees, and Friends of Los Angeles River, to discuss and develop or modify the land use plan and policy covering the two planning areas affected, taking into account the need to proceed with the proposed project and other approved plans and policies.

3.26.6.2 Community Impacts
Resource Study Area
The components of community impacts that could have the potential to be affected on a cumulative basis include community disruption and environmental justice consideration. No change to community characters and cohesion are anticipated. The resource study area for community impact assessment includes the localized area within the project limits and surrounding vicinity. The primary impact area consists of the area in the immediate vicinity of the 6th Street Viaduct, which includes business and commercial buildings along the front row of the viaduct footprint. These properties would be subject to direct effects, such as property acquisition or disruption from construction activities. Indirect impact areas would be dispersed and include areas likely to experience increased vehicle movements associated with construction haul routes and detoured traffic during the bridge closure. The indirect impact zone would be bound by 1st Street and 7th Street to the north and south, respectively, and Soto Street and Central Avenue to the east and west, respectively.
Health and Historical Context

The City of Los Angeles has a long history dating back to 1769 when the first permanent settlement occurred. Suburban development in the project study area began in the 1880s. There are two neighborhoods within the project area – the Downtown Arts District on the west side of the proposed project and the community of Boyle Heights on the east side. The Downtown Arts District, previously known as the Warehouse District, occupies the eastern side of Downtown Los Angeles. Its borders are roughly Alameda Street on the west, US 101 on the north, the Los Angeles River on the east, and 7th Street on the south. The Arts District is filled with older industrial and former railroad buildings. In 1981, the City of Los Angeles passed its "Artists in Residence" or "AIR" ordinance, which allowed residential use of formerly industrial buildings (artists had long used such spaces as living quarters illegally, and the AIR law sought to bring this practice into legality and regulation). In 2005, a group of long-time Arts District property owners worked with the Central City East Association (CCEA) to form the Arts District Business Improvement District (BID), which would provide much-needed services in the area: security, maintenance, marketing, and advocacy. Loft-style apartments and condos in restored industrial buildings now dot the landscape, but the Arts District is still home to a major rail yard, cold storage, warehouses, food processing, furniture and fashion design/manufacturing, personal storage, government facilities, and film locations.105

The Boyle Heights community is located east of the Los Angeles River. Boyle Heights was developed as one of the first residential suburbs in Los Angeles when the railroads were constructed along the Los Angeles River. It was initially settled by European immigrants and later by Mexican laborers employed by the railroads and related industrial sector. Some of the first City public housing projects were constructed in Boyle Heights, and much of the existing housing stock is in poor condition.106 The community was segmented into four smaller areas and one larger area by the construction of four major freeways between 1940 and 1960. In addition, the Los Angeles River divides Boyle Heights from the downtown area. The bridges over the Los Angeles River, including the 6th Street Viaduct, have long served as a means of connecting Boyle Heights residents to downtown. Today, Boyle Heights is a predominantly Hispanic community.

Community characteristics and socioeconomic characteristics of the study area are described in Section 3.3.2 of this EIS/EIR.

Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

**Project Impacts**
The project impacts for each alternative are discussed in detail in Sections 3.3, 3.4, and 3.5 of this EIR/EIS and summarized below.

**Alternative 1 – No Action**
There would be no project impacts on the community as long as the viaduct remains in service. If the viaduct was determined unserviceable, the City would seek emergency funding sources to replace it. Impacts to the community as a result of new viaduct construction would be similar to Alternative 3 – Replacement.

**Alternative 2 – Retrofit**
- Temporary blockage of roadways and local detours would occur during construction due to the lane closures and construction equipment movement.
- Alternative 2 would require acquisition of two properties.
- Businesses and residents near the construction zone would experience a higher level of impacts over the prolonged period of time than other groups of people who would also benefit from the proposed project.

**Alternative 3 – Replacement**
- Construction would require closure of the 6th Street Viaduct for 4 years. Access restrictions to remaining businesses would occur during demolition and construction activities.
- Alternative 3 would require acquisition of up to 11 properties.
- Businesses and residents near the construction zone would experience a higher level of impacts over the prolonged period of time than other groups of people who would also benefit from the proposed project.

**Reasonably Foreseeable Actions**
The Westside Subway Extension – Division 20 South Rail Yard Project, future high-speed rail project, and LARRMP, together with the proposed project, would pose an elevated level of community impacts within the vicinity of the 6th Street Viaduct on a cumulative basis, as discussed below.

**Cumulative Impacts**

**Alternative 1 – No Action**
There would be no cumulative impacts on the community as long as the viaduct remains in service. If the viaduct was determined unserviceable, the City would seek emergency funding sources to replace it. Cumulative community impacts as a result of new viaduct construction under this scenario cannot be accurately determined since the timing is unknown and other
projects contributing to cumulative effects might be different from those listed in Section 3.26.4 at the time of occurrence.

**Alternative 2 – Retrofit**

Community impacts from Alternative 2 construction would include temporary access control and business disruption from construction materials delivery and other activities; traffic congestion within and nearby the construction zone and along the construction material hauling routes; air pollutant emissions from construction activities; and temporary noise-level elevations from construction equipment operations. The level of these impacts would escalate if the construction period overlaps with other construction projects in the vicinity. Based on the known projects listed in Section 3.26.4, construction of Westside Subway Extension – Division 20 South Rail Yard Project, located adjacent to the northwest side of the 6th Street Viaduct, could occur concurrently with the retrofit schedule. Low-income and/or minority populations living close to the viaduct would be subject to disproportionately higher impacts from concurrent construction activities on a cumulative basis. Once construction of each project is complete, there would be no disproportionate impacts to low-income and/or minority populations on a cumulative basis when taking into account other past, current, or future foreseeable projects listed in Section 3.26.4 because the proposed project would enhance public safety for local residents and businesses who are the major users of the viaduct. A seismically safe viaduct would support other planning and development goals within the locality.

As discussed under Section 3.26.6.1 – Land Use above, implementation of Alternative 2 would result in property acquisition of two businesses within the viaduct footprint to accommodate the retrofit construction. Although the impacts to these two properties are not considered adverse because one owner is already out of business and one could be relocated nearby, implementation of this project, along with other reasonably foreseeable future projects (e.g., future high-speed rail and Westside Subway Extension – Division 20 South Rail Yard projects), could cause more businesses to be relocated and reduce the available industrial land use within the project area, which would be inconsistent with the City of Los Angeles Industrial Land Use Policy. In addition, implementation of the planned LARRMP could also result in conversion of additional industrial land along each side of the river into recreational uses. Impacts to area businesses could be cumulatively significant with implementation of the future foreseeable projects; however, prior to implementation of any future project, an environmental impact analysis would be completed to identify the level of impact and appropriate mitigation measures.

**Alternative 3 – Replacement**

Community impacts from Alternative 3 construction would include traffic detours as a result of viaduct closure; temporary access control and business disruption from construction materials delivery and other activities; traffic congestion within and nearby the construction zone and
along the construction material hauling routes; air pollutant emissions from construction activities; and temporary noise-level elevation from construction equipment operations. The level of these impacts would escalate if the construction period overlaps with other construction projects in the vicinity. Based on the known projects listed in Section 3.26.4, construction of Westside Subway Extension – Division 20 South Rail Yard Project, located adjacent to the northwest side of the 6th Street Viaduct, could occur concurrently with the viaduct replacement. Low-income and/or minority populations living close to the viaduct would be subject to disproportionately higher impacts from concurrent construction activities on a cumulative basis. Close coordination between the City of Los Angeles and MTA would be required to arrange the heavy construction phases of the two projects to occur at different times to minimize impacts to local residents and businesses.

Once the construction of each project is complete, there would be no disproportionate impacts to low-income and/or minority populations on a cumulative basis when taking into account other past, current, or future foreseeable projects listed in Section 3.26.4 because the proposed project would upgrade the seismic and design deficiencies of the 6th Street Viaduct to current standards, thus providing beneficial impacts to residents, businesses, and other projects on a cumulative basis. With the wider sidewalks and shoulders for bicycle lanes incorporated into the project design, pedestrians and bicyclists would benefit from the proposed project implementation.

As discussed under Section 3.26.6.1 – Land Use, implementation of Alternative 3 would require the relocation of several businesses located adjacent to the viaduct. Implementation of this project, along with other reasonably foreseeable future projects (e.g., future high-speed rail and Westside Subway Extension – Division 20 South Rail Yard projects), would cause more businesses to be relocated and reduce the available industrial land use within the project area, which would be inconsistent with the City of Los Angeles Industrial Land Use Policy. In addition, implementation of the planned LARRMP would also result in conversion of additional industrial land along each side of the river into recreational uses. Impacts to area businesses would be cumulatively significant with implementation of the future foreseeable projects. As indicated earlier, prior to implementation of any future project, an environmental impact analysis would be completed to identify the level of impact and appropriate mitigation measures.

**Avoidance, Minimization, or Mitigation Measures**

To minimize cumulative community disruption impacts, the City would continue the outreach program to notify residents, businesses, and any service providers within the area and to inform surrounding communities about the project construction schedule, relocation plans and assistance programs, traffic-impacted areas and the TMP, and other relevant project information. The outreach program would include, but not be limited to, establishing a project hotline, mailing
information fliers or newsletters, organizing community meetings, and posting project information onsite and on the City’s Web site.

In addition, the City would participate in the Downtown Construction Traffic Management Committee, which consists of representatives from planned projects, to develop a construction plan that minimizes community impacts. The construction plan may include, but would not be limited to, the following:

- Construction schedule
- Designated hauling routes
- Traffic lane closure schedule
- Designated detour routes

The committee would meet on a regular basis to discuss project progress, problems confronted, and issues to be resolved.

### 3.26.6.3 Traffic and Transportation/Pedestrian and Bicycle Facilities

#### Resource Study Area

The resource study area for cumulative impact analysis related to traffic and transportation/pedestrian and bicycle facilities includes the intersections within and nearby the project limits (as designated for study under the traffic impact analysis), and along the designated detour routes to be used during project construction: 1st Street and 7th Street to the north and south, respectively, and Soto Street and Central Avenue/Alameda Street to the east and west, respectively.

#### Health and Historical Context

The 6th Street Viaduct has served as a viable east-west link between Boyle Heights and Downtown Los Angeles since it opened in 1933. Today, 6th Street, within the project study area, is designated as a Secondary Highway. It carries an average of 13,260 cars daily. In the project vicinity, 6th Street/Whittier Boulevard is directly connected to four major north-south streets – Central Avenue and Alameda Street located to the west of the viaduct and Boyle Avenue and Soto Street located to the east. Sixth Street is connected to US 101 through a NB on-ramp immediately east of the project limit. The area surrounding the project area is fully developed with residential, commercial, and industrial buildings.

#### Project Impacts

The project impacts for each alternative are discussed in detail in Section 3.7.3 of this EIS/EIR and are summarized below.
Alternative 1 – No Action
There would be no project impacts to traffic and transportation as long as the viaduct remains in service. If the viaduct was determined unserviceable, the City would seek emergency funding sources to replace it. In this scenario, the City would replace the viaduct under any circumstance. Traffic and transportation impacts during construction of the new viaduct would be similar to Alternative 3, but for a longer duration. These impacts would end once construction is completed.

Alternative 2 – Retrofit
- Construction would cause localized, temporary traffic disruption, sidewalk blockage, and parking space obstruction.
- The possible loss of some public parking spaces underneath the viaduct and along the local streets nearby would create inconvenience to area residents and businesses.
- There would be minor disruption to public transit operations due to partial lane closures on the 6th Street Viaduct during construction.

Alternative 3 – Replacement
- 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. Temporary access restrictions would occur on streets around the construction zone. Sidewalk closures would require rerouting of pedestrians.
- The loss of approximately 50 public parking spaces underneath and around the viaduct during construction would create inconvenience to area residents and businesses.
- Travel delays of 5 to 10 minutes on public transit would occur from traffic detours.

Reasonably Foreseeable Actions
Several development projects and transportation improvement projects are planned within the same locality as the proposed project, as presented in Section 3.26.4. Construction of the Westside Subway Extension – Division 20 South Rail Yard Project and the Boyle Heights Mixed-Use Project at the same time as the proposed project would result in cumulative traffic and circulation impacts around the construction zones and along the construction material hauling routes. Once construction of each project is complete, there would be no cumulative traffic impacts within the locality resulting from implementation of these projects.

Cumulative Impacts
Alternative 1 – No Action
There would be no cumulative impacts to traffic and transportation to the surrounding area as long as the viaduct remains in service. If the viaduct was determined unserviceable, the City would
seek emergency funding sources to replace it. Traffic and transportation cumulative impacts as a result of new viaduct construction cannot be accurately determined since the timing is unknown and other projects contributing to cumulative effects might be different from those listed in Section 3.26.4 at the time of occurrence.

**Alternative 2 – Retrofit**

Traffic disruption during the 2.5-year construction phase of this alternative is expected. Temporary traffic lane closures and a transit route detour would impact commuters, local businesses, residents, and people using area public service facilities at locations near the construction sites and along the detour routes. Impacts to pedestrian safety near the construction zones would be potentially increased. Material hauling in and out of the construction site would further obstruct the local traffic system. The level of these impacts would escalate if the construction period overlaps with other construction projects in the vicinity. Based on the known projects listed in Section 3.26.4, construction of the Westside Subway Extension – Division 20 South Rail Yard Project, located adjacent to the northwest side of the 6th Street Viaduct, would occur concurrently with the retrofit schedule. Close coordination between the City of Los Angeles and MTA would be required to arrange the heavy construction phase of the two projects to occur at different times to minimize impacts to local traffic and circulation, pedestrian movement, and bicycle uses. Implementation of the TMP for the viaduct and related street improvements would minimize cumulative traffic disruption within the affected area.

Once construction is complete, no cumulative effects on traffic and transportation from the retrofitted viaduct operation would occur because there would be no increase in traffic capacity. The 6th Street Viaduct would continue to serve as a link between the Boyle Heights Community and the Downtown area for some 30 years, which is the expected life-span of the retrofitted viaduct. Thereafter the viaduct would need to be replaced due mainly to advanced ASR damage.

Since the 6th Street Viaduct would not be widened under this alternative, pedestrians and bicyclists would have to continue using the substandard sidewalks on a sharing basis; therefore, this alternative, would not support implementation of the 2010 Bicycle Plan.

**Alternative 3 – Replacement**

Traffic disruption from Alternative 3 would be similar to Alternative 2, but it would be greater in extent and duration because the river crossing would be closed for up to 4 years. The impacts would extend to residents and businesses located along the detour routes, defined as 1st Street and 7th Street to the north and south, respectively, and Soto Street and Central Avenue/Alhambra Street to the east and west, respectively. The level of traffic impacts would escalate if viaduct construction overlaps with other construction projects in the vicinity, including construction of the first phase of the Boyle Heights Mixed-Use Project and the Westside Subway Extension –
Division 20 South Rail Yard Project. These construction projects could possibly utilize the same detour routes as the proposed project if construction activities overlapped; therefore, adverse cumulative effects to nearby residents and businesses and those residing near the detour routes could occur if Alternative 3 is constructed. Implementation of the TMP for the viaduct and related street improvements would minimize cumulative traffic disruption within the affected area.

The proposed projects that would generate trips, as listed in Section 3.26.4, would cumulatively add traffic volumes to the local roadway system in the vicinity of the proposed project after implementation. The traffic study prepared for this proposed project has accounted for the general traffic growth and foreseeable future projects within the proposed project vicinity known at the time the traffic study was conducted. No significant cumulative operational impacts from the 6th Street Viaduct Project are foreseen in the long term because the proposed project would not increase traffic capacity. Some short-term traffic generation may occur following the opening of the new viaduct, however, from interested individuals who want to view the new signature bridge in Los Angeles.

Once construction is complete, no cumulative effects on traffic and transportation from the new viaduct operation would occur because there would be no increase in traffic capacity from the viaduct. The 6th Street Viaduct would continue to serve as the link between the Boyle Heights Community and the Downtown area for the designed life of 75 years. Implementation of this alternative would upgrade the design deficiencies of the 6th Street Viaduct to current standards, thus providing beneficial impacts to residents, businesses, and other projects on a cumulative basis. With the standard sidewalks and bicycle lane incorporated into the project design, pedestrians and bicyclists would benefit from the proposed project implementation. This feature of the project would also benefit the future implementation of the LARRMP, which aims to create the connection between the bridges and the Los Angeles River.

Avoidance, Minimization, or Mitigation Measures
To minimize cumulative traffic impacts during project construction duration, 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 would also identify and provide alternate traffic detour routes, construction materials hauling routes, bus stops, transit routes and operation hours, pedestrian and bicycle routes, and residential and commercial access routes to be used during the construction period.
3.26.6.4 Visual/Aesthetic

Resource Study Area
The resource study area for visual/aesthetics impact analysis includes the viewshed area within the project limits (see details in Section 3.8.2).

Health and Historical Context
The 6th Street Viaduct has been open for services since 1933. The resource study area is within a heavily urbanized area dominated by industrial and warehouse uses, rail lines, and the concrete-lined Los Angeles River. The overall visual quality of the project area is moderately low to low because of the industrial nature of the area and its lack of vegetation and open space, which give the area low vividness, intactness, and unity. The existing viaduct does have a high visual quality because of its architectural and historic character, which creates a very vivid, or memorable, structure, although the structure has been degraded somewhat by the removal of some architectural features, the addition of infill walls, replacement of historic lampposts, and deferred maintenance over time.

Landscape units around the viaduct consist of Western Warehouse, Eastern Warehouse, River-Rail Corridor, Interstate Corridor, High-Rise Residential, Multi-Family Residential, and the 6th Street Corridor. The viaduct is also historic and is eligible for listing in the NRHP; the CRHR; as one of a thematic group of 118 “Historic Highway Arch and Other Bridges in California;” and is designated as City of Los Angeles HCM #905. No Scenic Routes are located within or near the project area.

Project Impacts
The project impacts for each alternative are discussed in detail in Section 3.8.3 of this EIS/EIR and are summarized below.

Alternative 1 – No Action
There would be no project impacts to visual resources as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. In this scenario, the City would replace the viaduct under any circumstance. It is likely that the City would use the viaduct replacement design developed thus far for this emergency replacement scenario. Impacts to visual resources as a result of the new viaduct construction would be similar to Alternative 3 – Replacement.

Alternative 2 – Retrofit
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 views under the viaduct. The view restrictions under the viaduct deck could affect activities such as filming.

**Alternative 3 – Replacement**

- Replacement of the viaduct and the subsequent loss of the landmark would impact views to the historic structure. Any of the bridge replacement concepts would alter the existing views to varying degrees. The most notable visual change from existing conditions 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, and other visual qualities experienced with the current viaduct structure.
- Modern Bridge Concepts 4, 4A, and 5 would likely include architectural lighting, which would be a noticeable addition to the nighttime viewscape.

**Reasonably Foreseeable Actions**

Several development projects and transportation improvement projects have been planned within the same locality as the proposed project. In particular, implementation of the following projects along with the proposed project, would cumulatively affect the visual landscape within the project surrounding area: the planned LARRMP Project, the Westside Subway Extension – Division 20 South Rail Yard Project, and the future High-Speed Rail Project.

**Cumulative Impacts**

**Alternative 1 – No Action**

The No Action Alternative proposes no changes to the 6th Street Viaduct or the surrounding area as long as the viaduct remains serviceable; therefore, there would be no cumulative impacts to visual resources under this alternative. If the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. In this scenario, the City would replace the viaduct under any circumstance. Under this circumstance, cumulative impacts pertaining to visual resources as a result of new viaduct construction cannot be determined since the timing is unknown and other projects contributing to cumulative effects might be different from those listed in Section 3.26.4 at the time of occurrence. In addition, it would be too speculative to assume that some or all buildings within the landscape units under study would or would not sustain damage from the same seismic event to use as basis of cumulative effect analysis.

**Alternative 2 – Retrofit**

Although the proposed retrofit scheme would alter the historic fabric of the 6th Street Viaduct, the iconic structure would still remain. Many of the other historic bridges that span the Los Angeles River have been or are in the planning stages for safety and functional improvements. With close coordination of these bridge improvement projects between the relevant agencies
concerning historic bridges within the City of Los Angeles, such as the Office of Historic Resources, Cultural Heritage Commission, and the SHPO, cumulative impacts on historic visual resources would be minimized.

**Alternative 3 – Replacement**
Under this alternative, the existing iconic 6th Street Viaduct would be removed and replaced with a new structure that would be distinctive from the surrounding monumental bridges spanning the Los Angeles River; however, the new structure would likely become a notable visual icon to the city and nearby communities. Many of the other historic bridges that span the river have been or are in the planning stages for improvements – most recently the 1st Street Viaduct, which is currently being widened. However, the other bridges do not have the ASR condition that afflicts the 6th Street Viaduct, so it is not anticipated that these bridges would need replacement for the foreseeable future; therefore, no cumulative adverse effects to surrounding visual resources are anticipated.

The greatest potential for change in the visual quality of the area lies with the LARRMP. If the Master Plan elements were developed in this stretch of the river, the resulting green space and recreational amenities created would have a positive impact on the visual quality of the area (see Figure 3.26-1). If portions of the Greening Concept objectives set forth in the Master Plan move forward, then these would add to the positive impact of the river revitalization by extending the open space into the surrounding communities on both sides of the river and incorporating the monumental Los Angeles River bridges in the overall design. However, the LARRMP has not been integrated into the city’s General Plan and there has been no rezoning; therefore, implementation of the plan elements in the proposed project area would not occur in the foreseeable future.

Among the list of other projects proposed in the area, the high-speed rail project would build an additional line of tracks on the west side of the river bank, and the Westside Subway Extension – Division 20 South Rail Yard Project would add train parking spaces at the area northwest of the viaduct. Given the highly urban and industrial nature of the development within and adjacent to the project area, it is not anticipated that these proposed projects, along with the 6th Street Viaduct Seismic Improvement Project, would appreciably change the existing character of the area.

**Avoidance, Minimization, or Mitigation Measures**
Minimization measures were identified under the direct impact section discussed in Section 3.8.4. No additional measures are required.
3.26.6.5 Cultural Resources – Historic Resources

Resource Study Area

The resource study area for cumulative impact analysis pertaining to cultural resources includes the proposed project’s Area of Potential Effects (APE), as well as other historic Los Angeles River bridges in the surrounding area.

Health and Historical Context

Based on the archaeological survey conducted as part of this project, Archaeological Resource 19-003683 is situated within the APE.

Thirty-three (33) properties in the project APE contained historic-era built resources (buildings, structures and/or objects that pre-date 1957) that were evaluated for historic significance. Based on the evaluation performed for this project, other than the 6th Street Viaduct no properties are eligible for listing in the NRHP. The viaduct was determined eligible for its association with the Los Angeles River bridge program and its extraordinary Streamline Moderne design using steel and reinforced concrete. Because the viaduct has been determined eligible for listing in the NRHP, it is also listed in the CRHR. It was also determined eligible as one of a thematic group of 118 “Historic Highway Arch and Other Bridges in California.” In addition, the 6th Street Viaduct is designated as City of Los Angeles HCM #905.
Based on the City of Los Angeles Monumental Bridges, 1900-1950 study\textsuperscript{108} commissioned by Caltrans in 2004, of the 45 bridges examined, 29 (including 6\textsuperscript{th} Street Viaduct) appeared to be significant as City of Los Angeles monumental bridges; however, the study concluded that the bridges in Los Angeles that are significant for their association with the Bureau of Engineering’s bridge program in the early to mid-twentieth century do not constitute a historic district, as defined by National Park Service guidelines for applying the NRHP criteria.

During preparation of this Final EIR/EIS, the Los Angeles Community Redevelopment Agency (CRA/LA) submitted a letter dated July 28, 2010, to the Project Development Team (PDT) indicating that an historic site survey of the Adelante Eastside Redevelopment Area was completed in July 2010. The letter included a map of a proposed “Historic District – Anderson Street” showing one building classified as “contributor” to the proposed Anderson Street District located within the 6\textsuperscript{th} Street Viaduct APE (Building No. 17 on Figure 3.4-2). This building was previously determined to not be eligible for the NRHP by Caltrans based on the 2007 HRER prepared for the 6\textsuperscript{th} Street Viaduct Seismic Improvement Project.

In response to the CRA/LA letter, the PDT contacted CRA/LA staff to obtain detailed information about the survey and any planned local nomination/certification process for the proposed district. The CRA/LA provided an incomplete report entitled “Intensive Historic Resources Survey, Adelante Eastside Redevelopment Area, July 2008,” and supporting California Department of Parks and Recreation (DPR) 523 forms related to the proposed Anderson District, in January 2011. This report contains a different map as provided in the original letter (dated July 2010); it identifies property Nos. 17 and 14 (see Figure 3.4-2) as individually eligible but not as a district contributor. Similar to Building No. 17, Building No. 14 was previously determined to not be eligible for the NRHP by Caltrans based on the 2007 HRER prepared for the 6\textsuperscript{th} Street Viaduct Seismic Improvement Project.

A review of the report entitled “Intensive Historic Resources Survey, Adelante Eastside Redevelopment Area” and the Historic Property Survey Report (HPSR) for the 6\textsuperscript{th} Street Viaduct Seismic Improvement Project led to the conclusion that the only historic property within the project area is the 6\textsuperscript{th} Street Viaduct.

**Project Impacts**

The project impacts for each alternative are discussed in detail in Section 3.9.3 of this EIS/EIR and are summarized below.

Chapter 3 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Alternative 1 – No Action
There would be no project impacts to historic resources within the APE under this alternative as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. In this scenario, the City would replace the viaduct under any circumstance. It is likely that the City would use the viaduct replacement design developed thus far for this emergency replacement. Impacts to cultural resources as a result of the new viaduct construction would be similar to Alternative 3 – Replacement.

Alternative 2 – Retrofit
- The project area has the potential for buried archaeological materials to be encountered during ground disturbance.
- Retrofitting would alter and/or destroy historic materials, features, and spatial relationships that characterize the viaduct, resulting in an adverse effect to a designated historic resource.

Alternative 3 – Replacement
- The project area has the potential for buried archaeological materials to be encountered during ground disturbance.
- Replacement of the 6th Street Viaduct would be an adverse effect.
- The viaduct would be removed from the City-wide inventory of historic bridges over the Los Angeles River.

Reasonably Foreseeable Actions
Several development projects and transportation improvement projects have been planned within the same locality as the proposed project, including the planned LARRMP Project, the Westside Subway Extension – Division 20 South Rail Yard Project, and the future High-Speed Rail Project, as presented in Section 3.26.4. Implementation of these projects and other major projects in the region, such as the SR-710 Gap Closure project, along with the proposed project, could cumulatively affect historic resources within the City of Los Angeles.

Several historic bridges have been identified and programmed for improvement by the LABOE Bridge Improvement Program as summarized in Table 3.26-1.

Cumulative Impacts
Alternative 1 – No Action
The No Action Alternative proposes no changes to the 6th Street Viaduct or the surrounding area as long as the viaduct remains serviceable; therefore, there would be no cumulative impacts to historic resources under this alternative scenario. If the viaduct was determined to be unserviceable due to ASR and/or earthquake damage, the City would seek emergency funding sources to replace it. In this scenario, the City would replace the viaduct under any circumstance.
Under this circumstance, cumulative impacts pertaining to historic resources as a result of new viaduct construction cannot be determined since the timing is unknown and other projects contributing to historic resources cumulative effects might be different from those listed in Section 3.26.4 at the time of occurrence. In addition, it would be too speculative to assume that some or all historic buildings and historic bridges within the City of Los Angeles would or would not sustain the damage from the same seismic event as basis for cumulative effect analysis.

**Alternative 2 – Retrofit**

The following projects listed in Section 3.26.4 would likely have their APE overlap with the APE of the 6th Street Viaduct Project: the planned LARRMP Project, the Westside Subway Extension – Division 20 South Rail Yard Project, and the future High-Speed Rail Project. There is the potential that these projects would affect archaeological and historical resources within the overlapping APEs as part of the construction activities. Since the 6th Street Viaduct retrofit alternative would not result in the loss of any archaeological and historical resources within its APE, there would be no cumulative impacts as a result of the implementation of these projects together with the 6th Street Viaduct.

There are several bridges currently on the improvement list of the LABOE Bridge Improvement Program, as shown in Table 3.26-1. Impacts to archaeological resources near individual bridges are limited to the project construction areas; however, improvements to bridges programwide, combined with other known projects within the vicinity of Downtown Los Angeles, could result in cumulative effects to archaeological resources.

The 6th Street Viaduct was determined eligible for listing in the NRHP and CRHR on an individual basis. Since there is no historic district associated with the Los Angeles Monumental Bridges, implementation of Alternative 2 would not affect any historic district on a cumulative basis. The 6th Street Viaduct was also determined eligible as one of a thematic group of 118 “Historic Highway Arch and Other Bridges in California.” Implementation of Alternative 2 would not result in the loss of the 6th Street Viaduct; therefore, it would not likely affect the thematic group’s eligibility.

Implementation of Alternative 2 would not result in the removal of the 6th Street Viaduct from the group of HCM-designated bridges; therefore, no cumulative effects on HCM-designated bridges within the City would occur.

**Alternative 3 – Replacement**

The following projects listed in Section 3.26.4 would likely have their APE overlap with the APE of the 6th Street Viaduct Seismic Improvement Project: the planned LARRMP Project, the Westside Subway Extension – Division 20 South Rail Yard Project, and the future High-Speed Rail Project. There is the potential that these related projects would affect archaeological and
Ch
apter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

historical resources within the overlapping APEs as part of the construction activities. Since the implementation of the Replacement Alternative would not result in the loss of the archaeological resources within its APE, the Replacement Alternative would not contribute to cumulative impacts on archaeological resources when implemented together with other related projects. Implementation of the Replacement Alternative would result in the loss of the historic 6th Street Viaduct.

Implementation of the Westside Subway Extension – Division 20 South Rail Yard Project would not result in the loss of any historic property. However, no information about the effects to historic properties from the planned LARRMP Project and the future High-Speed Rail Project are known at this time. Therefore, no cumulative impacts on historic resources can be determined.

The 6th Street Viaduct was determined eligible for listing in the NRHP and CRHR on an individual basis. Since there is no historic district associated with the Los Angeles Monumental Bridges, implementation of Alternative 3 would result in destruction of the 6th Street Viaduct, but it would not affect any historic district on a cumulative basis. The 6th Street Viaduct was also determined eligible as one of a thematic group of 118 “Historic Highway Arch and Other Bridges in California.” Implementation of Alternative 3 would result in destruction of the 6th Street Viaduct, but it would not likely affect the thematic group’s eligibility.

The 6th Street Viaduct is also designated City of Los Angeles HCM #905, as one of 11 historic Los Angeles River bridges (HCM #900 – #910). An article by Ken Bernstein, Office of Historic Resources (OHR) Manager, on the OHR Web site, notes that on January 30, 2008, the Los Angeles City Council approved designation of these Los Angeles River bridges as HCMs. Built between 1909-1944, most of these bridges were constructed by the LABOE, under the bridge building program of Merrill Butler, Engineer of Bridges and Structures from 1923-1963. The themes that these monumental river bridges convey, according to an OHR staff presentation to the Cultural Heritage Commission in September 2007, include the City Beautiful Movement, relation to the City Municipal Art Commission (predecessor to the Cultural Affairs Commission), and engineering and technical innovations; furthermore, the 6th Street Viaduct is transitionally important in that it established the streamline moderne/art deco design principles of other Works Progress Administration (WPA) bridges (e.g., Riverside-Zoo Drive Bridge-HCM #910) beginning in the mid 1930s.

Among the 11 historic Los Angeles River bridges, six are on the list for proposed improvements under the BIP, 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). Alteration by widening or retrofit of some of these bridges or replacement of others, namely Riverside Bridge at Figueroa Street and 6th Street Viaduct, even with mitigation measures, could adversely affect the thematic context of these monumental river bridges. Specifically, the 6th Street Viaduct, with its unique dual steel through-arch design, transitional moderne/art deco design, and by virtue of being the largest of the Los Angeles River bridges built near the end of that era, certainly contributes strongly to these themes, and its removal would impact the City’s HCM bridges on a cumulative basis.

Avoidance, Minimization, or Mitigation Measures
To minimize cumulative impacts to cultural resources, the City would implement mitigation measures stipulated in the Section 106 Memorandum of Agreement (MOA) for the proposed project in cooperation with the SHPO and Caltrans, as outlined in Section 3.9.4 of this EIR/EIS.

3.26.6.6 Air Quality
Resource Study Area
The resource study area for cumulative impact analysis pertaining to air quality includes the area within the South Coast Air Basin (SCAB).

Health and Historical Context
The 6th Street Viaduct is located in Los Angeles, within the SCAB. The South Coast Air Quality Management District (SCAQMD) has jurisdiction over air quality issues within the SCAB. While the SCAB has some of the most unhealthy air quality in the nation, air quality within the basin continues to show improvement. Ambient air quality near the closest monitoring station to the project site is described in Section 3.15.2 of this EIR/EIS.

Project Impacts
The project impacts for each alternative are discussed in detail in Section 3.15.3 of this EIS/EIR and are summarized below.

Alternative 1 – No Action
There would be no project impacts to air quality under this alternative as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. In this scenario, the City would replace the viaduct under any circumstance. Impacts to air quality as a result of the new viaduct construction would be similar to Alternative 3 – Replacement.
Chapter 3  Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

**Alternative 2 – Retrofit**
The air quality analysis projected emissions for the worst-case day (i.e., viaduct closed with highest number of equipment up on running). Under this condition, which may not occur under Alternative 2 over a prolonged period of time, the regional emissions of nitrogen oxides (NO\textsubscript{X}) would exceed the daily significance threshold set forth by SCAQMD.

**Alternative 3 – Replacement**
The air quality analysis projected emissions for the worst-case day (i.e., viaduct closed with highest number of equipment running). Under this condition, the regional emissions of NO\textsubscript{X} would exceed the daily significance threshold set forth by SCAQMD.

**Reasonably Foreseeable Actions**
As presented in Section 3.26.4, some development projects and transportation improvement projects are planned to be constructed within the same locality as the proposed project and during a similar timeframe, such as the Westside Subway Extension – Division 20 South Rail Yard Project and the Boyle Heights Mixed-Use Project. Construction of these related projects, along with the proposed project, concurrently could cumulatively affect air quality during construction.

**Cumulative Impacts**

**Alternative 1 – No Action**
There would be no cumulative impacts to air quality under this alternative as long as the viaduct remains in service. If the viaduct was determined to be unserviceable, the City would seek emergency funding sources to replace it. In this scenario, the City would replace the viaduct under any circumstance. Cumulative impacts on air quality would be similar to Alternative 3 – Replacement. However, a conformity determination cannot be made due to the uncertainty of the timing of such an event.

**Alternative 2 – Retrofit**
Cumulative air pollutant emissions could occur if several projects in the vicinity of the viaduct project are under construction at the same time. Air pollutant emissions from construction equipment operations, construction materials delivery, debris disposal, and worker commutes would additively impact the air quality of the locality, which is part of the SCAB. For instance, the overall criteria pollutant emissions, including CO, ROG, NO\textsubscript{X}, SO\textsubscript{X}, and PM\textsubscript{10}, could exceed the threshold levels established by SCAQMD. Extended exposure to air pollutants above the threshold levels could result in some adverse health effects on area residents.
The cumulative effects on air quality from Alternative 2 would occur during the 2.5-year construction period. The mitigation measures described under Section 3.15.4 would minimize the contribution of construction-related emissions from the proposed project.

**Alternative 3 – Replacement**

The cumulative effects on air quality from the proposed project would be similar to Alternative 2, but they would occur over a 4-year period. The mitigation measures described under Section 3.15.4 would minimize the contribution of construction-related emissions from the proposed project.

Implementation of Alternative 3 would not increase traffic capacity; therefore, no cumulative impacts as a result of project operation would occur. As stated in Section 3.15.3.1, the proposed project is included in the 2008 RTIP and is consistent with the 2008 Regional Transportation Plan (RTP) policies, programs, and projects. The proposed project is in conformity with the AQMP, as described in Section 3.15.3.1. The proposed project is not anticipated to cumulatively impact the air quality of the region because it was included in the regional impact analyses and the RTP.

**Avoidance, Minimization, or Mitigation Measures**

To minimize air quality cumulative impacts, the City would require the contractors to strictly adhere to the requirements of existing rules and regulations set forth by SCAQMD, as outlined in Section 3.15.4 of this EIR/EIS.
Chapter 4
California Environmental Quality Act Evaluation
Chapter 4  California Environmental Quality Act Evaluation

4.1  Determining Significance under CEQA

The proposed project is subject to federal, as well as City of Los Angeles (City) and state environmental review requirements because the City proposes the use of federal funds and the project requires a federal approval action. Project documentation, therefore, has been prepared in compliance with 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. Federal Highway Administration’s (FHWA) responsibility for environmental review, consultation, and any other action required in accordance with NEPA and other applicable federal laws for this proposed project is being, or has been, carried out by 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 that significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement (EIS), or some lower level of documentation, will be required. NEPA requires that an EIS be prepared 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.

CEQA, on the other hand, does require the City to identify each “significant effect on the environment” resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report (EIR) must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list mandatory findings of significance that also require the preparation of an EIR. There are no types of actions under NEPA that parallel the mandatory findings of significance of CEQA. This chapter discusses the effects of this project and CEQA significance.
4.2 Resources Considered Not Relevant or Resulting in No Impacts

Section 3.1.3 of this EIR/EIS lists Farmland, Coastal Zone, and Wild & Scenic River, as a resource that is considered not relevant to this proposed project. The resources determined to have no impacts from project implementation, as listed in Section 3.1.4 is Growth.

Implementation of Alternative 1 – No Action would result in no impacts to any of the environmental resources under consideration as long as the viaduct remains in service; however, the Alkali Silica Reaction (ASR) causing the concrete to decompose throughout the 6th Street Viaduct would continue, resulting in further deterioration of the structure. If the viaduct may be determined to be unserviceable due to advanced ASR deterioration or a major seismic event in the future, which cannot be predicted, the City would take the viaduct out of service and seek emergency funding sources to replace it. It is estimated that the time to identify funding, complete design, acquire right-of-way, and construct a new viaduct would range between 5 and 7 years from the time it was placed out-of-service. During this time, all traffic would be temporarily detoured in a manner similar to that described for Alternative 3.

The analysis in this CEQA chapter assumes the Viaduct would remain in service under the No Action Alternative. Also, a catastrophic failure of the viaduct was not considered because it is too speculative for analysis in accordance with CEQA.

4.3 Less than Significant Effects of the Proposed Project

This section summarizes the resources that would have a less than significant impact from implementation of each project alternative. More-detailed analysis can be found in the respective sections within Chapter 3 of this document.

4.3.1 Alternative 2 – Retrofit

Traffic and Transportation/Pedestrian Facility

Alternative 2 would cause traffic disruption, sidewalk blockage, and parking space obstruction during the 2.5-year construction period. Any such effects would be highly localized, temporary, and of short duration. Implementation of a mandatory Work Area Traffic Control Plan (WATCP), outlined in the Standard Specifications for Public Works Construction and the Work Area Traffic Control Handbook, adopted by the City, would minimize this effect to a less than significant level.
Emergency Service
During the construction period, delays in emergency response time could occur due to roadway obstructions and partial closures. Implementation of the WATCP would minimize this effect to a less than significant level.

Hydrology and Floodplains
The stormwater collection design of the existing viaduct results in excessive runoff concentration during a major storm event causing clogging at the inlets located at Mateo Street. Under Alternative 2, the excessive runoff from the viaduct during major storm events would continue to occur. Impacts to existing storm drain system under this circumstance would be less than significant.

Based on the preliminary design information, no retrofit would be constructed on the center pier; therefore, the hydraulic conditions after the retrofit would be the same as existing. Impacts to the floodplain would be considered less than significant.

Water Quality
Stormwater runoff from the construction site could contain erosion-related pollutants. A Stormwater Pollution Prevention Plan (SWPPP) and Monitoring Program would be prepared and implemented prior to and during construction activities to minimize water quality impacts. Special stormwater best management practices (BMPs) would also be installed and implemented to minimize debris deposition into the river.

Since there would be no permanent treatment BMP devices installed with this alternative, all stormwater runoff from the viaduct would be directly discharged to the river without being treated, similar to the existing condition. The impact is considered less than significant.

Noise and Vibration
Construction Impacts
Noise impacts from Alternative 2 construction activities would be confined to a relatively narrow corridor extending along both sides of the roadway and corresponding to the construction sequence. Noise levels from construction activities at the nearest residences to the construction site are predicted to be well below the City’s limit of 75 A-weighted decibels (dBA). Minimal construction noise impacts are expected to occur.

During the construction period, the highest vibration levels would be caused by the impact pile driver, which would be operational during substructure construction. 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 significant impacts from construction vibration to adjacent buildings are expected to occur.

**Permanent Impacts**

No permanent impact would occur after the construction is complete since traffic volumes would not increase as a result of the retrofit.

**Energy**

Construction of the Retrofit Alternative would require one-time energy consumption to manufacture building materials for viaduct retrofit. This is required to improve public safety, and the energy consumption would not cause a substantial depletion in the supplies of nonrenewable energy resources. The impact is considered less than significant.

**Biological Resources**

The concrete-lined Los Angeles River is the only watercourse within the BSA, which is located in the Upper Los Angeles River Reach 3. No riparian vegetation or wetlands are present within the Los Angeles River segment within the BSA of the proposed project based on the field surveys conducted by the biologists in 2007 and 2010. Alternative 2 would not involve retrofit or removal of the center pier in the river. Work within the Los Angeles River channel would be minimal. The impact to biological resources within the Los Angeles River within the BSA is considered less than significant. Once the construction is complete, there would be no permanent impacts to the Los Angeles River.

No other biological resources exist within the viaduct footprint where construction activities would occur, and no mature trees would be removed; hence, no adverse impacts to wildlife or 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. Steps would be taken to remove any existing nests and/or roosts and to prevent the establishment of new nests or roosts prior to the beginning of the nesting season.

**4.3.2 Alternative 3 – Replacement**

**Utilities**

Alternative 3 could result in temporary impacts to utilities, such as an increase in utility demand and solid waste volume. Construction of Alternative 3 would cause temporary and permanent relocation of underground and overhead utility lines, such as sewer pipes and storm drain lines.
Working in close coordination with the utility providers prior to the commencement of construction to develop a relocation plan would minimize impacts to service utilities.

Construction of Alternative 3 would result in potential periodic short- and extended-term shutdown of some railroad tracks on each side of the Los Angeles River to construct the new viaduct. Written construction agreements would be entered into with the railroad companies. Close coordination with the railroads’ owners to work on the railroad during periods when specific tracks are not in active use and to avoid track closures to the extent feasible would minimize the impacts to railroad operations.

The impact to utilities is considered less than significant.

**Hydrology and Floodplains**

The new viaduct structure would be designed to adequately collect and route stormwater runoff on the viaduct to a stormwater treatment system prior to discharging to the river. As discussed in Section 3.10.4, only one out of six bridge concepts (Concept 1) would have a negative impact on the floodway as a result of the center river pier being larger than existing. If this bridge concept is selected for construction, the impact would be considered significant. None of the other bridge concepts would have a significantly larger center river pier than existing. No impacts to floodplain and flood flow would occur from these bridge concepts.

**Water Quality**

Stormwater runoff from the construction site could contain erosion-related pollutants. A SWPPP and monitoring program would be prepared and implemented prior to and during construction to minimize water quality impacts. Special BMPs would also be installed and implemented to minimize debris deposition into the river.

**Geology/Soil/Seismicity**

Alternative 3 would replace the existing severely deteriorated viaduct with a new viaduct that is designed to meet current seismic safety standards required by Caltrans.

**Noise**

Similar to Alternative 2 described above, but the impacts would occur for a longer period of time.

**Energy**

Construction of the Replacement Alternative would require one-time energy consumption to construct the new viaduct. Consumption of energy resources is required to improve public safety and would not cause a substantial depletion in the supplies of nonrenewable energy resources.
The impact is considered less than significant. The new viaduct would also have additional lighting features that would consume electrical power during operation. The electrical power required for this new lighting would be provided by LADWP, and the energy consumption would not cause a substantial depletion in the supplies of nonrenewable resources.

**Biological Resources**

Alternative 3 would result in temporary impacts to approximately 1.5 acres of Waters of the U.S., as shown in Figure 3.19-2. Temporary impacts include physical impacts from construction activities, including bridge improvement and water diversion activities.

As part of the new viaduct construction, the existing center pier would be removed. A summary of the permanent direct impacts, resulting from the fill associated with the center pier of the viaduct, is provided in Table 3.19-1 and graphically shown in Figure 3.19-2. Most bridge concepts would have no or negligible net impact to the Los Angeles River waterway (i.e., they avoid placement of fill in the U.S. waters) except for Concept 1, which would result in an additional impact. Concept 4 has been identified as the preferred alternative, and it would not place additional fill in U.S. waters. The Los Angeles River in this area is concrete-lined channel, so there would be no soft bottom habitat impact. Because no natural conditions or native vegetation types are present in this portion of the channel or in the immediate vicinity, it does not provide suitable habitat for any special-status plant or wildlife species. The site also does not contain any federally designated critical habitat areas. Due to the extremely limited biological value of the concrete-lined waterway, the minimal amount of fill is not expected to degrade any local species habitats or other biological resources, and the impact would be considered less than significant.

Ornamental trees within the biological survey area have a limited potential to support nesting birds that 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. Measures for protection of potential cliff swallows and roosting bats would be similar to Alternative 2 described above.

### 4.4 Significant Environmental Effects of the Proposed Project

This section summarizes the environmental resources that are determined to be significantly affected by implementation of the proposed project, as outlined in Chapter 3 of this document. Note that with mitigation incorporated, some of these significant environmental effects could be minimized to a less-than-significant level.
4.4.1 Alternative 2 – Retrofit

Land Use
Alternative 2 would not have any conflict with applicable land use plans and policies and would not require modification of land use and zoning designations; however, Alternative 2 would not provide the City with an opportunity to implement the 2010 Bicycle Plan along 6th Street over the 6th Street Viaduct because it does not have sufficient width for shoulders that can accommodate bicycles. Bicyclists who wish to cross the 6th Street Viaduct would have to continue using the outside traffic lanes and sidewalks at their own risk. The impact on land use and zoning is considered less than significant; however, the inconsistency with the 2010 Bicycle Plan would cause a significant impact to bicyclists who want to use the 6th Street Viaduct to travel between Boyle Heights and Downtown Los Angeles.

Community Impacts
Construction of Alternative 2 has the potential to cause local roadway blockage and business disruption. The City of Los Angeles Maintenance Facility and former Ventura Food, Inc. located within the viaduct footprint would have to be relocated. The impact is considered significant.

Utilities
Alternative 2 could result in temporary impacts to utilities, such as an increase in utility demand and solid waste volume. Construction of Alternative 2 would involve foundation work, which would require either temporary or permanent relocation of many underground utility lines, such as sewer pipes and storm drain lines. Working in close coordination with the utility providers to develop a utility relocation plan prior to the commencement of construction would minimize impacts.

Construction of Alternative 2 would result in potential periodic short- and extended-term shutdown of some railroad tracks on each side of the Los Angeles River to modify existing bent columns and foundations, and to add shear walls. Written construction agreements would need to be entered into with the railroad companies. Close coordination with the railroads’ owners to allow work during periods when specific tracks are not in active use and to avoid track closures to the extent feasible would minimize the impacts to railroad operations.

Implementation of Alternative 2 would further reduce horizontal clearance between the center of the existing tracks and the retrofitted columns to approximately 8 ft, which is less than the current standard of 8.5 ft, as required by BNSF, and 10 ft, as required by Metrolink. The impact is significant and unavoidable.
**Visual/Aesthetics**
Alternative 2 would encase most of the existing columns with heavy steel casing covered by architectural mortar to recreate the historic column shape, resulting in 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. View restriction under the viaduct deck could affect the activities that benefit from the present views under the viaduct, such as filming. The improvement would not likely change the overall visual quality of any of the associated landscape units. The impact as a result of view blockage from the sheer walls construction is considered significant.

**Cultural Resources**
During the construction period, potential impacts to the historic-era archaeological site (no. 19-003683) would be mitigated to a level of less-than-significant through the establishment of an Environmentally Sensitive Area (ESA) Action Plan. The ESA would be fenced off from construction activities and require monitoring of ground-disturbing activities by a qualified archaeologist and Native American monitor, and the Action Plan would require training of construction workers. There is also the potential to encounter archaeological materials during ground disturbance. Monitoring during ground-disturbing activities by a qualified archaeologist and a Native American monitor would mitigate potential impacts to buried cultural resources to a level of less than significant.

Alternative 2 would alter and/or destroy many of the historic elements, features, and spatial relationships that characterize the viaduct. Implementation of Alternative 2 would result in a significant impact on the 6th Street Viaduct because it would materially alter in an adverse manner those physical characteristics of the historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources (CRHR) and its listing as a Los Angeles Historic-Cultural Monument (HCM).

**Geology/Soil/Seismicity**
Alternative 2 would only prevent collapse under a design seismic event. Due to railroad access restrictions, Bent 12 would not be retrofitted. Although the retrofitted viaduct would not collapse in a major earthquake, the likely damage would require its replacement. Furthermore, the design life expectancy with this alternative is only about 30 years, until the ASR would overtake the structure, requiring its replacement. The impact is considered significant.

**Paleontology**
No previously recorded paleontological sites have been found in the study area, however sites have been found nearby in the formations that occur within the study area. As a result these
formations are considered as having high potential for containing scientifically important fossil remains. Therefore, a qualified paleontological monitor, under the direction of a qualified Principal Paleontologist, would be present at the site during excavation. The impact is considered less than significant with mitigation.

Hazardous Waste/Materials
A preliminary site investigation conducted along the viaduct corridor detected petroleum hydrocarbon at several soil samples and volatile organic compounds (VOCs) at many groundwater samples, and soils near US 101 may contain aerially deposited lead (ADL) generated by historic motor vehicle exhaust. In addition, the viaduct and appurtenances also contain asbestos-containing materials (ACMs) and lead-based paint (LBP) coatings; these materials could be released into the air during construction. The impact is considered significant, but it can be minimized to a less-than-significant level with mitigation measures.

Air Quality
Construction Impacts
Construction impacts on air quality are analyzed in Section 3.15.3.3. The analysis was performed based on the worst-case day, which is represented by Alternative 3. Under the worst-case day of the construction period (i.e., viaduct closed, traffic detour in effect), the regional emissions of nitrogen oxides (NO\textsubscript{X}) would exceed the daily significance threshold set forth by the South Coast Air Quality Management District (SCAQMD). Even with the mitigation measures, the level of NO\textsubscript{X} would still exceed the thresholds (see Section 4.5.1); therefore, the impact to air quality during intense construction periods is considered significant.

Operational Impacts
Permanent impacts on air quality under NEPA are determined by comparing the project-related emissions level to the No Action baseline condition; however, under CEQA, the impacts to air quality consider the changes in pollutant emission levels between the baseline year (2007), post-operation years including opening year (2018) [SCAQMD requirement], and horizon year (2038) with and without project conditions. Since the proposed project is neither a new facility, nor does it include additional traffic lanes, no capacity enhancement or change in traffic pattern is anticipated. As such, the future (post-construction) project traffic volumes and associated air pollutant emissions would be based on the ambient growth rate; the no action and proposed project traffic and associated emissions would be the same, therefore no significant impacts from implementation of the project are expected to occur.
Cumulative Impacts
Cumulative impacts are defined by CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Such effects may be changes resulting from a single project or many separate projects. Based on the cumulative impact analysis presented in Section 3.26 of this EIR/EIS, the following resources would have a considerable level of impacts when combined with impacts from other known related projects: land use and planning, community disruption, traffic and circulation, visual and aesthetics, cultural resources, and air quality during construction.

Mandatory Findings of Significance
The project site is currently developed and devoid of significant fish, wildlife, and/or plant populations. Construction activities would not degrade or have adverse impacts on the natural environment. Alternative 2 would alter and/or destroy historic materials, features, and spatial relationships that characterize the viaduct. Implementation of Alternative 2 would result in an adverse effect under Criterion ii of the Secretary of the Interior’s Standards for the Treatment of Historic Buildings. The impacts of Alternative 2 on the viaduct are considered adverse and potentially significant under CEQA.

4.4.2 Alternative 3 – Replacement

Land Use
Alternative 3 would require some land acquisition, which would result in a loss of several industrial buildings and relocation of up to 11 businesses situated adjacent to the viaduct. The Relocation Impact Report confirmed there is adequate industrially zoned land available to relocate the 11 businesses. However, the loss of industrial and commercial uses would be inconsistent with the City of Los Angeles Industrial Land Use Policy and the objective of the two redevelopment projects administered by the Community Redevelopment Agency of the City of Los Angeles. The impact is considered significant.

Community
Temporary roadway blockage and business disruption is expected to occur throughout the 4-year construction period. Construction of the proposed project would require closure of the viaduct during the construction period, resulting in traffic detours and delay along the street network on both sides of the Los Angeles River. This impact would be borne almost exclusively by local area residents and businesses. The impact is considered significant.
Traffic and Transportation/Pedestrian Facility
Construction of Alternative 3 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. Based on the results of the traffic analysis, up to 13 out of 31 intersections under study would be adversely impacted. Pedestrian circulation blockage and the loss of some 50 public parking spaces around the viaduct would also occur during the construction phase. The impact is considered significant.

Emergency Services
During the proposed project’s 4-year construction period, delays in emergency response time could occur due to closure of the 6th Street Viaduct and related traffic congestion at intersections along the detour routes. The City would implement a mandatory WATCP and closely coordinate with emergency service providers to ensure that the construction schedule and traffic detour information are available to relevant parties in advance. With mitigation, the impact is not significant.

Visual/Aesthetics
Replacement of the viaduct and the loss of this historic resource would change the visual character of the landmark. The various bridge replacement concepts would be expected to alter the existing views to varying degrees. The most notable visual impact would result from the replacement of the historic structure with a new structure of modern bridge design; however, each of the designs considered would maintain the visual qualities (i.e., vividness, memorability, unity, and intactness) experienced by viewers of the landmark. The impact is considered significant.

Cultural Resources
During the construction period, potential impacts to the historic-era archaeological site (no. 19-003683) would be mitigated to a level of less than significant through the establishment of an ESA Action Plan, which would require fencing the area off from construction activities, monitoring of ground-disturbing activities by a qualified archaeologist and Native American monitor, and training construction workers. There is also the potential to encounter archaeological materials during ground disturbance. Monitoring during ground-disturbing activities by a qualified archaeologist and a Native American monitor would mitigate potential impacts to buried cultural resources to a level of less than significant.

Alternative 3 would destroy the historic elements, features, and spatial relationships that characterize the viaduct as an individual resource eligible for listing in the CRHR. Implementation of Alternative 3 would result in a significant impact because it would demolish those physical characteristics of the historical resource that convey its historical significance and
that justify its eligibility for inclusion in the CRHR (CEQA Guidelines, Section 15064.5(b)(2)(A)), and as a designated City of Los Angeles HCM (#905).

During preparation of this Final EIR/EIS, the Los Angeles Community Redevelopment Agency (CRA/LA) submitted a letter dated July 28, 2010, to the Project Development Team (PDT) indicating that an historic site survey of the Adelante Eastside Redevelopment Area was completed in July 2010. The letter included a map of a proposed “Historic District – Anderson Street” showing one building classified as “contributor” to the proposed Anderson Street District located within the 6th Street Viaduct APE (Building No. 17 on Figure 3.4-2). This building had been determined to be not eligible for the NRHP by Caltrans based on the 2007 HRER prepared for the 6th Street Viaduct Seismic Improvement Project. As described in Section 3.9 of this EIR/EIS, review of the report entitled “Intensive Historic Resources Survey, Adelante Eastside Redevelopment Area” and the HPSR for the 6th Street Viaduct Seismic Improvement Project lead to the conclusion that the only historic property within the project area is the 6th Street viaduct.

**Hydrology and Floodplains**

As discussed in Section 3.10.3, only one out of six bridge concepts (Concept 1) would have a negative impact to the floodway as a result of the center river pier being larger than existing. If this bridge concept is selected for construction, the impact would be considered significant. None of the other bridge concepts would have a notably larger center river pier than existing. No impacts to floodplains and flood flow would occur from these bridge concepts.

**Paleontology**

Similar to Alternative 2 described above.

**Hazardous Waste/Materials**

A preliminary site investigation conducted along the viaduct corridor detected petroleum hydrocarbon in several soil samples and volatile organic compounds (VOCs) in many groundwater samples, and it was determined that soils near US 101 may contain ADL generated by historic motor vehicle exhaust. In addition, the viaduct and appurtenances also contain ACMs and LBP coatings. The buildings to be demolished could contain ACMs. The impact from the release of these materials during demolition is considered significant, but it can be minimized to a less-than-significant level with mitigation measures.
Air Quality

Construction Impacts

Construction impacts are analyzed in Section 3.15.3.4. Under the worst-case day of the construction period (i.e., viaduct closed, traffic detour in effect), the regional emissions of nitrogen oxides (NO\textsubscript{X}) would exceed the daily significance threshold set forth by the SCAQMD (see Table 3.15-7). Even with the mitigation measures, the level of NO\textsubscript{X} would still exceed the thresholds (see Section 4.5.2); therefore, the impact to air quality during intense construction periods would be significant.

Local impacts of combined construction and detour traffic emissions of the criteria pollutants were analyzed (Section 3.15.3.4). Table 3.15-13 presents the modeling results for years 1 and 3 of construction, which represent the worst-case construction emissions. As shown in Table 3.15-13, the potential increase in PM\textsubscript{2.5} emissions and the estimated potential NO\textsubscript{2} concentrations, when added to background ambient concentrations, would not violate the respective air quality standards at any of the sensitive receptor locations. As such, localized impacts during construction with respect to these pollutant concentrations would not exceed CEQA thresholds.

The projected potential impacts represent worst-case conditions during demolition and site preparation, when earthwork activities occur close to the nearest residential units. The impacts would be reduced as these activities conclude near the northeast site boundary and move farther from the residential receptors. Table 3.15-13 also indicates that maximum PM\textsubscript{10} concentrations could reach a level of 11.2 µg/m\textsuperscript{3} at the nearest residence located north of the project site during the peak concurrent demolition/construction activities of year 1 (month 6). This increased concentration level would exceed the SCAQMD threshold, but the impacts could be minimized by applying mitigation measures presented in Section 3.15.4 of this EIS/EIR.

Construction of Alternative 3 would require closure of the roadway and viaduct between Mateo Street and the US 101 NB on-ramp during the 4-year period of construction. The detoured daily traffic would be diverted to nearby local roadways within the project area. This would result in a change of traffic patterns and the associated mobile source emissions in the area during the construction years.

Operational Impacts

For the post-construction operational years, including horizon year 2038, the traffic patterns on the replaced viaduct would be the same as with the No Action Alternative because there would be no additional traffic lanes; therefore, no changes in the LOS or posted speed are expected as a result of implementation of the project. The future project traffic volumes and associated air pollutant emissions would be based only on ambient growth. Consequently, the pollutant
emissions from the no-build and build scenarios would be the same; therefore, no impacts from the project are anticipated. The following subsections present the analysis results of various air quality impact categories.

**Regional Operational Impact**

For each study scenario, the peak-hour VMT data and projected average speeds within the project study area were derived in the project’s traffic study. Emission factors for average travel speeds were obtained using the EMFAC2007 model. Table 4-1 summarizes the results of the project’s operational emissions analysis for the opening year (2018) and horizon year (2038).

### Table 4-1

**Summary of Replacement Alternative Operational Regional Emissions (lbs/day)**

<table>
<thead>
<tr>
<th>Scenario/Alternative</th>
<th>CO</th>
<th>VOC</th>
<th>NO_x</th>
<th>SO_2</th>
<th>PM_10</th>
<th>PM_2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 2007 – CEQA Baseline</td>
<td>1,600.4</td>
<td>69.7</td>
<td>455.8</td>
<td>1.9</td>
<td>142.9</td>
<td>34.4</td>
</tr>
<tr>
<td>Year 2018 – Opening Year</td>
<td>757.8</td>
<td>27.3</td>
<td>207.0</td>
<td>2.1</td>
<td>155.5</td>
<td>34.4</td>
</tr>
<tr>
<td>Net Change from 2007 CEQA Baseline</td>
<td>-842.7</td>
<td>-42.5</td>
<td>-248.8</td>
<td>0.2</td>
<td>12.6</td>
<td>0.3</td>
</tr>
<tr>
<td>SCAQMD Significance Threshold</td>
<td>550</td>
<td>55</td>
<td>55</td>
<td>150</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Exceed Threshold?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Year 2038 – Horizon Year</td>
<td>453.8</td>
<td>17.0</td>
<td>100.8</td>
<td>2.6</td>
<td>189.7</td>
<td>40.5</td>
</tr>
<tr>
<td>Net Change from 2007 CEQA Baseline</td>
<td>-1,147</td>
<td>-53</td>
<td>-355</td>
<td>0.7</td>
<td>46.9</td>
<td>6.3</td>
</tr>
<tr>
<td>Exceed Threshold?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes:
1. Emissions are calculated using emission factors from EMFAC2007, at the projected average speed, and VMT of each roadway segment within the study area (from Traffic Analysis Report).
2. VMT, average speed data an the calculation worksheets are provided in the Air Quality Technical Report


The data in Table 4-1 shows that during the detour years (represented by year 2018, which constitutes the worst-case traffic during detour years), the regional emission level of all pollutants would be less than the existing or base-year of 2007, except SO_2, which shows a slight increase of the base year emission level. The projected emissions reduction is due to the compliance with the existing, and newly adopted, regulations for mobile source control measures. These include use of alternative or reformulated fuels, use of retrofit controls on engines, and installing or encouraging the use of new engines and cleaner in-use heavy-duty vehicles. Similar results are shown for year 2038, with the exception of PM_10 and PM_2.5 emissions, which show an increase of 47 and 6 pounds per day, respectively, compared with the 2007 emissions level. The increase in SO_2 emissions in 2018 and 2038 and the increase in PM_10 and PM_2.5 emissions in 2038, attributable to the proposed project’s build alternatives, are well below the CEQA operational thresholds of 150 pounds per day (SO_2 and PM_10) and 55 pounds.
per day (PM$_{2.5}$); therefore, regional operational emissions would be less than significant pursuant to CEQA.

**Detour Traffic Local Operation Impact**

The local construction emissions of criteria pollutants from the traffic along the detour route during the detour years were calculated and incorporated in the analysis. To complement the above analysis, the post-construction daily indirect construction emissions of PM$_{2.5}$ and PM$_{10}$ along the studied local roadways were estimated for opening and horizon years to provide comparison with the year 2007.

Table 4-2 presents the estimated PM$_{10}$ and PM$_{2.5}$ daily emissions attributable to total vehicular traffic on the adjacent roadways. These projected values are based on estimates of PM$_{2.5}$ and PM$_{10}$ emissions from tailpipe, break wear, and tire wear sources. The projected daily emissions show that, although the traffic volumes increase compared to base year 2007, the particulate emission levels show a relatively small increase in future years compared to the 2007 level. This is mainly due to including re-entrained road dust in calculations. The increases are well below the NEPA-based threshold of 100 tons per year (established under 40 CFR 93.153, required for conformity finding), as well as the CEQA-based threshold established by SCAQMD.

**Table 4-2**

<table>
<thead>
<tr>
<th>Local Roadway</th>
<th>PM$_{10}$ Emission (lbs/day)</th>
<th></th>
<th>PM$_{2.5}$ Emission (lbs/day)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007 CEQA Base</td>
<td>2018 Opening Year</td>
<td>2038 Horizon Year</td>
<td>Increment 2014</td>
</tr>
<tr>
<td>6th Street - Soto Street to Central Avenue</td>
<td>17.0</td>
<td>17.6</td>
<td>21.5</td>
<td>0.6</td>
</tr>
<tr>
<td>1st Street - Soto Street to Central Avenue</td>
<td>21.1</td>
<td>22.7</td>
<td>27.7</td>
<td>0.6</td>
</tr>
<tr>
<td>4th Street - Soto Street to Central Avenue</td>
<td>34.6</td>
<td>41.5</td>
<td>50.7</td>
<td>6.9</td>
</tr>
<tr>
<td>7th Street - Soto Street to Central Avenue</td>
<td>14.6</td>
<td>15.3</td>
<td>18.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Central Avenue - 1st Street to 7th Street</td>
<td>7.0</td>
<td>7.3</td>
<td>8.9</td>
<td>0.3</td>
</tr>
<tr>
<td>Alameda Street - 1st Street to 7th Street</td>
<td>15.3</td>
<td>16.2</td>
<td>19.8</td>
<td>0.9</td>
</tr>
</tbody>
</table>
### Table 4-2

**Estimate of PM$_{10}$ and PM$_{2.5}$ along Local Roadways during Post-Construction Years (Opening and Horizon Years)**

<table>
<thead>
<tr>
<th>Local Roadway</th>
<th>PM$_{10}$ Emission (lbs/day)</th>
<th>PM$_{2.5}$ Emission (lbs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007 CEQA Base</td>
<td>2007 CEQA Base</td>
</tr>
<tr>
<td>Mateo Street - 6th Street to 7th Street</td>
<td>0.7</td>
<td>0.2</td>
</tr>
<tr>
<td>Santa Fe Avenue - 6th Street/ Frontage Road to 7th Street</td>
<td>1.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Boyle Avenue - 1st Street to 7th Street</td>
<td>8.6</td>
<td>2.1</td>
</tr>
<tr>
<td>Soto Street - 1st Street to 7th Street</td>
<td>22.6</td>
<td>5.4</td>
</tr>
</tbody>
</table>


**Mobile Source Toxic Air Contaminants**

Control of TACs is required by both federal and state regulations. The SCAQMD currently provides rules and policies that are oriented for analyzing TACs from land use projects. The following analysis provides an assessment of project operational emissions of MSATs for comparison with the CEQA baseline (year 2007) and the indirect construction emissions during the detour years. The analysis was conducted using the projected traffic data, including local roadway traffic volumes and VMT, vehicle mix, traffic diversion data, average speed, and the associated changes in MSATs for the project alternatives.

**Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs.** Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of many EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or state level.
In California, MATES-II and MATES-III studies included monitoring of more than 30 toxic air pollutants and an effort to estimate cancer risk from exposure to DPMs. The study identified particulate emissions, which were attributed mostly to diesel engines, as an important cancer risk factor. According to MATES-III, DPMs accounted for approximately 84 percent of the total cancer risk associated with the investigated group of air pollutants. MATES-II also provided regional trends in estimated outdoor cancer risk from air toxics emissions.

SCAQMD’s MATES-II and MATES-III studies offer an opportunity to estimate air toxics-related health risks from roads; however, while at the regional scale the study approximates air toxics-related health risk from roads, it was not designed to provide accurate approximations of risk as a function of proximity to roads. Monitoring data near freeways were limited to three sites, and modeling results were not finely resolved to provide concentration gradients near roads. The MATES-II monitoring results are consistent with other research studies indicating that pollutant concentrations generally diminish as distance is increased from the source, and they are often approximately the same as background conditions beyond 100 meters from a road. Furthermore, the study cautions that results are highly dependent upon the unit risk factors assumed, particularly for DPM, for which uncertainties are an order of magnitude or more. At the microscale, neither MATES-II nor MATES-III was designed to effectively assess changes in pollutant concentrations with varying distance from roadways. Therefore, the available methodology and techniques would need to be refined so that they provide tools and information that would be useful to alleviate the uncertainties listed above and enable a more comprehensive evaluation of the health impacts; hence specific impacts from this project cannot be determined.

**Estimate of Project Emissions of Primary MSATs.** The local roadways subject to traffic diversion would be affected by additional traffic volumes during the duration of construction. Emissions of priority MSATs were estimated along these local roadways. Emissions were also estimated for years 2007 and 2038 for comparison purposes. The 2007 emissions are included to show the effect of current VMT levels and the degree of control plans on MSAT emissions.

The analysis was conducted for six air toxics that are identified as priority MSATs by EPA. The UC Davis-Caltrans *CT-EMFAC 2.6* (UC-Davis and Caltrans, 2008) was used to provide a comparison of MSAT emissions for the roadway segments affected by the traffic diversion due to viaduct closure during project construction. The emissions were estimated for worst-case during construction years with and without the proposed project. The traffic volumes and average speeds during peak and non-peak hours, percent of trucks, and VMTs were used as input data.
Table 4-3 presents the estimated daily emissions for each analyzed local roadway performed in the Traffic Study for this Project. As shown, for all studied roadways, MSAT emissions are projected to decline markedly in the future compared to the base year 2007. This decrease is prevalent for all of the priority MSATs, and it is directly due to the improved pollution emission performance of a modernizing fleet of all diesel-fueled vehicles, which is a trend that is anticipated to continue throughout the planning horizon year. The estimated emissions increase on the adjacent roadways for the detour years 2014 to 2018 would be temporary, due to diverted traffic volume increasing along the detour route.

In conclusion, MSAT emissions from the proposed project alternative implementation would marginally increase in certain locations during the construction years when the detour plan would be in effect. At the same time (i.e., during detour years), the MSAT emissions would be marginally lower in areas near the closed segment of the 6th Street roadway and viaduct; however, concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be defined with any level of confidence.

**Toxic Air Contaminants**

The greatest potential for TAC emissions would be related to DPM emissions associated with heavy equipment operations during grading and excavation activities. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the construction schedule of 4 years, and considering that most grading and excavation activities would occur intermittently during different construction phases, the proposed project would not result in a long-term (i.e., 70 year) substantial source of TAC emissions with no residual emissions after construction and corresponding individual cancer risk. As such, potential impacts related to TAC emissions during construction would be less than significant, and no mitigation measures are required.

### Table 4-3

**Estimate of Priority MSAT Emissions for the Local Roadways within Project Study Area a (grams/day)**

<table>
<thead>
<tr>
<th>Year/Scenario</th>
<th>DPM</th>
<th>Formaldehyde</th>
<th>1,3-Butadiene</th>
<th>Benzene</th>
<th>Acrolein</th>
<th>Acetaldehyde</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4th Street – Soto Street to Central Avenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing – 2007</td>
<td>1,988</td>
<td>1,372</td>
<td>291</td>
<td>1,543</td>
<td>66</td>
<td>457</td>
</tr>
<tr>
<td>Detour Year – 2018/ Viaduct Open</td>
<td>1,020</td>
<td>604</td>
<td>96</td>
<td>590</td>
<td>22</td>
<td>224</td>
</tr>
<tr>
<td>Detour Year – 2018/ Viaduct Closed</td>
<td>1,160</td>
<td>687</td>
<td>109</td>
<td>672</td>
<td>24</td>
<td>255</td>
</tr>
<tr>
<td>Horizon Year – 2038/ Build and No-Build</td>
<td>682</td>
<td>405</td>
<td>69</td>
<td>413</td>
<td>15</td>
<td>149</td>
</tr>
<tr>
<td><strong>7th Street – Soto Street to Central Avenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cumulative Impacts
Based on the cumulative impact analysis presented in Section 3.26 of this EIR/EIS, the following resources would have a considerable level of impacts when combined with impacts from other known related projects: land use and planning, community disruption, traffic and circulation, visual and aesthetics, cultural resources, and air quality during construction.

Mandatory Findings of Significance
The project site is currently developed and devoid of significant fish, wildlife, and/or plant populations. Construction activities would not degrade or have adverse impacts on the natural environment. Implementation of Alternative 3 would result in an adverse effect under Criterion i of the Secretary of the Interior’s *Standards for the Treatment of Historic Buildings*. The impacts of Alternative 3 on the viaduct are considered adverse and potentially significant under CEQA.

### 4.5 Unavoidable Significant Environmental Effects
Even with implementation of the proposed mitigation measures, some of the impacts identified would still remain significant as summarized herein.

<table>
<thead>
<tr>
<th>Existing – 2007</th>
<th>Detour Year – 2018 / Viaduct Open</th>
<th>Detour Year – 2018 / Viaduct Closed</th>
<th>Horizon Year – 2038 / Build and No-Build</th>
<th>1st Street – Soto Street to Central Avenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>722</td>
<td>454</td>
<td>92</td>
<td>487</td>
<td>21</td>
</tr>
<tr>
<td>344</td>
<td>191</td>
<td>28</td>
<td>176</td>
<td>6</td>
</tr>
<tr>
<td>505</td>
<td>281</td>
<td>42</td>
<td>258</td>
<td>9</td>
</tr>
<tr>
<td>227</td>
<td>128</td>
<td>20</td>
<td>122</td>
<td>4</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Existing – 2007</th>
<th>Detour Year – 2018 / Viaduct Open</th>
<th>Detour Year – 2018 / Viaduct Closed</th>
<th>Horizon Year – 2038 / Build and No-Build</th>
<th>South Soto Street – 7th Street to 1st Street</th>
</tr>
</thead>
<tbody>
<tr>
<td>798</td>
<td>551</td>
<td>117</td>
<td>619</td>
<td>27</td>
</tr>
<tr>
<td>388</td>
<td>229</td>
<td>36</td>
<td>224</td>
<td>8</td>
</tr>
<tr>
<td>405</td>
<td>240</td>
<td>38</td>
<td>234</td>
<td>9</td>
</tr>
<tr>
<td>258</td>
<td>154</td>
<td>26</td>
<td>156</td>
<td>6</td>
</tr>
</tbody>
</table>

* Project study area includes the roadways that are studied in the *Traffic Analysis Report*.
* Traffic data used for calculations are provided in the *Air Quality Technical Report*.
4.5.1 Alternative 2 – Retrofit

Cultural Resources
Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (Standards) or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource (CEQA Guidelines Section 15064.5(b)(3)). Elements of Alternative 2 could be designed in a manner consistent with the Standards, but Alternative 2 overall would materially alter in an adverse manner those physical characteristics that convey the viaduct’s significance, and the viaduct would not retain sufficient integrity for inclusion in the CRHR.

Utility – Railroad
Implementation of Alternative 2 would further reduce the substandard horizontal clearance between the existing tracks and the retrofitted columns of the viaduct. The impact is unavoidable.

Visual/Aesthetics
The restriction of views under the viaduct resulting from the seismic shear walls to be constructed between the columns cannot be avoided.

Geology/Soil/Seismicity
No other retrofit options are available to protect the viaduct from collapse for more than the design life expectancy of approximately 30 years due to the ongoing ASR deterioration, which cannot be stopped. The retrofitted viaduct would have to be replaced after this time.

Air Quality
Implementation of the recommended mitigation measures (refer to Section 3.15.6.4) would reduce construction emissions for all pollutants; however, as shown in Table 4-4, the regional emissions of NO\textsubscript{X} would remain in exceedance of the SCAQMD CEQA significance threshold during the most intense activities through the construction period. Therefore, even with mitigation measures, regional emissions of NO\textsubscript{X} would remain significant under CEQA and unavoidable during project construction.


<table>
<thead>
<tr>
<th>Construction Year</th>
<th>VOC</th>
<th>NO\textsubscript{x} \textsuperscript{b}</th>
<th>CO</th>
<th>PM\textsubscript{10} \textsuperscript{c}</th>
<th>PM\textsubscript{2.5} \textsuperscript{c}</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YEAR 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Concurrent Activities (Month 6)</td>
<td>Mitigated Emission</td>
<td>40</td>
<td>368 (311)</td>
<td>228</td>
<td>56</td>
</tr>
<tr>
<td>Regional Daily Significance CEQA Threshold</td>
<td>Exceed CEQA Threshold?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>YEAR 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Concurrent Activities (Month 12)</td>
<td>Mitigated Emission</td>
<td>20</td>
<td>174 (145)</td>
<td>114</td>
<td>17</td>
</tr>
<tr>
<td>Exceed CEQA Threshold?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>YEAR 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Concurrent Activities (Month 1)</td>
<td>Mitigated Emission</td>
<td>26</td>
<td>221 (184)</td>
<td>148</td>
<td>30</td>
</tr>
<tr>
<td>Exceed CEQA Threshold?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Peak Concurrent Activities (Month 8)</td>
<td>Mitigated Emission</td>
<td>27</td>
<td>219 (181)</td>
<td>151</td>
<td>13</td>
</tr>
<tr>
<td>Exceed CEQA Threshold?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>YEAR 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Concurrent Activities (Month 1)</td>
<td>Mitigated Emission</td>
<td>17</td>
<td>142 (119)</td>
<td>101</td>
<td>12</td>
</tr>
<tr>
<td>Exceed CEQA Threshold?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Mitigation reductions are applied to onsite construction activities. The emission values in the table are composed of on-road construction mitigation and mitigated onsite (off-road) emissions.

\textsuperscript{b} Mitigation measure consists of maintaining construction equipment properly tuned. Exhaust emissions reduction is 5 percent for all criteria pollutants. For NO\textsubscript{x} reduction, use of aqueous diesel fuel, plus oxidation catalyst for the construction equipment, would reduce onsite emissions up to 28 percent. These data are shown in parentheses.

\textsuperscript{c} PM\textsubscript{10} emissions estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, plus additional watering of construction area. Additional watering would provide a 70 percent reduction in fugitive PM\textsubscript{10}, as well as fugitive PM\textsubscript{2.5} emissions.

Source: Air Quality Technical Report for 6\textsuperscript{th} Street Viaduct Seismic Improvement Project, updated 2011.

**Cumulative Impact**

Construction for the project could occur at the same time as construction for other planned projects within very close proximity, such as the Westside Subway Extension – a Division 20 South Rail Yard and the Boyle Heights Mixed-Use projects. Even with implementation of available mitigation measures, unavoidable and significant cumulative effects from increased traffic congestion, air pollutant emissions, and traffic noise levels could still remain during construction of the project if other projects are concurrently under construction in the same vicinity.
4.5.2 Alternative 3 – Replacement

Land Use
Loss of commercial/industrial land use in the vicinity of the viaduct corridor cannot be avoided with construction of the new viaduct.

Traffic and Transportation/Pedestrian Facility
Eleven out of 13 impacted intersections could not be mitigated without causing further right-of-way impacts.

Cultural Resources
Under CEQA, relocation of a historical resource is recommended when demolition is proposed. Relocation of the viaduct is not a feasible alternative due to the deterioration of the concrete which has resulted from the Alkali-Silica Reaction. Therefore, adverse impacts due to the proposed demolition of the historic viaduct, a CRHR-eligible resource, and the loss of HCM status under this alternative are unavoidable.

Air Quality
Similar to Alternative 2 described in Section 4.5.1.

Cumulative Impact
Construction for the project could occur at the same time as construction for other planned projects within very close proximity, such as the Westside Subway Extension – a Division 20 South Rail Yard and the Boyle Heights Mixed-Use projects. Even with implementation of available mitigation measures, unavoidable and significant cumulative effects from increased traffic congestion, air pollutant emissions, and traffic noise levels could still remain during construction of the project if other projects are concurrently under construction in the same vicinity.

The 6th Street Viaduct is also designated City of Los Angeles HCM #905, as one of 11 historic Los Angeles River bridges (HCM #900 – #910). The 6th Street Viaduct, with its unique-for-the-time dual steel through-arch design and being the largest of the Los Angeles River bridges built near the end of that era, contributes to the themes that these monumental river bridges convey (City Beautiful Movement, relation to the City Municipal Art Commission, and engineering and technical innovations—see Section 3.26.6.5), and its removal would impact the City’s historic-cultural monument bridges on a cumulative basis.
4.6 Significant Irreversible Environmental Changes

Significant irreversible environmental changes have been discussed in Section 3.24 of this document.

4.7 Growth-Inducing Impacts

The main objective of the proposed project is to seismically improve the ASR-damaged 6th Street Viaduct. Neither the retrofit nor replacement alternatives would result in traffic capacity enhancement. The proposed project is therefore not considered growth inducing.

4.8 Global Climate Change

4.8.1 Regulatory Setting

State and Federal Level

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization’s Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHG related to human activity that include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (s, s, 2 -tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of AB 1493, California launched an innovative and proactive approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, to enact the standards, California needed a waiver from EPA. The waiver was denied by EPA in December 2007 (see California v. Environmental Protection Agency, 9th Cir. Jul. 25, 2008, No. 08-70011); however, on January 26, 2009, it was announced that EPA will reconsider their decision regarding the denial of California’s waiver. On May 18, 2009, President Obama announced the enactment of a 35.5-mile-per-gallon (mpg) fuel economy standard for automobiles and light-duty trucks that will take effect in 2012. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will
also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05. The goal of this Executive Order is to reduce California’s GHG emissions to: (1) 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80 percent below 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.” EO S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state’s Climate Action Team.

With EO 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 10 percent by 2020.

**Senate Bill 97.** SB 97 (Chapter 185), enacted in 2007, directed the state Office of Planning and Research (OPR) to develop amendments to CEQA Guidelines “for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions” by July 1, 2009, and directed the Natural Resources Agency to certify and adopt the amendments to CEQA Guidelines by early 2010. The Natural Resources Agency transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law (OAL) on December 31, 2009. In February 2010, the OAL approved the Amendments and filed them for inclusion in the California Code of Regulations. The Amendments became effective March 18, 2010.

Climate change and GHG reduction are also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force EPA to regulate GHG as a pollutant under the CAA (Massachusetts vs. Environmental Protection Agency et al., 549 U.S. 497 [2007]). The court ruled that GHG does fit within the CAA’s definition of a pollutant and that EPA does have the authority to regulate GHG. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the CAA:
• Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs – CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) – in the atmosphere threaten the public health and welfare of current and future generations.

• Cause or Contribute Findings: The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

These findings do not themselves impose any requirements on transportation industry or other entities; however, this action is a prerequisite to finalizing EPA’s proposed GHG emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation’s National Highway Safety Administration on September 15, 2009.111

Local Level – City of Los Angeles
In May 2007, the City of Los Angeles initiated an action plan and published: “Green LA: An Action Plan to Lead the Nation in Fighting Global Warming.” The Plan sets forth a goal of reducing the City’s GHG emissions to 35 percent below 1990 levels by the year 2030. This voluntary plan identifies more than 50 action items, grouped into focus areas, to reduce GHG emissions. While the emphasis is first on municipal facilities and operations, several measures address programs to reduce emissions in the community.

The subsequent ClimateLA is the implementation program that provides detailed information about each action item discussed in the Green LA framework (City of Los Angeles, 2008)112. The actions in the ClimateLA 2008 document are categorized by the focus areas of the Green LA Plan that include energy, water, transportation, land use, waste, open space and greening, green economy, and proprietary departments. For transportation, as an important focus of the Program, the City will lower the GHG emissions by the following actions:

• Require 85 percent of the City fleet to be powered by alternative fuels.
• Convert 100 percent of City refuse collection trucks and street sweepers to alternative fuels.
• Convert 100 percent of Metropolitan Transportation Authority (MTA) buses to alternative fuels.
• Convert commuter Express diesel buses to alternative fuels and CityRide diesel vehicles to ultra-low-emission gasoline.
• Complete the Automated Traffic Surveillance and Control System (ATSAC).

111 http://www.epa.gov/climatechange/endangerment.html
112 http://www.ci.la.ca.us/ead/ead_GreenLAClimateLA.htm
• Expand FlyAway shuttles serving Los Angeles World Airports, including Los Angeles International Airport, and convert existing FlyAway buses to alternative fuels.
• Make transit information easily available, understandable, and translated into multiple languages.
• Increase City employee participation in the rideshare program and increase the subsidy for mass transit.
• Promote walking and biking to work, within neighborhoods, and to large events and venues.
• Expand the regional rail network.

ClimateLA is a living document, reflecting a process of ongoing learning and continuous improvement as technology advances and City departments develop expertise in methods of lowering GHG emissions.

According to Recommendations by the Association of Environmental Professionals (AEP) on “How to Analyze GHG Emissions and Global Climate Change in CEQA Documents” (March 5, 2007), 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. In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (see CEQA Guidelines sections 15064(i)(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 to make this determination is a difficult if not impossible task.

Sources of GHG
The GHG emissions are mostly related to fossil fuel combustion for energy use, as shown in Figures 4-1. These are driven largely by economic growth and fuel used for power generation, transportation, heating, and cooling. According to the California Energy Commission (CEC), energy-related CO₂ emissions resulting from fossil fuel combustion represents approximately 81 percent of California’s total GHG emissions (Figure 4-1). Although the emissions of other GHG gases, such as CH₄ (methane) and N₂O (nitrous oxide) are small, it should be noted that their global warming potential (GWP) is very high in relation to that of CO₂.
Primary sources of emissions of these GHGs are from:

- CH$_4$ – agricultural activities and landfills
- N$_2$O – agricultural soil and mobile source fuel combustion
- High GWP gases – industrial processes, refrigerants, insulating material; these have a long lifetime in the atmosphere (varying from several decades to several centuries)

Source: CEC, 2006

**Figure 4-1**

California Greenhouse Gas Composition by Type of Gas in 2004

Source: [http://www.arb.ca.gov/cc/inventory/data/forecast.htm](http://www.arb.ca.gov/cc/inventory/data/forecast.htm)

**Figure 4-2**

California Greenhouse Gas Inventory
As part of its supporting documentation for the Draft Scoping Plan, CARB recently released an updated version of the GHG inventory for California (June 26, 2008). Figure 4-2 is a graph from that update that shows the total GHG emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

According to CEC, among the end-use sectors contributing to California’s GHG emissions, the transportation sector represents the largest source and constitutes 41 percent of the state’s GHG emissions. Figure 4-3 shows the emissions of GHGs by the end-use sector in 2004.

As Figures 4-2 and 4-3 show, the transportation sector activities are responsible for a substantial portion of the GHG emissions in California. Because of its size, it is critical that the transportation sector achieve significant emission reductions toward the State’s 2020 goal. If the transportation sector does not provide significant GHG reductions, it would be difficult for another sector to make up the emission reductions. Transportation’s contribution to GHG emissions is dependent on three factors: the types of vehicles on the road, the type of fuel the vehicles use, and the time/distance the vehicles travel.

**Project GHG Emissions Analysis**

**CARB Scoping Plan and GHG Significance Threshold**

California laws, such as AB 32 and SB 97, provide that climate change is an environmental effect subject to CEQA. Lead agencies therefore are required to determine whether a project’s climate change-related effects may be significant, and to impose feasible mitigation to minimize any significant effects. Determining significance, however, can be a challenging task. Accordingly, the Governor’s OPR, in its June 2008 Technical Advisory, “CEQA and Climate
Chapter 4 California Environmental Quality Act Evaluation

"Change," asked CARB to make recommendations for GHG-related thresholds of significance, identifiable benchmarks or standards that assist lead agencies in the significance determination. According to its Climate Change Scoping Plan (CARB, 2008), CARB would make its final recommendations on thresholds in mid 2009 to harmonize with OPR’s timeline for issuing draft CEQA guidelines addressing GHG emissions and to provide much needed guidance to lead agencies in the near term. Note, there is no update as of August 2010.

In its Proposed Scoping Plan, CARB has concluded that a zero threshold, which was previously considered, should not be mandated in light of the fact that (1) some level of emissions in the near term and at mid-century is still consistent with climate stabilization and (2) current and anticipated regulations and programs apart from CEQA (e.g., AB 32, the Pavely vehicle regulations) will increasingly reduce the GHG contributions of past, present, and future projects. However, any non-zero threshold must be sufficiently stringent to make substantial contributions to reducing the State’s GHG emissions to meet its interim (2020) and long-term (2050) emissions reduction targets.

CARB has developed preliminary interim threshold concepts for two important sectors: industrial projects, and residential and commercial projects (CARB, 2008). At the time of this writing, CARB is still working on a proposal for an interim approach for significance thresholds for transportation projects and other sectors.

**Estimation of GHG Emissions**

GHG emissions for the proposed project include the emissions produced during construction and those produced during operation (viaduct traffic) upon completion of construction.

Construction-related emissions include off-road construction equipment exhaust emissions, on-road haul trucks and workers commute vehicles emissions, and the traffic along the detour routes during viaduct closure. Operational emissions include GHG emissions from vehicles traveling along the project corridor.

Project-related GHG emissions (No Build and Build Alternatives) were calculated using the emissions factors for off-road and on-road mobile sources, annual VMTs, and guidelines of the California Climate Action Registry (CCAR) Protocol and the Technical Advisory, prepared by the Governor’s OPR (OPR, 2008).

Climate change, as it relates to manmade GHG emissions, is by nature a global and cumulative impact. According to the AEP, in its paper titled Alternative Approaches to Analyzing GHG
Emissions and Global Climate Change in CEQA Documents 113, “an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs.” The following GHG emissions estimate is presented for the purpose of disclosing all project-related emissions and to provide a comparison between the No Build and Build Alternatives. The analysis was performed for only the Alternative 3 scenario to represent the worst case.

Table 4-5 summarizes the annual GHG emissions that would occur within the project region from the proposed project during the peak construction emissions detour year 2018 and horizon year 2038. Sources considered in these emission calculations are the same as those analyzed for criteria pollutants. For the detour year, the total GHGs are presented as combined emissions from project-related detours, associated with other traffic within project corridor, and emissions from the simultaneous demolition of the old bridge.

The data in Table 4-5 show that in each analyzed future year, annual operational carbon dioxide (CO₂) emissions would increase from year 2007 baseline; however, there is no significance criterion established to evaluate the project GHG emission impacts.

Table 4-5 shows that during the construction years the GHG emissions would increase by approximately 9 percent compared with the no-project scenario. As shown, this increase is due to construction activities. Upon opening the new viaduct to traffic, the operational emissions during the future years from opening year 2018 through the horizon year 2038, there would be no change compared to the no project baseline (No Action) because the project would not increase capacity and would not cause change in fleet mix or traffic patterns. Therefore, there would be no operational impact from implementation of the proposed project.

For detour years (construction period), because no significance threshold has been established to date to compare the effect between the without and with project conditions, no determination of significance for construction years emissions of GHG has been made for this impact.

---

Table 4-5
Annual GHG Emissions Associated with Proposed Alternative 3 Implementation

<table>
<thead>
<tr>
<th>Project Scenario/Roadway Segments</th>
<th>CO₂</th>
<th>CH₄</th>
<th>N₂O</th>
<th>CO₂e</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base Year 2007</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th Street – Soto Street to Central Avenue</td>
<td>3,809</td>
<td>0.3</td>
<td>0.3</td>
<td>3,900</td>
</tr>
<tr>
<td>1st Street – Soto Street to Central Avenue</td>
<td>4,552</td>
<td>0.4</td>
<td>0.3</td>
<td>4,666</td>
</tr>
<tr>
<td>4th Street – Soto Street to Central Avenue</td>
<td>7,662</td>
<td>0.6</td>
<td>0.6</td>
<td>7,854</td>
</tr>
<tr>
<td>7th Street – Soto Street to Central Avenue</td>
<td>3,154</td>
<td>0.3</td>
<td>0.2</td>
<td>3,233</td>
</tr>
<tr>
<td>Central Avenue – 1st Street to 7th Street</td>
<td>1,573</td>
<td>0.1</td>
<td>0.1</td>
<td>1,611</td>
</tr>
<tr>
<td>Alameda Street – 1st Street to 7th Street</td>
<td>3,285</td>
<td>0.3</td>
<td>0.2</td>
<td>3,367</td>
</tr>
<tr>
<td>Mateo Street – 6th Street to 7th Street</td>
<td>160</td>
<td>0.0</td>
<td>0.0</td>
<td>164</td>
</tr>
<tr>
<td>Santa Fe Avenue – 6th Street to 7th Street</td>
<td>330</td>
<td>0.0</td>
<td>0.0</td>
<td>338</td>
</tr>
<tr>
<td>Boyle Avenue – 1st Street to 7th Street</td>
<td>1,923</td>
<td>0.2</td>
<td>0.1</td>
<td>1,969</td>
</tr>
<tr>
<td>Soto Street – 1st Street to SR 60 eastbound on-ramp</td>
<td>4,866</td>
<td>0.4</td>
<td>0.4</td>
<td>4,988</td>
</tr>
<tr>
<td><strong>Total Year 2007</strong></td>
<td>31,315</td>
<td>2.6</td>
<td>2.3</td>
<td>32,088</td>
</tr>
<tr>
<td><strong>Year 2018 – No Action (Viaduct Open)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th Street – Soto Street to Central Avenue</td>
<td>4,118</td>
<td>0.2</td>
<td>0.3</td>
<td>4,212</td>
</tr>
<tr>
<td>1st Street – Soto Street to Central Avenue</td>
<td>5,078</td>
<td>0.2</td>
<td>0.4</td>
<td>5,200</td>
</tr>
<tr>
<td>4th Street – Soto Street to Central Avenue</td>
<td>9,272</td>
<td>0.4</td>
<td>0.7</td>
<td>9,495</td>
</tr>
<tr>
<td>7th Street – Soto Street to Central Avenue</td>
<td>3,426</td>
<td>0.2</td>
<td>0.3</td>
<td>3,509</td>
</tr>
<tr>
<td>Central Avenue – 1st Street to 7th Street</td>
<td>1,710</td>
<td>0.1</td>
<td>0.1</td>
<td>1,750</td>
</tr>
<tr>
<td>Alameda Street – 1st Street to 7th Street</td>
<td>3,621</td>
<td>0.2</td>
<td>0.3</td>
<td>3,708</td>
</tr>
<tr>
<td>Mateo Street – 6th Street to 7th Street</td>
<td>172</td>
<td>0.0</td>
<td>0.0</td>
<td>175</td>
</tr>
<tr>
<td>Santa Fe Avenue – 6th Street to 7th Street</td>
<td>354</td>
<td>0.0</td>
<td>0.0</td>
<td>361</td>
</tr>
<tr>
<td>Boyle Avenue – 1st Street to 7th Street</td>
<td>2,092</td>
<td>0.1</td>
<td>0.1</td>
<td>2,139</td>
</tr>
<tr>
<td>Soto Street – 1st Street to SR 60 eastbound on-ramp</td>
<td>5,307</td>
<td>0.2</td>
<td>0.4</td>
<td>5,435</td>
</tr>
<tr>
<td><strong>Total Year 2018 – No Action</strong></td>
<td>35,149</td>
<td>1.7</td>
<td>2.6</td>
<td>35,983</td>
</tr>
<tr>
<td><strong>Peak Construction Year 2018 – With Project (Viaduct Closed)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th Street – Soto Street to Central Avenue</td>
<td>641</td>
<td>0.0</td>
<td>0.0</td>
<td>656</td>
</tr>
<tr>
<td>1st Street – Soto Street to Central Avenue</td>
<td>5,325</td>
<td>0.3</td>
<td>0.4</td>
<td>5,453</td>
</tr>
<tr>
<td>4th Street – Soto Street to Central Avenue</td>
<td>10,208</td>
<td>0.5</td>
<td>0.8</td>
<td>10,453</td>
</tr>
<tr>
<td>7th Street – Soto Street to Central Avenue</td>
<td>5,554</td>
<td>0.3</td>
<td>0.4</td>
<td>5,688</td>
</tr>
<tr>
<td>Central Avenue – 1st Street to 7th Street</td>
<td>1,478</td>
<td>0.1</td>
<td>0.1</td>
<td>1,512</td>
</tr>
<tr>
<td>Alameda Street – 1st Street to 7th Street</td>
<td>3,621</td>
<td>0.2</td>
<td>0.3</td>
<td>3,708</td>
</tr>
<tr>
<td>Mateo Street – 6th Street to 7th Street</td>
<td>202</td>
<td>0.0</td>
<td>0.0</td>
<td>206</td>
</tr>
<tr>
<td>Santa Fe Avenue – 6th Street to 7th Street</td>
<td>354</td>
<td>0.0</td>
<td>0.0</td>
<td>361</td>
</tr>
<tr>
<td>Boyle Avenue – 1st Street to 7th Street</td>
<td>2,082</td>
<td>0.1</td>
<td>0.1</td>
<td>2,130</td>
</tr>
<tr>
<td>Soto Street – 1st Street to SR 60 eastbound on-ramp</td>
<td>5,599</td>
<td>0.3</td>
<td>0.4</td>
<td>5,733</td>
</tr>
<tr>
<td><strong>Total Roadway Traffic Emissions</strong></td>
<td>35,064</td>
<td>1.7</td>
<td>2.6</td>
<td>35,900</td>
</tr>
<tr>
<td><strong>Construction Emissions – Detour Year 2014</strong></td>
<td>3,259</td>
<td>0.01</td>
<td>0.01</td>
<td>3,262</td>
</tr>
<tr>
<td><strong>Total Year 2018 – Proposed Project (Alternative 3)</strong></td>
<td>38,322</td>
<td>1.7</td>
<td>2.6</td>
<td>39,162</td>
</tr>
<tr>
<td><strong>Net Change from 2007</strong></td>
<td>7,008</td>
<td>-0.9</td>
<td>0.3</td>
<td>7,074</td>
</tr>
<tr>
<td><strong>Net Change from No-Action Scenario</strong></td>
<td>3,173</td>
<td>0</td>
<td>0</td>
<td>3,179</td>
</tr>
</tbody>
</table>
Table 4-5
Annual GHG Emissions Associated with Proposed Alternative 3 Implementation

<table>
<thead>
<tr>
<th>Project Scenario/Roadway Segments</th>
<th>Emissions (Metric Tons per Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CO₂</strong></td>
<td><strong>CH₄</strong></td>
</tr>
<tr>
<td>Horizon Year 2038 – No-Action/ Proposed Project</td>
<td></td>
</tr>
<tr>
<td>6th Street – Soto Street to Central Avenue</td>
<td>5,205</td>
</tr>
<tr>
<td>1st Street – Soto Street to Central Avenue</td>
<td>6,414</td>
</tr>
<tr>
<td>4th Street – Soto Street to Central Avenue</td>
<td>11,741</td>
</tr>
<tr>
<td>7th Street – Soto Street to Central Avenue</td>
<td>4,312</td>
</tr>
<tr>
<td>Central Avenue – 1st Street to 7th Street</td>
<td>2,154</td>
</tr>
<tr>
<td>Alameda Street – 1st Street to 7th Street</td>
<td>4,593</td>
</tr>
<tr>
<td>Mateo Street – 6th Street to 7th Street</td>
<td>228</td>
</tr>
<tr>
<td>Santa Fe Avenue – 6th Street to 7th Street</td>
<td>445</td>
</tr>
<tr>
<td>Boyle Avenue – 1st Street to 7th Street</td>
<td>2,641</td>
</tr>
<tr>
<td>Soto Street – 1st Street to SR 60 eastbound on-ramp</td>
<td>6,713</td>
</tr>
<tr>
<td><strong>Total Year 2038 – Horizon Year</strong></td>
<td><strong>44,448</strong></td>
</tr>
</tbody>
</table>

One metric ton equals 2,204.6 lbs; emission factors of CO₂ and CH₄ are obtained using EMFAC2007 and N₂O emission factors are obtained from the CCAR. 

CO₂e = carbon dioxide equivalent of combined emissions of all GHGs. The CO₂-equivalent emission of each GHG is the emission rate multiplied by its corresponding global warming potential (GWP). The GWPs for CH₄ and N₂O are 21 and 310, respectively.


The stated objective of the proposed project is to reduce the risk of seismic collapse of the viaduct. It is not a capacity-enhancing project, so there will not be an increase in traffic volumes due to the proposed project. The proposed project is consistent with the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP), and it is included in the Regional Transportation Improvement Program (RTIP). Because the proposed project is not capacity enhancing, CO₂ emissions would not increase in the region as a result of the project’s implementation. Similarly the operational emissions would not have any significant cumulative GHG impact compared with the no-project scenario.

**AB 32 Compliance**

The City’s GreenLA Climate Action Plan, identifies more than 50 action items that will lead Los Angeles to lower GHG emission levels. The actions taken by the City to reduce GHG emissions from transportation include encouraging green transportation by making transit information easily available, expanding ride share programs, and promoting walking and bicycling to work. A City program called “Cops on Bikes” is anticipated to improve productivity, reduce air pollution, and save $350,000 in vehicle costs over 5 years. The City also invested in a fleet of alternative fuel vehicles that includes nearly half of the City’s refuse collection trucks and street sweepers, all 188 DASH buses, and nearly 1,000 hybrid passenger cars, saving more than 10
million gallons of fuel annually. The conversion of City fleet vehicles to alternative fuels reduced CO$_2$ emissions by 2,477 metric tons in 2008.

In addition to the local strategies and plans of the City, at the state level Caltrans continues to be actively involved on the Governor’s Climate Action Team as CARB works to implement the Governor’s Executive Orders and help achieve the targets set forth in AB 32. Many of the strategies that Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Governor Schwarzenegger’s Strategic Growth Plan calls for a $238.6 billion infrastructure improvement program to fortify the state’s transportation system, education, housing, and waterways, including $100.7 billion in transportation funding through 2016.$^{114}$

As shown in Figure 4-4, the Strategic Growth Plan targets a significant decrease in traffic congestion below today’s level and a corresponding reduction in GHG emissions.

![Figure 4-4: Outcome of Strategic Growth Plan](http://gov.ca.gov/pdf/gov/CSGP.pdf)

The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that when combined together yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

$^{114}$ Governor’s Strategic Growth Plan, Fig. 1 (http://gov.ca.gov/pdf/gov/CSGP.pdf)
**Emissions Reduction Measures**

As described in CARB Scoping Plan, GHG emission reductions will come from three overarching strategies: more efficient vehicles, lower-carbon fuels, and reduction of vehicle use or VMT. The GHG emission reductions in transportation sector will be achieved through regulations, market mechanisms, incentives, and land use policy. The proposed project would help to implement the goal of reduction in vehicle use by providing wide shoulders and sidewalks to promote bicycle and pedestrian alternatives to automobile travel.

The actions taken by the City to reduce GHG emissions at the local level are summarized in Figure 4-5. As described above, at the state level, Caltrans is active in reducing GHG emissions from transportation sector.

### 4.9 Mitigation Measures for Significant Impacts under CEQA

The analysis in this 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 (e.g., *Los Angeles Municipal Code* and Bureau of Engineering *Standard Plans*). Also, this analysis assumes that construction will follow the uniform practices established by the Southern California Chapter of the American Public Works Association (e.g., *Standard Specifications for Public Works Construction* and the *Work Area Traffic Control Handbook*) as specifically adapted by the City of Los Angeles (e.g., The City of Los Angeles Department of Public Works *Additions and Amendments to the Standard Specifications For Public Works Construction* (AKA "The Brown Book," formerly Standard Plan S-610)).

The following subsections list specific mitigation measures to mitigate significant impacts for Alternatives 2 and 3, respectively.

#### 4.9.1 Alternative 2 – Retrofit

The following paragraphs provide specific mitigation measures for each impacted resource under Alternative 2 in addition to the standard measures to be implemented by the City.
### Figure 4-5
City of Los Angeles Near-Term Action Plan

<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Action No.</th>
<th>Measure</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>E3</td>
<td>Reduce the use of coal-fired power plants</td>
<td>Final draft feasibility study on reducing IPP’s carbon footprint</td>
</tr>
<tr>
<td>Energy</td>
<td>E4</td>
<td>Increase the efficiency of natural gas-fired power plants</td>
<td>Completion of the SHARE study</td>
</tr>
<tr>
<td>Energy</td>
<td>E5</td>
<td>Increase biogas co-firing of natural gas-fired power plants</td>
<td>Terminal Island Fuel Cell (November - tentative)</td>
</tr>
<tr>
<td>Energy</td>
<td>E6</td>
<td>Present a comprehensive set of green building policies to guide and support private sector development</td>
<td>Process 100 new buildings (December)</td>
</tr>
<tr>
<td>Energy</td>
<td>E7</td>
<td>Reduce energy use by all city departments to the maximum extent feasible</td>
<td>Complete installation of pilot solar lighting (June)</td>
</tr>
<tr>
<td>Energy</td>
<td>E8</td>
<td>Perform energy efficient retrofits on 497 city-owned buildings to continuously reduce energy consumption</td>
<td>Installation of LEDs - expand program (June)</td>
</tr>
<tr>
<td>Energy</td>
<td>E12</td>
<td>Maximize energy efficiency of wastewater treatment equipment</td>
<td>Replace a minimum of 10 HVAC rooftop units with SEER rating of 13 or better and/or EER of 11.3 or better (June)</td>
</tr>
<tr>
<td>Energy</td>
<td>E13</td>
<td>Distribute two compact fluorescent light (CFL) bulbs to each of the 1.4 million households in the city</td>
<td>Launch a pilot program to determine the feasibility of processing food waste from Santa Monica and Los Angeles area restaurants (September)</td>
</tr>
<tr>
<td>Energy</td>
<td>E14</td>
<td>Increase the level and types of customer rebates for energy efficient appliances, windows, lighting and heating and cooling systems</td>
<td>Distribute bulbs (June)</td>
</tr>
<tr>
<td>Energy</td>
<td>E16</td>
<td>Create a fund to acquire energy savings as a resource from LADWP customers</td>
<td>Implement the thermal energy storage (TES) rebate program (July)</td>
</tr>
<tr>
<td>Land Use</td>
<td>LU1</td>
<td>Promote high-density housing close to major transportation arteries</td>
<td>Issue RFP for demand side management (DSM) (July)</td>
</tr>
<tr>
<td>Land Use</td>
<td>LU2</td>
<td>Promote and implement transit-oriented development (TOD)</td>
<td>Evaluate RFPs for viability and cost (October)</td>
</tr>
<tr>
<td>Land Use</td>
<td>LU3/4/5</td>
<td>Make available underutilized city land for housing and mixed-use development/parks and open space/housing and mixed-use development (within 1500 feet of transit)</td>
<td>Submit new DSM programs to LADWP Board for approval (December)</td>
</tr>
<tr>
<td>Waste</td>
<td>WS1</td>
<td>Reduce or recycle 70% of trash by 2015</td>
<td>Update housing element (July)</td>
</tr>
<tr>
<td>Waste</td>
<td>WS2</td>
<td>Establish city working group to identify and evaluate publicly owned land (June)</td>
<td>Adopt city-wide density bonus ordinance (December)</td>
</tr>
<tr>
<td>Waste</td>
<td>WS3</td>
<td>Prioritize opportunities to transform underutilized land (December)</td>
<td>Conduct public outreach including workshops (September)</td>
</tr>
<tr>
<td>Education</td>
<td>Ed1/Ed2/Ed3</td>
<td>Citywide Climate Change Education Program</td>
<td>Establish city working group to identify and evaluate publicly owned land (June)</td>
</tr>
<tr>
<td>Education</td>
<td>Ed4</td>
<td>Conduct at least 250 business waste assessments (June)</td>
<td>Prioritize opportunities to transform underutilized land (December)</td>
</tr>
<tr>
<td>Education</td>
<td>Ed4</td>
<td>Implement recycling for at least 125,000 multi-family households (June)</td>
<td>Conduct public outreach including workshops (September)</td>
</tr>
<tr>
<td>Education</td>
<td>Ed4</td>
<td>Recruit at least 305 schools to participate in the LAUSD school recycling program (June)</td>
<td>Implement public participation activities (December)</td>
</tr>
<tr>
<td>Education</td>
<td>Ed4</td>
<td>Develop a centralized data system to track the recycling activities in the city in order to meet the city’s legal requirements (FY07/08)</td>
<td>Implement public participation activities (December)</td>
</tr>
<tr>
<td>Focus Area</td>
<td>Action No.</td>
<td>Measure</td>
<td>Milestone</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>2009</td>
<td>Energy</td>
<td>E5</td>
<td>Increase biogas co-firing of natural gas-fired power plants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E6</td>
<td>Present a comprehensive set of green building policies to guide and support private sector development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E7</td>
<td>Reduce energy use by all city departments to the maximum extent feasible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E9</td>
<td>Install the equivalent of 50 “cool roofs” on new or remodeled city buildings</td>
</tr>
<tr>
<td>Land Use</td>
<td>LU2</td>
<td>Promote and implement transit-oriented development (TOD)</td>
<td>Approve station area plans (March)</td>
</tr>
<tr>
<td></td>
<td>LU5</td>
<td>Clean up brownfields sites for community economic revitalization projects and open space</td>
<td>Remove environmental barriers to development at 25 or more underutilized properties</td>
</tr>
<tr>
<td>Airport</td>
<td>AIR3</td>
<td>Evaluate options to reduce aircraft-related GHG emissions</td>
<td>Complete GHG inventory, determine 1990 baseline and establish 2030 goal (December)</td>
</tr>
<tr>
<td>2010</td>
<td>Energy</td>
<td>E1</td>
<td>Meet the goal to increase renewable energy from solar, wind, biomass, and geothermal sources to 20% by 2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E8</td>
<td>Perform energy efficient retrofits on 497 city-owned buildings to continuously reduce energy consumption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E12</td>
<td>Maximize energy efficiency of wastewater treatment equipment</td>
</tr>
<tr>
<td>Transportation</td>
<td>T1</td>
<td>Require 85% of the fleet to be powered by alternative fuels</td>
<td>Port of Los Angeles will have 50% alt fuel or hybrid fleet 100% passenger sedans (FY09/10)</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>Convert 100% of Metropolitan Transit Authority (MTA) buses to alternative fuel</td>
<td>100% alt fuel MTA buses (FY09/10)</td>
</tr>
<tr>
<td>Land Use</td>
<td>LU3/4/5</td>
<td>Make available underutilized city land for housing and mixed-use development/parks and open space/housing and mixed-use development (within 1500 feet of transit)</td>
<td>Develop one to three city properties (December)</td>
</tr>
<tr>
<td>Waste</td>
<td>WsT1</td>
<td>Reduce or recycle 70% of trash by 2015</td>
<td>Expand multi-family recycling program to 50% of the city’s multi-family units Implement alternative technology facility to process post source-separated municipal solid waste for renewable energy generation</td>
</tr>
<tr>
<td>Open Space and Greening</td>
<td>OS/G1 &amp; OS/G6</td>
<td>Create 35 new parks or joint-use sites by 2010</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>Energy</td>
<td>E7</td>
<td>Reduce energy use by all city departments to the maximum extent feasible</td>
</tr>
<tr>
<td>2012</td>
<td>Energy</td>
<td>E7</td>
<td>Reduce energy use by all city departments to the maximum extent feasible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E8</td>
<td>Perform energy efficient retrofits on 497 city-owned buildings to continuously reduce energy consumption</td>
</tr>
<tr>
<td>Transportation</td>
<td>T1</td>
<td>Require 85% of the fleet to be powered by alternative fuels</td>
<td>85% entire fleet powered by alt fuel (FY11/12)</td>
</tr>
</tbody>
</table>
Community Impacts

MM2-1 Develop a construction staging plan and Traffic Management Plan (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 shall identify and provide alternate traffic detour routes, construction materials hauling routes, bus stops, shortest alternate transit routes and operation hours, alternative pedestrian routes, alternative bicycle routes, and residential and commercial access routes to be used during the construction period.

MM2-2 Inform event organizers in the Boyle Heights and Downtown Arts District communities of the construction schedule to avoid any conflicts in the use of areas near the 6th Street Viaduct for any festive events.

MM2-3 If homeless people were identified within the construction site, the Los Angeles Homeless Services Authority (LAHSA) should be contacted to provide services to those affected prior to construction.

Utilities and Emergency Services

MM2-4 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.

MM2-5 Coordinate with emergency service providers throughout the construction period to notify them of any changes in construction schedule, roadway closures, and detour routes.

Cultural Resources

MM2-6 Establish an Environmentally Sensitive Area (ESA) Action Plan, which would include fencing of site LAN 19-003683, archaeological and Native American monitoring during ground-disturbing activities, and training of construction workers.

Paleontology

MM2-7 Retain a qualified paleontologist to develop and implement a Paleontological Monitoring Plan. Conduct paleontological monitoring onsite to inspect new exposures created by earth-moving activities in areas underlain by older alluvium (the area east of US 101) and at depths greater than 5 ft below current grade for younger alluvium.
Air Quality

MM2-8 Implement fugitive dust source controls by requiring the contractor to:
- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to active and inactive sites during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations, where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.

MM2-9 Implement mobile and stationary source controls by requiring the contractor to:
- Reduce use, trips, and unnecessary idling from heavy equipment.
- Maintain and tune engines per manufacturer’s specifications to perform at EPA certification levels, where applicable, and at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
- Prohibit any tampering with engines and adhere to manufacturer’s recommendations.
- Lease new and clean equipment meeting the most stringent of applicable federal and state standards, if practicable.
- Utilize EPA-registered particulate traps and other appropriate controls, where suitable, to reduce emissions of particulate matter and other pollutants at the construction site.

MM2-10 Implement administrative controls by requiring the staff to:
- Require the contractor to prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.)
- Use alternative fuels such as natural gas and electric, where appropriate.
- Develop a construction traffic and parking management plan that minimizes interference and maintains traffic flow as part of the TMP.

Biological Resources

MM2-11 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
active nests of migratory bird species occur within the construction area, then a temporary exclusion fence 50 ft in diameter shall be assembled around the nest. The biologist shall then monitor the site of active nests during the construction activities. Once the biologist determines that chicks have fledged or parents have abandoned the nest, the temporary fence can be removed and construction in such area can proceed. If bats are found, bat proofing (exclusion) should be conducted outside of the breeding season (October 30 through March 1) after juvenile bats have learned to fly; exclusion should be staged to ensure that roosting sites in areas not currently under construction would be available at all times during the project to minimize the potential effects on bats.

**Cumulative Effects**
- To minimize cumulative community disruption, implement MM 2-1.
- To minimize air quality cumulative impacts, implement MM2-8 to MM2-10.

### 4.9.2 Alternative 3 – Replacement

The following paragraphs provide specific mitigation measures for each impacted resource under Alternative 3 in addition to the standard measures to be implemented by the City.

**Community Impacts**

In addition to mitigation measures to minimize impacts on traffic and transportation, air quality, and noise described in respective sections of the EIR/EIS, the following measures are recommended:

**MM3-1** Conduct a public outreach program to keep residents, businesses, utility service providers, and emergency service providers (including Fire and Police Departments) within the project area informed of the project construction schedule, demolition plans, material hauling plans, relocation plans and assistance programs, traffic-impacted areas, the Traffic Management Plan (TMP), and other relevant project information.

**MM3-2** Require the construction contractor to submit the means and methods for demolition for LABOE review and approval.

**MM3-3** Participate in ongoing meetings with the LABOE Los Angeles River Project Office (LARPO) to implement elements of the Los Angeles River Revitalization Master Plan (LARRMP) related to providing potential future connections to the river corridor from the viaduct.
MM3-4 Provide improvements to enhance the aesthetics and pedestrian safety of 11 out of 13 affected intersections along the proposed detour routes that could not be mitigated. Types of improvements would be developed with public input and using context sensitive design solutions, and may include but not be limited to the following: decorative crosswalk with community theme; raised median with hardscape treatment where space allows.

MM3-5 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 construction impacts on the community. The TMP will identify and provide alternate traffic detour routes, construction materials hauling routes, bus stops, shortest alternate transit routes and operation hours, alternative pedestrian routes, alternative bicycle routes, and residential and commercial access routes to be used during the construction period.

MM3-6 Inform event organizers in the Boyle Heights and Downtown Arts District communities of the construction schedule to avoid any conflicts in the use of areas near the 6th Street Viaduct for any festive events.

MM3-7 If homeless people were identified within the construction site, the Los Angeles Homeless Services Authority (LAHSA) should be contacted to provide services to those affected prior to construction.

**Traffic and Transportation/Pedestrian Facilities**
Implement MM3-5 as stated above.

MM3-8 Install new traffic signals, and connect to Los Angeles City ATSAC system at the intersection of 4th Street and US 101 SB On-/Off-Ramps.

MM3-9 Restripe to add an eastbound right-turn lane at the intersection of 4th Street and Soto Street.

**Utilities and Emergency Services**
Implement MM3-1.

**Visual Resources**
MM3-10 Establish an Aesthetics Advisory Committee (AAC) to provide input and advice throughout design of the project on bridge aesthetics for the new structure and associated roadways under improvement within the scope of this project. The AAC
will participate in design review meetings and provide input on selected design elements including, but not limited to, colors, textures, lighting, railings, and community/City gateway monumental elements.

Implement MM3-3 and MM 3-4.

**Cultural Resources**

**MM3-11** Prior to the start of any work that could adversely affect any characteristics that qualify the 6th Street Viaduct (Bridge No. 53C-1880 and 53-0595) as a historic property, contact the National Park Service Western Region Office (NPS) in Oakland, California, to determine if additional recordation is required for the historic property beyond that provided in “Historic American Engineering Record, 6th Street Bridge, HAER No. CA-176,” dated May 7, 1996. Provide NPS 30 days to respond to the additional recordation determination request. If additional documentation is required, Caltrans should ensure that the additional documentation is completed by the City and accepted by NPS before the viaduct is altered and/or demolished.

**MM3-12** Upon completion, copies of the documentation prescribed in Mitigation Measure 3-11, consisting of an acid-free xerographic copy of the report, prepared on standard 8.5-inch by 11-inch paper, should be retained by Caltrans District 7, deposited in the Caltrans Transportation History Library in Sacramento, and offered by the City to, at a minimum, the Los Angeles Public Library, Los Angeles Conservancy, Los Angeles City Historical Society, Historical Society of Southern California, City of Los Angeles Office of Historical Resources, and the California Office of Historic Preservation.

**MM3-13** Work with the Los Angeles Public Library to place the historical information from the HABS/HAER report on a City Web site with a link to a public library Web site, such as the Los Angeles Public Library Web site, available to the public for a minimum period of 3 years. The information link should also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on their Web site.

**MM3-14** Produce a documentary (i.e., 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 should be of broadcast quality, between 30- and 90-minute duration, and should be made available to local broadcast stations, public access channels in the local cable systems, and requesting schools/libraries; one copy should be submitted to the
Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento.

MM3-15 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 should be similar in general format to the “Historic Highway Bridges of California” published by Caltrans (1991) and should 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. The City should post an electronic version of the booklet on a City Web site and produce paper copies for distribution to local libraries, institutions, and historical societies. One copy should be submitted to the Caltrans Transportation Library and History Center in Sacramento. The City should maintain the camera-ready master booklet and produce additional copies if there is demand.

MM3-16 Install two new freestanding informative permanent metal plaques or signage at both ends of the bridge at public locations that provide a brief history of the bridge, its engineering features and characteristics, and the reasons it was replaced.

MM3-17 Offer artifacts removed from the viaduct during demolition to local museums or other suitable facilities to be determined by the City. The accepting institutions should arrange their own transportation to deliver the artifacts to designated locations.

MM3-18 Establish an Environmentally Sensitive Area (ESA) Action Plan, which would include fencing of site no. 19-003683, archaeological and Native American monitoring during ground-disturbing activities, and training of construction workers.

**Paleontology**

MM3-19 Retain a qualified paleontologist prior to the start of construction to develop and implement a Paleontological Monitoring Plan (PMP). Conduct paleontological monitoring onsite to inspect new exposures created by earth-moving activities in areas underlain by the older alluvium (the area east of US 101) and at depths greater than 5 ft below current grade for the younger alluvium.

**Air Quality**

MM3-20 To the extent applicable, implement fugitive dust source controls by requiring the contractor to:
- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to active and inactive sites during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations, where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.

**MM3-21** To the extent applicable, implement mobile and stationary source controls by requiring the contractor to:
- Reduce use, trips, and unnecessary idling from heavy equipment.
- Maintain and tune engines per manufacturer’s specifications to perform at EPA certification levels, where applicable, and at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
- Prohibit any tampering with engines and adhere to manufacturer’s recommendations.
- Lease new and clean equipment meeting the most stringent of applicable federal and state standards, if practicable.
- Utilize EPA-registered particulate traps and other appropriate controls, where suitable, to reduce emissions of particulate matter and other pollutants at the construction site.

**MM3-22** To the extent applicable, implement administrative controls by requiring the City staff to:
- Require the contractor to prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.)
- Use alternative fuels such as natural gas and electric, where appropriate.
- Develop a construction traffic and parking management plan that minimizes interference and maintains traffic flow as part of the TMP.

**Biological Resources**

**MM3-23** Prevent possible damage and injury to migratory birds by scheduling the removal of vegetation (whether native or horticultural landscaping) in the project area between September 1 and January 31. If initial vegetation removal and ground clearance cannot
be avoided between February 1 and August 31, engage a qualified biologist to conduct a preconstruction survey of trees and shrubbery for active nests. If active nests of migratory bird species occur within the construction area, then a temporary exclusion fence 50 ft in diameter should be assembled around the nest. The biologist should then monitor the site of active nests during the construction activities. Once the biologist determines that chicks have fledged or parents have abandoned the nest, the temporary fence can be removed and construction in such area can proceed. If bats are found, bat proofing (exclusion) should be conducted outside of the breeding season (October 30 through March 1) after juvenile bats have learned to fly; exclusion should be staged to ensure that roosting sites in areas not currently under construction would be available at all times during the project to minimize the potential effects on bats.

**Cumulative Effects**

- To minimize cumulative community disruption, implement MM 3-1 and MM 3-5.
- To minimize cultural resources cumulative impacts, implement MM 3-11 through MM3-18.
- To minimize air quality cumulative impacts, implement MM3-20 through MM3-22.
Chapter 5
Comments and Coordination
Chapter 5 Comments and Coordination

5.1 Introduction

The Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR Part 1500 et seq.) and the State CEQA Guidelines (14 CCR, 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 provide suggestions regarding alternatives and the types of impacts to be evaluated.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), authorizing U.S. highway and transit programs, was signed into law on August 10, 2005. Numerous provisions of the law are aimed at improving the environmental review process for transportation projects. One of the key requirements of SAFETEA-LU related to public involvement is that the lead agency must provide the “opportunity for involvement” to participating agencies and the public in developing the purpose and need and the range of alternatives to be considered for a proposed project.

Public involvement, agency coordination, and Native American tribal coordination were carried out during the development process of the proposed project by means of formal scoping meetings, participating agency coordination meetings, community meetings, potentially affected property owner meetings, political representative meetings, notification letters, and the creation and maintenance of a project Web site.

Ongoing coordination meetings with affected business owners and groups, government agencies, railroads, and utility companies are being conducted to update interested parties on the status of the proposed project, obtain public and agency input, and resolve issues. Letters describing the proposed project and inviting comment were sent to Native American groups and other individuals known to have an interest in the proposed project.

This chapter summarizes the results of the City of Los Angeles and Caltrans’ efforts to fully identify, address, and resolve project-related issues through early and continuing public involvement and agency coordination. A Public Outreach Report was compiled to provide a record of all the meetings held and the comments received.109

---

5.2 Pre-Scoping Activities

Several public outreach activities were conducted prior to the formal CEQA/NEPA scoping process to disseminate information about the viaduct improvement proposal and the actions undertaken by the City and Caltrans.

5.2.1 Initial Project Information Meetings

In October 2006, prior to commencement of the formal environmental review process, the Project Development Team (PDT) initiated widespread notification of government agencies and the public about proposed project information meetings. Notices were mailed to interested agencies and residents within a 2,000-ft radius of the viaduct; published in newspapers (the Los Angeles Times and La Opinion); and hand-delivered to residents and property owners in the immediate vicinity of the viaduct. Two proposed project information meetings were held – one on January 23, 2007, at the Artshare Los Angeles (west side of the Los Angeles River) and one on January 25, 2007, at St. Isabel Church (east side of the Los Angeles River). Approximately 80 people attended the meetings, listened to the proposed project information presentation, asked questions, and provided suggestions.

Several other proposed project information meetings were conducted upon request. These meetings were held with the Boyle Heights Neighborhood Council (BHNC) Land Use Committee (February 13, 2007), the BHNC Quadrant 4 (March 12, 2007), the Downtown Los Angeles Neighborhood Council (March 13, 2007), the BHNC Quadrant 3 (May 9, 2007), the Boyle Heights Resident Homeowner Association (May 19, 2007), and the Downtown Arts District Business Improvement District (October 3, 2007).

5.2.2 Community Advisory Committee Formation

Following the proposed project information meetings, a Community Advisory Committee (CAC) was formed. Twenty-five (25) potential members were identified by PDT members based on their representation of affected neighborhoods, businesses and various other stakeholders, and their willingness to serve as conduits between the project design team and their constituents. As of September 2011, 10 CAC meetings were conducted, as summarized below:

- CAC Meeting No. 1 was held March 29, 2007, at Benjamin Franklin Library, 2200 E. 1st Street. Seventeen (17) members attended the meeting. The PDT presented project information to CAC members and informed them about the objective of the CAC meetings and the role of its members. All members were provided the opportunity to ask questions related to the proposed project and express their concerns.
CAC Meeting No. 2 took place May 10, 2007, at the Boyle Heights Youth Technology Center, 1600 E. 4th Street. Fifteen (15) members and 2 guests attended the meeting. The members were divided into 5 small groups to discuss the issues and opportunities associated with the proposed project.

CAC Meeting No. 3 took place June 28, 2007, at the Boyle Heights Youth Technology Center, 1600 E. 4th Street. Thirteen (13) members attended the meeting. The objective of this meeting was to provide CAC members with an opportunity to participate in development of the purpose and need statement for use as a guide in proposed project alternative development and in the environmental document preparation.

CAC Meeting No. 4 took place August 28, 2007, at the Boyle Heights Youth Technology Center, 1600 E. 4th Street. Seventeen (17) members attended the meeting. The objective of this meeting was to provide CAC members with an opportunity to view possible replacement bridge types. CAC members also participated in a workshop for expressing their personal preferences among numerous potential bridge types, as input for the project team. Results of the votes received from the CAC members are presented in Figure 3 of Appendix N (Alternative Development Process), with the existing bridge type or abutment-to-abutment replication (Through Arches Category) receiving the highest number of votes at 16 and the extradosed concrete box girder (Cable Type Category) receiving 8 votes. The bridge concepts that received the third highest votes at 6 are steel half-through arch cast-in-place (CIP) girder approaches (Through Arches Category) and concrete slant leg frame concept (Deck Arches Category).

CAC Meeting No. 5 took place November 8, 2007, at the Boyle Heights Youth Technology Center, 1600 E. 4th Street. Eighteen (18) members attended the meeting. The objective of this meeting was to update CAC members on the screening of replacement bridge types and alignments, retrofit technologies, and status of the environmental review process.

CAC Meeting No. 6 took place March 26, 2008, at the 6th Street Viaduct site. Fifteen (15) CAC members participated in the site tour. They had an opportunity to see first-hand the cracks in structural concrete elements as a result of the alkali silica reaction (ASR) and the constraints affecting project implementation.

CAC Meeting No. 7 took place October 28, 2008, at the Boyle Heights Youth Technology Center, 1600 E. 4th Street. Eleven (11) members attended the meeting. The objective of this meeting was to update CAC members on the current project status and present a status
update of the environmental analysis process. CAC members expressed various preferences for bridge types, including replica and modern.

- CAC Meeting No. 8 took place February 12, 2009, at the Boyle Heights Youth Technology Center, 1600 E. 4th Street. Fifty (50) people were present at the meeting. Representatives of Council District 14, the President of the City of Los Angeles Board of Public Works, and the City of Los Angeles City Engineer participated in the meeting. The objective of this meeting was to brief the CAC members on the Administrative Draft EIR/EIS that was under review by Caltrans Headquarters and Legal Office. Four CAC members expressed their dislike of the staff-recommended modern bridge Concept 4 (Dual Tower Extradosed [cable supported]) and their concern that staff had disregarded previous CAC support for a replica concept. The team explained to the CAC that no final decision had been made regarding project alternatives, and that the public would have opportunities to provide input about the proposed project alternatives during the circulation and public hearing for the Draft EIR/EIS.

- CAC Meeting No. 9 took place on April 7, 2009, at the Boyle Heights Senior Center, 2839 E. 3rd Street, Los Angeles. Approximately forty (40) people were present at the meeting. The Council member for Council District 14 and the City Engineer participated in the meeting. The objective of the meeting was to brief the members about modifications made to the Draft EIR/EIS based on feedback received during the previous meeting. In addition, the design team solicited input from members regarding architectural elements that should be considered as part of the various replacement bridge types. The City displayed renderings of 7 bridge types for review and feedback from the members. The team explained that the members and the public will have opportunities to provide feedback related to the bridge type during the public review process. The team informed the members that the Draft EIR/EIS will not include a staff-recommended bridge type.

- CAC Meeting No. 10 took place on July 29, 2010, at the Boyle Heights Youth Technology Center, 1600 E. 4th Street. Thirty (30) people were present at the meeting (based on the sign-in sheet). Representatives of Council District 14 and the City of Los Angeles City Engineer participated in the meeting. The objective of this meeting was to provide an update on the progress of the 6th Street Viaduct Seismic Improvement Project since CAC Meeting No. 9 in April 2009; explain preferred alternative evaluation process; discuss schedule milestones; and present a potential design expression for Bridge Concept 4A. The City Engineer informed the CAC members that Alignment 3B and Bridge Concept 4A have been identified as the preferred alternative. Mr. Jesse Leon, a representative of Council District 14, informed the CAC members that Council Member Jose Huizar values the input of the CAC members and that they should attend upcoming City of Los Angeles public hearings for the project.
Mr. Leon reiterated the need to replace the 6th Street Viaduct due to the ASR damage and seismic safety concerns. Mr. Leon stated that mitigation efforts for businesses and residents will be part of the process to ensure that an equitable process takes place. Mr. Leon also informed the CAC members that several agencies still need to review the final draft of the Final EIR/EIS prior to document certification. During the question and answer session, several CAC members expressed their support for the preferred Bridge Concept 4A.

Additional CAC meetings will be held as the proposed project proceeds to keep the public informed of project progress and to allow them to provide input at key milestones.

### 5.3 Scoping Process

The scoping process was initiated by widespread notification of government agencies and the public via publication of a Notice of Intent (NOI) and a Notice of Preparation (NOP) announcing initiation of the EIR/EIS. The NOI was published in the *Federal Register* (Volume 72, Number 169) on August 31, 2007, in accordance with NEPA. The NOP was posted on the City of Los Angeles Web site, the project’s public Web site, and with the Los Angeles County Clerk/Recorder throughout the public review period (July 23, 2007, to September 13, 2007), in accordance with CEQA. Other notification activities included placement of public notices in newspapers of general circulation; mailing the NOP to potentially affected government agencies, residents, and businesses; and translation of public documents from English to Spanish. Other project information was also posted on the public Web site indicated above.

#### 5.3.1 Mailings

The NOP was mailed to government agencies, business groups, neighborhood associations, property owners, and other stakeholders on July 23, 2007. These groups were invited to scoping meetings held on August 14 and 16, 2007.

A scoping meeting invitation, which gave details about the proposed project and announced the times and locations of the public scoping meetings, was mailed to more than 1,500 occupants within a 2,000-ft radius of the proposed project corridor.

---

110 [http://eng.lacity.org/techdocs/emg/Environmental_Review_Documents.htm](http://eng.lacity.org/techdocs/emg/Environmental_Review_Documents.htm)

5.3.2 Public Noticing
Advertisements announcing the scoping meetings were placed in the Los Angeles Times and La Opinion. The Los Angeles Times is circulated throughout the county and read by millions of subscribers. La Opinion is circulated to the Latino community of Los Angeles.

The notices were published in English and Spanish to accommodate the diversity of the affected communities. An English advertisement was placed in the Los Angeles Times on July 27, 2007, and a Spanish advertisement was placed in La Opinion on July 27, 2007.

5.3.3 Scoping Meetings
Two separate scoping meetings were held on August 24, 2007; one was for government and public agencies and the other for the general public. The meetings were held at the Artshare Los Angeles, which is located at 326 S. Hewitt Street in Los Angeles on the west side of the Los Angeles River. The agency meeting took place from 2:00 p.m. to 4:00 p.m., and the general public meeting took place from 6:00 p.m. to 8:00 p.m. Another scoping meeting was held on August 26, 2007, at the Boyle Heights Youth Technology Center, which is located at 1600 E. 4th Street on the east side of the river and within the Boyle Heights community.

The agenda for these meetings included an introduction of the proposed project team members, a PowerPoint presentation on the proposed project, and a question and answer period. Attendees also participated in an open house. Display boards illustrating the proposed project limits and alternatives were placed throughout the room for attendees to view and interact with project representatives. The meetings were staffed by individuals representing the City of Los Angeles and the project consultant team. At both public meetings, Spanish interpreters were available to accommodate any non-English speakers.

5.3.4 Participating Agency Coordination
Section 6002 of SAFETEA-LU requires that all transportation projects requiring an EIS, for which the original NOI was published in the Federal Register after August 10, 2005, must have a plan established for coordinating public and agency participation and comment during the environmental review process. It is the responsibility of the lead agencies to develop the coordination plan to facilitate and document the interaction between the lead agencies and participating and cooperating agencies and the public.

As of July 1, 2007, Caltrans assumed FHWA’s authority and responsibility for compliance with NEPA and other environmental laws. The Memorandum of Understanding (MOU) between FHWA
and Caltrans concerning the State of California’s Participation in the Surface Transportation Project Delivery Pilot Program allows Caltrans to serve as the federal lead agency on this project.

As part of the Scoping Process and in accordance with the Section 6002 requirement, Caltrans prepared a Coordination Plan for this proposed project (see Appendix J). A summary of the coordination activities is provided below:

5.3.4.1 Invitation to Become Cooperating/Participating Agencies
Cooperating agencies are the federal agencies, other than the federal lead agency, which have jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative. Cooperating agencies are also participating agencies. No cooperating agencies were identified for this project.

Participating agencies are federal, state, regional, or local agencies that may have an interest in the project. A list of pertinent federal, state, and local agencies was developed. A letter of invitation to participate in the project was sent on July 26, 2007, to agencies likely to have an interest. The rest of the agencies on the list received notification regarding the project through the NOI and NOP. Nine agencies responded to the letter of invitation, as shown in Table 5-1.

5.3.4.2 Coordination Meetings
Three coordination meetings were held during the Section 6002 environmental review process. The first meeting was held on October 31, 2007, at the Caltrans District 7 Office to provide the participating agencies with project information and to discuss the roles and responsibilities of the participating agencies. Caltrans provided the participating agencies with the opportunity for their involvement in developing the draft purpose and need statement. The meeting also allowed the participating agencies to advise and provide input on the technical studies. In addition, Caltrans provided the agencies with information regarding the range of alternatives being considered and further studied. They commented on this material, and a brief discussion was held after this information was presented. A site visit was also conducted following the first meeting.

The second participating agency meeting was held on February 4, 2008. An update of the project status was presented to the agencies. Caltrans outlined the next stages in the participating agency role in the environmental review process, including discussion of technical studies and methodologies, as well as social, economic, and environmental impacts within the project area. In addition, Caltrans provided the agencies with the opportunity to comment on anticipated issues that might arise in the future. Floodplain issues, railroad concerns, and the Los Angeles River Revitalization Plan were the main topics that the agencies noted.
Table 5-1  
Participating Agency List

<table>
<thead>
<tr>
<th>Participating Agencies</th>
<th>Contact Person/Title</th>
<th>Phone/E-mail/Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Army Corps of Engineers</td>
<td>Theodore Masigat, Engineering Division, Operations, Los Angeles District</td>
<td>(213) 452-3393; <a href="mailto:theodore.j.masigat@usace.army.mil">theodore.j.masigat@usace.army.mil</a> 915 Wilshire Boulevard, Los Angeles, CA 90017</td>
</tr>
<tr>
<td>U.S. Army Corps of Engineers</td>
<td>Phuong Trinh, Regulatory Division, Los Angeles District</td>
<td>(213) 452-3372; <a href="mailto:Phuong.h.trinh@usace.army.mil">Phuong.h.trinh@usace.army.mil</a> 915 Wilshire Boulevard, Los Angeles, CA 90017</td>
</tr>
<tr>
<td>*U.S. Army Corps of Engineers</td>
<td>Gabe Brooks, Right-of-Way Division, Los Angeles District</td>
<td>915 Wilshire Boulevard, Los Angeles, CA 90017</td>
</tr>
<tr>
<td>*U.S. Army Corps of Engineers</td>
<td>Ken Wong, Permits, Los Angeles District</td>
<td>915 Wilshire Boulevard, Los Angeles, CA 90017</td>
</tr>
<tr>
<td>U.S. Environmental Protection Agency</td>
<td>Susan Sturges, Environmental Review Office Community and Ecosystems Division</td>
<td>(415) 947-4188; <a href="mailto:sturges.susan@epa.gov">sturges.susan@epa.gov</a> 75 Hawthorne Street, San Francisco, CA 94105</td>
</tr>
<tr>
<td>Advisory Council on Historic Preservation</td>
<td>Carol Legard, Federal Highway Liaison Office of Federal Agency Programs</td>
<td>(202) 606-8522; <a href="mailto:clegard@achp.gov">clegard@achp.gov</a> 1100 Pennsylvania Avenue NW Suite 809 Old Post Office Building Washington, DC 20004</td>
</tr>
<tr>
<td>*U.S. Department of Housing and Urban Development Los Angeles Field Office</td>
<td>William Vasquez, CPD Field Office Director</td>
<td>611 West 6th Street, Suite 800 Los Angeles, CA 90017</td>
</tr>
<tr>
<td>*U.S. Department of Commerce</td>
<td>Environmental Review Section</td>
<td>14th and Constitution NW, Room 6800 Washington, DC 20230</td>
</tr>
<tr>
<td>*U.S. Department of Energy</td>
<td>Environmental Review Section</td>
<td>1000 Independence Avenue SW 4G-064 Washington, DC 20585</td>
</tr>
<tr>
<td>*Federal Railroad Administration; Office of Railroad Development</td>
<td>David Valenstein, CPD Field Office Director</td>
<td>400 Seventh Street SW MS20 Washington, DC 20590</td>
</tr>
<tr>
<td>City of Los Angeles Department of Parks and Recreation</td>
<td>David Attaway, Environmental Supervisor</td>
<td>(213) 928-9130 4155 S. Saint Louis Street, Los Angeles, CA 90033</td>
</tr>
<tr>
<td>City of Los Angeles Bureau of Engineering Real Estate Group</td>
<td>Frank Viramontes, Chief Real Estate Officer II</td>
<td>(213) 485-5447; <a href="mailto:frank.viramontes@lacity.org">frank.viramontes@lacity.org</a> Department of Public Works, Bureau of Engineering Real Estate Division 600 S. Spring Street, 7th Floor, Stop 515 Los Angeles, CA 90014</td>
</tr>
<tr>
<td>Los Angeles County Metropolitan Transportation Authority</td>
<td>John C. Miller, P.E., Engineering Project Manager</td>
<td>(213) 922-2000; <a href="mailto:millero@mta.net">millero@mta.net</a> 1 Gateway Plaza Mail Stop: 99-22-1 Los Angeles, CA 90012-2932</td>
</tr>
<tr>
<td>SCRRRA—Metrolink</td>
<td>Laurene Lopez, Community Relations/Environmental Review Administrator</td>
<td>(213) 452-0288; lopezl@scrра.net SCRRRA—Metrolink 700 South Flower Street, 26th Floor Los Angeles, CA 90017</td>
</tr>
</tbody>
</table>

Note: * Federal agency not responding to the letter of invitation to become a participating agency.

Per SAFETEA-LU, a federal agency invited shall be designated as a participating agency unless the agency declines the invitation by the deadline specified and states that the agency (1) has no jurisdiction or authority with respect to the project, (2) has no expertise or information relevant to the project, and (3) does not intend to submit comments on the project.
The third meeting was held on October 20, 2008. Caltrans provided an update to the participating agencies on the project status. A summary of the Alkali Silica Reaction (ASR) Workshop was presented. In addition, Caltrans discussed the environmental analysis results. Additional participating agency meetings will be held as the EIR/EIS progresses.

A list of all agencies invited to become a participating agency or cooperating agency is located in the Coordination Plan (Appendix J).

During the project development period, Caltrans had several meetings with public agencies. Caltrans, City of Los Angeles, and State Historic Preservation Officer (SHPO) held a meeting on April 6, 2009. The main focus was the discussion of Alkali Silica Reaction and possible mitigation measures. A field review was conducted after the meeting.

Caltrans and the City of Los Angeles held a meeting on February 4, 2009, with the Los Angeles Office of Historic Resources. The main purpose of this meeting was to discuss the proposed measures to be included in the Section 106 Memorandum of Agreement (MOA) for the various bridges undergoing improvement.

In addition, Caltrans, the City of Los Angeles Department of Public Works Bureau of Engineering, and the City of Los Angeles Planning Department had a meeting with the Los Angeles Conservancy on October 29, 2007. The purpose of this meeting was to provide detailed information about the project development process and other background information. The meeting also provided a forum for the Los Angeles Conservancy to ask questions and gain a better understanding of the issues surrounding the project.

Additional coordination meetings with federal, state, and local agencies are ongoing, and they will continue throughout the planning stage of the proposed project. In addition, various historical society/historic preservation groups and Native American individuals/organizations have been contacted and kept informed about the status of project development.

### 5.4 Public Participation

Public participation has been an important aspect of this project. A series of meetings with affected property owners, community groups, and interested agencies has been carried out throughout the project development period and will continue as the project moves forward. Representatives from the City of Los Angeles Department of Public Works Bureau of Engineering, Caltrans, and the project consultant team have presented project information and answered questions from the attendees at numerous meetings. Several methods were used to inform the public of meetings,
such as newspaper notices, invitations sent to affected property owners and community groups, invitations to become a participating agency and/or cooperating agency, and the NOP/NOI.

The community meetings carried out during the Draft EIR/EIS preparation consisted of the following:

- Boyle Heights Neighborhood Council Land Use Committee – February 13, 2007
- Boyle Heights Neighborhood Council Quadrant 4 – March 12, 2007
- Downtown Los Angeles Neighborhood Council – March 13, 2007
- Boyle Heights Neighborhood Council Quadrant 3 – May 9, 2007
- Boyle Heights Resident Homeowner Association – May 19, 2007
- Downtown Arts District Business Improvement District – October 3, 2007
- Community Redevelopment Agency of Los Angeles, Eastside Region – October 4, 2007
- Los Angeles Conservancy – October 29, 2007
- City of Los Angeles Interdepartment Planning Staff – March 24, 2008
- City of Los Angeles Interdepartment Planning Staff – April 4, 2008
- American Institute of Architects – April 23, 2008
- ASR Workshop – August 27, 2008
- Central City East Association – December 3, 2008
- City of Los Angeles Office of Historic Resources – February 4, 2009

In addition to the above-mentioned meetings, a CAC was formed, and ten meetings have been conducted. Refer to Section 5.2.2 for more detailed information regarding the CAC.

The Public Outreach Report\(^\text{112}\) was also prepared to summarize the project outreach activities and the comments received. The report is available for review at the City of Los Angeles Department of Public Works Bureau of Engineering, Bridge Improvement Program, and Caltrans District 7 office.

### 5.5 Business Survey

A business survey was conducted to acquire information on business operations and identify issues and concerns of businesses located within the vicinity of the project construction limits. More than 100 survey questionnaires were distributed to local businesses within the project area. Forty (40) businesses were interviewed by the outreach team. The information collected was evaluated to determine the potential effects on businesses and employees as a result of project implementation.

5.6 Comments and Responding to Comments

Numerous questions and concerns were raised at the public information meetings, scoping meetings, and coordination meetings. In addition, 24 written comments were received during the scoping period.

The main issues and concerns that were expressed include:

- Historic resource preservation
- Public safety
- Costs and funding
- Preference for either retrofit or replacement of the viaduct
- Design and development opportunities
- Management of homeless residents
- Integration of the proposed Los Angeles River Revitalization Project
- Business impacts due to right-of-way acquisitions
- Construction impacts, including traffic detours
- Traffic volumes and speed on the viaduct
- Loss of industrial land use area
- Impacts to railroad operation

Most of the comments raised at the various meetings were responded to by the project team to the extent that the information was available at the time. Written responses to selected substantive comments were prepared, and follow-up meetings with the commenting parties were held to respond to the issues of concern. All comments received were considered during the project development/preliminary design phase and in the Draft EIR/EIS preparation.

5.7 Public Review of Draft EIR/EIS

This section provides a summary of public involvement activities undertaken during the review period for the Draft EIR/EIS. All notices and announcements prepared as part of the public involvement process including public hearing information are contained in the Public Involvement Activities Report – Environmental Preparation Phase, October 2011. The report is available for review at the City of Los Angeles Bureau of Engineering, Environmental Management Office.
5.7.1 Draft EIR/EIS Distribution
Caltrans and the City circulated the Draft EIR/EIS for public review between June 16, 2009, and August 24, 2009. The Notice of Availability (NOA) was published in the Federal Register on July 10, 2009 (Volume 73, Number 131 EIS No. 20090226). The Draft EIR/EIS was mailed to elected officials, government agencies, and interested parties. The NOA and invitation to public hearings were prepared in English and Spanish.

5.7.2 Notices of Public Hearings
Advertisements announcing the Draft EIR/EIS public hearings were placed in the Los Angeles Times, La Opinión, Eastside Sun, and Los Angeles Downtown News newspapers. In addition, public notices written in English and Spanish were mailed to current residents located within a 2,000-foot (ft) radius of the 6th Street Viaduct.

5.7.3 Public Hearings
Three Draft EIR/EIS public hearings were held. The first public hearing was held at the Caltrans District 7 Headquarters at 100 S. Main Street in Los Angeles, on July 14, 2009, from 2:00 p.m. to 4:00 p.m. Based on the sign-in sheet, 24 individuals attended the meeting (10 City staff, 10 Caltrans staff, and 4 interested parties). The second public hearing was held on the east side of the project at the Boyle Heights Senior Center at 2839 East 3rd Street in Los Angeles, on July 14, 2009, from 6:00 p.m. to 8:30 p.m. Based on the sign-in sheet, 37 individuals attended the meeting (6 City staff, 1 Caltrans staff, and 30 interested parties). The third and final public hearing was held on the west side of the project at the Inner City Arts Building at 720 Kohler Street in Los Angeles, on July 21, 2009, from 5:00 p.m. to 7:00 p.m. Based on the sign-in sheet, 32 individuals attended the meeting (2 Council District 14 staff, 7 City staff, 1 FHWA staff, 2 Caltrans staff, and 20 interested parties).

The agenda for all of the hearings included an open house viewing of project displays, introduction of project team members, a project presentation, and public testimony with a court reporter. The project display boards included aerial photographs, engineering drawings, photo simulations, and bridge concept models for attendees to view while interacting with project representatives. A Spanish-language translator was available at all the public hearings.

5.7.4 Verbal Comments Received during Public Hearings
The public hearings included an opportunity for public comments which were recorded by a court reporter. Attendees were asked to complete a comment card if there was a specific comment or question that needed to be answered by the panel. Table 5-2 presents a summary of...
the verbal testimony received and answers to questions provided by staff. Comments and substantive responses are summarized below are included in their entirety in the Transcripts of Public Hearing kept on file at the City of Los Angeles Bureau of Engineering Bridge Improvement Program and the Caltrans District 7 Office. No comments were received at the first hearing held at the Caltrans office.

Table 5-2

<table>
<thead>
<tr>
<th>Name</th>
<th>Comment/Question</th>
<th>Response</th>
<th>Page No. of Transcript</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boyle Heights Senior Center, 2839 East 3rd Street, Los Angeles, July 14, 2009, 6:00 p.m. to 8:30 p.m.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art Geilman, Shalom and Sons</td>
<td>Will there be any tax consequence for any local businesses?</td>
<td>No.</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Will there be any state or federal money for disruption of business?</td>
<td>Yes, state and federal money. Mostly federal money.</td>
<td></td>
</tr>
<tr>
<td>Unknown Commentor</td>
<td>What plan is there to protect businesses and buildings that are along the alignment during demolition?</td>
<td>Many means and methods would be used by the demolition contractor, generally in the form of debris walls, monitoring, and pre-inspection. Typically, specifications are made with the contractor. For instance, monitoring devices are installed to measure the vibration to determine the degrees of movement. Physical surveys of existing buildings to document their condition before, during, and after the start of demolition are also conducted. Screen walls may also be erected between existing buildings and the project. When the bridge is brought down vertically, then crews have to remove the debris and will be using local roads. Or, depending on the contractor, the bridge will be brought down in pieces, staying within the footprint of the existing bridge. Eventually the contractor will have to get outside that footprint to remove the bridge.</td>
<td>34</td>
</tr>
<tr>
<td>Rafael (no last name or residence given)</td>
<td>How will the bridge be taken down with bringing it down on our building, which is situated partly under the bridge, or blocking our access?</td>
<td>A vertical wall would be built between your building and the bridge. Your access is currently through City right-of-way underneath the bridge, so to address your concerns for access, we’d need to look at your lease agreement with the City.</td>
<td>36</td>
</tr>
<tr>
<td>Geilman (no last name given)</td>
<td>We wouldn't be able to access the building with forklifts and trucks if you're putting a wall there.</td>
<td>Currently, if you have access from underneath the bridge into your building, that access is through City right-of-way, and so we would have to look at the lease agreement that you currently have with the City in leasing their property to get access that's not on a public road.</td>
<td>38</td>
</tr>
<tr>
<td>Rosalie Guroa, Boyle Heights Resident</td>
<td>Whatever the final design of the bridge, I’d like it to be closer to the original, which is a landmark in our community.</td>
<td>The EIR is looking deeply into that issue. Traffic was modeled for the streets that traffic would be diverted to. We did traffic modeling of the streets that the traffic would be diverted</td>
<td>39</td>
</tr>
</tbody>
</table>
### Table 5-2
Comments/Questions and Responses Provided at the Public Hearings

<table>
<thead>
<tr>
<th>Name</th>
<th>Comment/Question</th>
<th>Response</th>
<th>Page No. of Transcript</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arturo Vera, Boyle Heights Resident and member of the Boyle Heights Homeowners Association</td>
<td>When the bridge is closed, it will have major impacts to my community, especially traffic on 4th Street. How are you addressing that?</td>
<td>to, like 4th Street, 7th Street, Soto, Boyle, and on the other side, Alameda, Central. We have traffic growing forecasts, and we have come up with measures to make it better, but it won't be perfect. We won't try to gloss over the fact that there will be impacts because there are 13,000 cars that we have to move off that bridge for about four years, so we're going to do our utmost with good design and planning and working with our partner agencies to make the affected intersections and streets run as smoothly as possible.</td>
<td>42</td>
</tr>
<tr>
<td>Victoria Torres, Boyle Heights Historical Society</td>
<td>Concerned over the speed limit on the widened and straightened bridge.</td>
<td>The speed limit on the bridge is not expected to be changed.</td>
<td>44</td>
</tr>
<tr>
<td>Carol Armstrong, City of LA River Project Office</td>
<td>Would like to see the project as a retrofit; if a new bridge is required, incorporate “riverly” elements. It is important that the high-speed rail and its future impacts be considered with this project.</td>
<td>The comment is acknowledged by the moderator.</td>
<td>45</td>
</tr>
<tr>
<td>Joaquin Castellanos, Boyle Heights Resident</td>
<td>The cable bridge looks beautiful, but there are already too many cables in the area. Prefers the bridge design to reflect the history of the community.</td>
<td>The comment is acknowledged by the moderator.</td>
<td>45</td>
</tr>
<tr>
<td>Jim Zant, Cal Hono Freight</td>
<td>Cal Hono Freight subleases a property that might be affected by the demolition of the bridge. The gate for the truck maneuvering area is adjacent to the pylons.</td>
<td>If the loading docks or travel/maneuvering area is underneath the bridge, that land is currently City right-of-way.</td>
<td>46</td>
</tr>
<tr>
<td>Mike Bueller, Los Angeles Conservancy</td>
<td>Regarding bridge design Alternative 1-A, is it described somewhere, because it isn’t included in the EIR? What are that alternative’s differences other than additional columns in the railroad right-of-way? Why are right-of-way costs higher for the replication alternative? Can we assume that those parcels/buildings designated for acquisition would be demolished?</td>
<td>The full replica abutment is not documented in the Draft EIR/EIS. It will all be documented in the Final EIR/EIS. The alternative has differences in construction and higher right-of-way costs/impacts. The bridge is wider and has more columns/footings. They would be demolished and businesses relocated.</td>
<td>46</td>
</tr>
<tr>
<td>Paul Habib, From Councilman Jose Huizar’s Office</td>
<td>If Alternative 3-B is the preferred alignment, it would cost a hundred million more and it affects the most</td>
<td>The PDT is looking into modifying Alignment 3-B in an effort to minimize overall right-of-way takes.</td>
<td>51</td>
</tr>
</tbody>
</table>
### Table 5-2

Comments/Questions and Responses Provided at the Public Hearings

<table>
<thead>
<tr>
<th>Name</th>
<th>Comment/Question</th>
<th>Response</th>
<th>Page No. of Transcript</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Miguel Afaro,</strong> Boyle Heights Resident and Resurrection Church member</td>
<td>amount of properties. Why was that selected as opposed to 3-A or another one with a little less impact?</td>
<td>The comment is acknowledged by the moderator.</td>
<td>51</td>
</tr>
<tr>
<td><strong>Martha Cisneros,</strong> Boyle Heights Resident</td>
<td>He and members of Resurrection Church prefer the futuristic look of the bridge. Some of the designs have big walls that will attract graffiti. Also the lighting and pylons in the middle of the street are a hazard.</td>
<td>The comment is acknowledged by the moderator.</td>
<td>51</td>
</tr>
<tr>
<td><strong>Gilman (No last name given)</strong></td>
<td>Will there be any state or federal money for disruption of businesses.</td>
<td>Yes, mostly federal money</td>
<td>52</td>
</tr>
<tr>
<td><strong>Alana Linn,</strong> Little Tokyo Resident</td>
<td>Would like future public hearings to be in public libraries or schools that are more accessible on bike. Would like the public hearings videotaped and available on the Internet. Believes a short break between presentation and question/answer sessions would be useful.</td>
<td>The comment is acknowledged by the moderator.</td>
<td>29</td>
</tr>
<tr>
<td><strong>John McShane,</strong> Silver Seed Company</td>
<td>Silver Seed Company was not surveyed for the project.</td>
<td>Silver Seed Company was surveyed. (The survey of affected property owners was performed in September 2007. The survey team received the response to the questionnaire back from Silver Seed Company. The information from the survey form was summarized in Table 3.4-2).</td>
<td>34</td>
</tr>
<tr>
<td><strong>Paul Habib,</strong> From Councilman Jose Huizar’s Office</td>
<td>If Alternative 3-B is the preferred alignment, it would cost a hundred million more and it affects the most amount of properties. Why was that selected as opposed to 3-A or another one with a little less impact?</td>
<td>The PDT is looking into modifying Alignment 3-B in an effort to minimize overall right-of-way takes. The design of the bridge is only 5 to 10% complete, so another 90% of design work still needs to be done. (Note, Mr. Habib also attended the July 14 meeting and would like to make the same comment for record).</td>
<td>36</td>
</tr>
<tr>
<td><strong>Estella Lopez,</strong> Arts District BID</td>
<td>What is the radius that you are using for the outreach to the business owners around the impact zone? What is the impact zone on this side of the bridge? Concern is for the emerging live/work units in old industrial buildings that are not readily visible from the street.</td>
<td>A 2,000-foot radius around the bridge was used for mailing notices for this public hearing. At the start of the project, the community outreach and business outreach consultants canvassed the project area and have compiled a detailed database of inhabited and uninhabited businesses.</td>
<td>38</td>
</tr>
<tr>
<td><strong>Jim Bickley,</strong> Spilo Worldwide</td>
<td>How will the modified 3-B alternative affect properties on the northwest side of the bridge?</td>
<td>The alignment on the west side remains the same, so it’s really no change to that area.</td>
<td>41</td>
</tr>
</tbody>
</table>
Table 5-2
Comments/Questions and Responses Provided at the Public Hearings

<table>
<thead>
<tr>
<th>Name</th>
<th>Comment/Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alana Linn, Little Tokyo Resident</td>
<td>The bridge and project could represent not only earthquake preparedness but green initiatives. It would be a very tangible way of presenting these important issues for all of Los Angeles.</td>
<td>The comment is acknowledged by the moderator.</td>
</tr>
<tr>
<td>Tiffany Sum, Downtown Resident</td>
<td>The LA River Revitalization Initiative is aligning with this project and may be aligned with cultural activities or interest with the development of the City.</td>
<td>The comment is acknowledged by the moderator.</td>
</tr>
</tbody>
</table>

5.7.5 Comments Received from Public Agencies and Interested Parties

During the Draft EIR/EIS public review period, 26 e-mails and letters were received, as summarized in Table 5-3. An additional written comment was received during CAC 10 meeting in July 2010. Responses to all written comments are provided in Appendix M of this Final EIR/EIS.

Table 5-3
Summary of Written Comments Received on Draft EIR/EIS

<table>
<thead>
<tr>
<th>Comment Letter No.</th>
<th>Name</th>
<th>Date Received</th>
<th>Issues</th>
</tr>
</thead>
</table>
| 1                  | Hill, Farrer & Burrill LLP (representing Spilo Worldwide) | June 29, 2009 | • Concerns over acquisition of property  
• Impacts to access  
• Construction noise and dust |
| 2                  | Federal Emergency Management Agency (FEMA) | July 13, 2009 | • Comply with the Flood Insurance Rate Maps requirements  
• Comply with the National Flood Insurance Program requirements |
| 3                  | Martha Cisneros                           | July 14, 2009 | • In support of Alternative 1A and opposed to all others |
| 4                  | Juaquin Castellanos                       | July 14, 2009 | • In support of Alternative 1A |
| 5                  | Victoria Torres                           | July 14, 2009 | • In support of Alternative 1A |
| 6                  | Kevin Break                              | July 14, 2009 | • Ensure bridge is “pigeon-proof”  
• Provide outlets for 120/220/480 voltage to accommodate filming at the bridge |
| 7                  | Art Herrera                               | July 14, 2009 | • In support of Alternative 4A |
| 8                  | Tiffany Sum                               | July 14, 2009 | • In support of Alternative 4A |
| 9                  | John Fisher                               | July 14, 2009 | • Incorporate original design elements of existing bridge in the new bridge, including the pyramid shape, art deco light standards, and flower design (pictures provided) |
| 10                 | Cal Hono Freight                          | July 15, 2009 | • Concerns over potential partial acquisition and construction staging areas |
### Table 5-3
Summary of Written Comments Received on Draft EIR/EIS

<table>
<thead>
<tr>
<th>Comment Letter No.</th>
<th>Name</th>
<th>Date Received</th>
<th>Issues</th>
</tr>
</thead>
</table>
| 11                 | City of Los Angeles Cultural Heritage Commission                      | July 30, 2009 | - Designation as Historic-Cultural Monument (HCM) not mentioned in Draft EIR Executive Summary  
                       |                                                                     |               | - Identify alternatives that will allow bridge to retain its HCM status  
                       |                                                                     |               | - Provide full replication/reconstruction alternative  
                       |                                                                     |               | - Reconsider artificial constraints guiding project alternative analysis  
                       |                                                                     |               | - Provide an additional partial preservation alternative  
                       |                                                                     |               | - Inadequate mitigation measures for Alternative 3-Replacement  
                       |                                                                     |               | - Potentially inappropriate location for the retention and reuse of the bridge’s original steel arches  
                       |                                                                     |               | - Effects of the proposed alternatives on architectural elements not physically connected to the bridge but in close proximity  
                       |                                                                     |               | - Cite guidelines for Historic Rehabilitation and Replacement by the American Association of State Highway and Transportation Officials  
                       |                                                                     |               | - MM-4 and MM-15 imply MOA already executed  
                       |                                                                     |               | - SHPO’s role unclear in concurrence with a finding of eligibility and with the HPSR  
                       |                                                                     |               | - Clarify CAC support of full replication alternative  
                       |                                                                     |               | - Draft EIR presented information inconsistent with CAC meeting minutes  
                       |                                                                     |               | - Incorrect contact information for Office of Historic Resources  |
| 12                 | City of Los Angeles Bureau of Street Lighting (BSL)                   | July 28, 2009 | - Nighttime glare and light pollution  
                       |                                                                     |               | - Clarify historic lighting replacement objectives and design standards  |
| 13                 | Glacier Cold Storage                                                 | July 29, 2009 | - Concerns over potential partial acquisition and construction staging areas  |
| 14                 | County of Los Angeles Department of Public Works                     | August 6, 2009| - In support of project  
                       |                                                                     |               | - Impacts to Los Angeles River Master Plan (LARMP) objectives  
                       |                                                                     |               | - River pollutants  |
| 15                 | State of California Public Utilities Commission                       | August 13, 2009| - Design criteria must comply with Commission General Orders  
                       |                                                                     |               | - Arrange meeting with the Rail Crossings Engineering Section of the Public Utilities Commission  |
| 16                 | Central City East Association                                        | August 14, 2009| - Impacts to Arts District during construction  
                       |                                                                     |               | - Hire business impact specialist to accommodate businesses during construction  
                       |                                                                     |               | - Open/recreational space creation  |
| 17                 | Stover Seed Company                                                  | August 14, 2009| - Impacts to 6th Street frontage road would eliminate access and reduce parking  
                       |                                                                     |               | - Public involvement initiated too late in environmental process  |
| 18                 | Hill, Farrar & Burrill LLP (representing Spilo Worldwide)            | August 14, 2009| - Cumulative effects of related projects (high-speed rail)  
                       |                                                                     |               | - Concerns over potential acquisition  
                       |                                                                     |               | - Impacts to access during construction  
                       |                                                                     |               | - Amend mitigation measures to allow for more notice time for relocation/acquisition (90 days is insufficient notice)  
                       |                                                                     |               | - Document typos  |
| 19                 | Hager Pacific Properties                                             | August 17, 2009| - In support of Bridge Concept 4 and Alignment 3B  
                       |                                                                     |               | - Concerns over potential acquisition  
                       |                                                                     |               | - Impacts to access and parking  
                       |                                                                     |               | - Construction time frame  |
### Table 5-3

**Summary of Written Comments Received on Draft EIR/EIS**

<table>
<thead>
<tr>
<th>Comment Letter No.</th>
<th>Name</th>
<th>Date Received</th>
<th>Issues</th>
</tr>
</thead>
</table>
| 20                | Friends of the Los Angeles River          | August 17, 2009 | - Community identity and cohesion  
- In support of bridge replacement that is appropriate, unique, and iconic (pictures provided) – further design analysis required  
- Stakeholder involvement  
- Address LARRMP goals |
| 21                | California Archives                       | August 19, 2009 | - Misleading description of existing bridge design  
- Historic identity  
- In support of bridge restoration |
| 22                | United States Environmental Protection Agency (EPA) | August 24, 2009 | - In support of Alternatives 2 and 3  
- Expand upon cumulative impacts analysis  
- Historic and cultural resources  
- Environmental justice impacts  
- Aquatic resources impacts  
- Air quality/construction mitigation  
- Bike/pedestrian facilities |
| 23                | Department of Interior                    | September 3, 2009 | - Executed MOA should be included in the Final EIR/EIS  
- Mitigation measures should be included in the MOA. |
| 24                | Office of Planning and Research           | September 18, 2009 | - No comments were received from any state agency. |
| 25                | Gabrieleno Band of Mission Indians        | October 30, 2009 | - Native American monitor should be onsite during excavation activity |
| 26                | CRA/LA                                    | July 29, 2010   | - Impacts to potential 500-600 Anderson Street Historic District |

#### 5.7.6 Meetings with Property Owners

The City Real Estate staff made visits to several businesses within the potentially affected area of the proposed project during the project development and public review period of the Draft EIR/EIS. The meetings were to answer questions and provide relevant information pertaining to the right-of-way process. The record of these meetings is presented below:

- ACE Beverage – 1600 E. 6th Street (November 25, 2008)
- Shalom and Sons – 638 S. Anderson Street (June 16-18, 2009, and July 21, 2009)
- Spilo Worldwide – 585 S. Santa Fe Avenue (June 10, 2009, and June 16-18, 2009)
- City of Los Angeles Bureau of Street Services – 1149 South Broadway Avenue (June 16-18, 2009)
- Hager Pacific, Glacier Cold Storage, LTD (Tenant), and Cal Hondo Freight (tenant) – 2233 Jesse Street (June 16-18, 2009)
- Lumary’s Tire Service (Owner) – 600 S. Santa Fe Avenue (June 16-18, 2009)
- Stover Seed Company (Owner) – 1415 E. 6th Street (June 16-18, 2009)
- Colin & Beverly Shorkend (Owner) and Un Deux Trois (Tenant) – 1425 E. 6th Street (June 16-18, 2009)
- Peter Alexandra Furniture – 1427 E. 6th Street (June 16-18, 2009)
- Butterfield Trails (Owner) – 590 S. Santa Fe Avenue (film studio) (June 16-18, 2009)
- Chalmers Malt, LLC (Owner) – 633 S. Mission Road (May 27, 2009, and June 16-18, 2009)
- Senegram Holding Company (Owner) and Leaf Organics (Tenant) – 631 S. Anderson Street (June 16-18, 2009)
- Cal Fiber (Tenant) – 627 S. Anderson Street (June 16-18, 2009)
- J & W Holdings (Owner) and E-Lady Enterprises Inc. (Tenant) – 631 S. Anderson Street (June 16-18, 2009)
- Duesenberg Investment Co. (Owner), Ace Beverage Co. & Mission Beverage – 550 S. Mission Road (June 16-18, 2009)
- Eddie & Shirley Glass (Owner) and Wild Honey (Tenant) – 2325 Jesse Street, Unit B (one of three tenants) (June 16-18, 2009)
- Gustavo and Violeta Ulloa (Owner), Bell Craft Office Furniture, Upholstery Manufacturer – 651-653 S. Clarence Street (June 16-18, 2009)
- Arispace (Owner) – 650 S. Clarence Street, spoke to owner’s agent (vacant and for sale) (June 16-18, 2009)
Chapter 6
List of Preparers
# Chapter 6  List of Preparers

## 6.1 Lead Agency Staff

### City of Los Angeles

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jim Treadaway, P.E.</td>
<td>Program Manager</td>
</tr>
<tr>
<td>John Koo, P.E.</td>
<td>Senior Project Manager</td>
</tr>
<tr>
<td>Jim Wu, P.E.</td>
<td>Project Manager</td>
</tr>
<tr>
<td>Linda Moore</td>
<td>Environmental Supervisor</td>
</tr>
<tr>
<td>Wally Stokes</td>
<td>Environmental Facilitator and Reviewer</td>
</tr>
<tr>
<td>Bearj Sarkis, P.E.</td>
<td>Transportation Engineer, Traffic Analysis Reviewer</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Frank Viramontes</td>
<td>Real Estate Division Officer</td>
</tr>
<tr>
<td>Uriel Jimenez</td>
<td>Real Estate Division Officer</td>
</tr>
<tr>
<td>Gloria Casabona</td>
<td>Real Estate Officer</td>
</tr>
</tbody>
</table>

### California Department of Transportation

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlos Montez, Branch Chief</td>
<td>Environmental process oversight, Document Reviewer</td>
</tr>
<tr>
<td>David Lewis, Environmental Planner</td>
<td>Document Coordinator and Reviewer</td>
</tr>
<tr>
<td>Mine Struhl, Associate Environmental Planner</td>
<td>Document Coordinator and Reviewer</td>
</tr>
<tr>
<td>Gary Iverson, Senior Environmental Planner</td>
<td>Cultural Resources Reviewer</td>
</tr>
<tr>
<td>Claudia Harbert, Associate Architectural Historian</td>
<td>Cultural Resources Reviewer</td>
</tr>
<tr>
<td>Andrew Yoon, Transportation Engineer</td>
<td>Air Quality Study Reviewer</td>
</tr>
<tr>
<td>Jin Lee, Senior Noise Engineer</td>
<td>Noise Study Reviewer</td>
</tr>
<tr>
<td>Gene Kimmel, Landscape Architect</td>
<td>Visual Impact Assessment Reviewer</td>
</tr>
<tr>
<td>Linda Tong, Senior Right-of-Way Agent</td>
<td>Draft Relocation Impact Report Reviewer</td>
</tr>
<tr>
<td>Gustavo Ortega, Senior Engineering Geologist</td>
<td>Draft Foundation Report Reviewer</td>
</tr>
<tr>
<td>Ayubur Rahman, Hazardous Waste Branch Chief</td>
<td>Initial Site Assessment Reviewer</td>
</tr>
<tr>
<td>Paul Caron, Senior Biologist</td>
<td>NES Reviewer</td>
</tr>
</tbody>
</table>

---

*6th Street Viaduct Seismic Improvement Project 6-1 October 2011*
6.2  Report Preparers

Parsons Transportation Group, Inc.
Jeffery Bingham, Senior Project Manager  Environmental Project Director, Section 4(f) Evaluation preparer, technical reviewer
Anne Kochaon, QEP, Project Manager  Environmental Project Manager, Community Impact Assessment, EIR/EIS document coordinator, technical report peer reviewer, and EIR/EIS report preparer
Nasrin Behmanesh, Ph.D., Principal Air Quality Specialist  Air Quality Technical Report preparer
Angela Schnapp, Senior Planner  Initial Site Assessment preparer
Jeff Lormand, Principal Landscape Architect  Visual Impact Assessment preparer
Thanh Luc, Noise Specialist  Noise Study Report preparer
Francesca Smith, Senior Architectural Historian  Historical Property Survey Report preparer
Kip Harper, Senior Cultural Resources Specialist  Historic Property Survey Report preparer
Carrie Chasteen, Senior Architectural Historian  Finding of Effect Report preparer
Pika Rosario, Associate Planner  Data collection and Land Use analysis
John Moeur, Principal Ecologist  Natural Environment Study (NES) Update
Leslie Provenzano, Associate Planner  Data collection, Document publication coordinator
Ron Carbone, Senior Graphic Designer  Visual simulation and graphics preparer
Elizabeth Koos, Technical Editor  Document editor

David Evans and Associates
Steve Thoman, S.E., Project Design Manager  Project Manager, Coauthor of Bridge Type Selection Advance Planning Study and Bridge Type Selection Structure Type Screening Phase
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brett Jones, P.E., Project Manager</td>
<td>Bridge Engineer, Project Study Report and Project Report preparer</td>
<td></td>
</tr>
<tr>
<td>Brian Hansen, P.E., Bridge Engineer</td>
<td>Bridge Engineer, Coauthor of Bridge Type Selection</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kent Cordtz, S.E., Bridge Project Engineer</td>
<td>Bridge Engineer, Coauthor of Bridge Type Selection Advance Planning Study and Bridge Type Selection Structure Type Screening Phase</td>
</tr>
<tr>
<td></td>
<td>IDC Consulting Engineers, Inc.</td>
<td>Bridge Engineer, Coauthor of Bridge Type Selection Structure Type Screening Phase Report</td>
</tr>
<tr>
<td>Shafi Sharifan, Ph.D., P.E., Principal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Don MacDonald Architects</td>
<td>Bridge Architect, Contributor to the Bridge Type Selection, Advance Planning Study Phase Report</td>
</tr>
<tr>
<td>Donald MacDonald, AIA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moffatt &amp; Nichol, Inc.</td>
<td>Roadway Lead and Technical Contributor, Technical Reviewer</td>
</tr>
<tr>
<td>Walt Quesada, P.E., Project Manager</td>
<td></td>
<td>Right-of-Way Task Leader</td>
</tr>
<tr>
<td>Suhash Patel, P.E., Senior Roadway Engineer</td>
<td></td>
<td>Roadway Designer and Utilities Coordinator</td>
</tr>
<tr>
<td>Nicholas Schilling, Roadway Engineer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weixia Jin, Ph.D., P.E., Senior Hydrology Engineer</td>
<td>Hydraulics and Hydrology</td>
<td></td>
</tr>
<tr>
<td>Steve Robinson, Senior Railroad Engineer</td>
<td></td>
<td>Railroad Coordination</td>
</tr>
<tr>
<td>S. R Chan, P.E./S.E., Senior Project Manager</td>
<td>Technical Reviewer</td>
<td></td>
</tr>
<tr>
<td>Goska Nichol, P.E., Senior Roadway Engineer</td>
<td>Technical Reviewer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACT Consulting Engineers</td>
<td>Traffic Analysis Report preparer</td>
</tr>
<tr>
<td>Hon Yow, P.E.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PacRim Engineering</td>
<td>Traffic Analysis Report preparer</td>
</tr>
<tr>
<td>David L. Francke, PE, Senior Project Manager</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 6  List of Preparers

Paragon Partners

Konstantin Akhrem  Real Estate Right-of-Way Investigations
Darryl Root  Real Estate Right-of-Way Investigations
Craig Chong  Real Estate Right-of-Way Investigations
Richard Saretsky  Real Estate Right-of-Way Investigations

BonTerra Consulting, Inc.

Pamela G. Castens, Senior Project Manager  Technical Reviewer of NES, Archaeological Study Report (ASR), and Paleontological Investigation Report (PIR).
Amber S. Oneal, Senior Project Manager  Ecologist, NES preparer
Brian Daniels, Senior Biologist  NES preparer
Andrea Edwards, Ecologist  NES preparer
Patrick Maxon, RPA, Director Cultural Resources  Reviewer of ASR and PIR
Brian K. Glenn, RPA, Cultural Resources Manager  ASR preparer

Paleo Environmental Associates

Bruce Lander, Ph.D., Principal Paleontologist  PIR preparer

CH2M Hill

Yoga Chandran, Ph.D., G.E., Senior Project Manager  Program Manager and Coordinator
Craig Leszkiewicz, P.E.  Project Geotechnical Task Leader, Foundation Report preparer

Partha Bora  Hazardous Material Specialist, Site Investigation Task Leader

De Leon, Inc.

Domingo Leon, P.E., Principal  Utilities Search

Diverse Strategies for Organizing

Tony Torres, Vice President  Public Outreach Manager
Glenda Silva, Outreach Specialist  Public Outreach Coordinator
Chapter 7
Distribution List
Chapter 7  Distribution List

7.1  Draft EIR/EIS

The Draft EIR/EIS was made available for review by the general public, government agencies, and other interested parties. The public notification process announcing availability of the Draft EIR/EIS is summarized below.

7.1.1  Federal Register
Availability of the Draft EIR/EIS was published in the Federal Register on July 10, 2009.

7.1.2  Notice of Completion
The Notice of Completion (NOC) announcing release of the Draft EIR/EIS was filed with the Office of Planning and Research, the County Clerk, and the City Clerk in June 2009.

7.1.3  Notice of Availability
The Notice of Availability of the Draft EIR/EIS containing the project description, the locations where the Draft EIR/EIS can be reviewed, the comment period, and the invitation to the public hearing was directly mailed to affected residents, businesses, and all occupants in the proposed project study area in June 2009. The mailing area covered all businesses and residences situated within a 2,000-ft radius from the 6th Street Viaduct. The public review and comment period for the Draft EIR/EIS was 70 days.

The public notice and invitation to attend public hearings was published in local newspapers, including the Los Angeles Times, Eastside Sun, Los Angeles Downtown News, and La Opinion approximately 2 weeks before the scheduled hearing dates.

7.1.4  Locations Where the Draft EIR/EIS can be Viewed
Copies of the Draft EIR/EIS were available for viewing at the following locations:

- City of Los Angeles Department of Public Works Bureau of Engineering, Bridge Improvement Program, 221 N. Figueroa Street, Suite 350, Los Angeles, CA 90012
- City of Los Angeles Department of Public Works Bureau of Engineering, Environmental Management Group, 1149 South Broadway, Suite 600, Los Angeles, CA 90015
Chapter 7 Distribution List

- Caltrans, District 7 Office, Environmental Group, 100 S. Main Street, Los Angeles, CA 90012
- Benjamin Franklin City Library, 2200 E. 1st Street, Los Angeles, CA 90033
- Little Tokyo Branch City Library, 203 S. Los Angeles Street, Los Angeles, CA 90012
- Council District 14 Information Desk, 200 N. Spring Street, RM 465, Los Angeles, CA 90012, and field office at 1870 E 1st Street, Los Angeles, CA 90033.
- The City of Los Angeles Web site: http://eng.lacity.org/projects/fwp/project.htm
- Caltrans website at http://www.dot.ca.gov/dist07/resources/envdocs/
- Public Website at http://www.la6thstreetviaduct.org

7.1.5 Draft EIR/EIS 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.

7.1.5.1 Elected Officials

Federal
Congressperson Xavier Becerra (District 31)
Congressperson Lucille Roybal-Allard (District 34)
Senator Barbara Boxer
Senator Diane Feinstein

State
State Assembly Member Kevin de León, District 45
State Assembly Member John Pérez, District 46
State Senator Member Gilbert Cedillo, District 22

Local
Los Angeles County Supervisor Gloria Molina, District 1

City of Los Angeles
Councilman Jose Huizar, Council District 14
Councilman Ed Reyes, Council District 1
Mayor Antonio Villaraigosa
7.1.5.2 Government Agencies

**Federal**
- U.S. Fish & Wildlife Service
- U.S. Army Corps of Engineers – Los Angeles District
- U.S. Environmental Protection Agency Region 9
- U.S. Federal Emergency Management Agency
- U.S. Department of Transportation, Federal Highway Administration
- U.S. Department of Energy
- U.S. Department of Housing and Urban Development
- U.S. Department of Interior
- Federal Railroad Administration
- Native American Tribal Councils
- Advisory Council on Historic Preservation

**State**
- Office of Planning and Research, State Clearinghouse
  - California Air Resources Board
  - California Department of Fish and Game
  - California Department of Parks and Recreation
  - California Department of Justice
  - California Highway Patrol
  - California Resources Agency
  - California Public Utilities Commission
  - California Integrated Waste Management Board
  - California Native plant Society
- California Regional Water Quality Control Board
- California Transportation Commission
- California Native American Heritage Commission

**Regional**
- Southern California Association of Governments
- South Coast Air Quality Management District
Chapter 7 Distribution List

Los Angeles County
County Clerk
County of Los Angeles Department of Regional Planning
County of Los Angeles Community Development Commission
County of Los Angeles Metropolitan Transportation Authority
County of Los Angeles Department of Public Works
County of Los Angeles Sheriff Department

7.1.5.3 Local Jurisdictions

City of Los Angeles
Planning Department
Housing Department
Community Development Department
Environmental Affairs Department
Fire Department
Police Department
General Service Department
Department of Transportation
Department of Building Safety
Department of Public Works, Bureau of Engineering, Bridge Improvement Program
Department of Public Works, Bureau of Engineering, Environmental Management Group
Department of Public Works, Bureau of Street Lighting
Department of Public Works, Bureau of Engineering
Department of Public Works, Bureau of Street and Trees
Department of Public Works, Bureau of Street Services
Department of Recreation and Parks
Department of Water and Power
Cultural Affairs Department
Cultural Heritage Commission
City Clerk
City Attorney
Los Angeles River Revitalization Master Plan Committee
Community Redevelopment Agency of the City of Los Angeles
- Adelante Eastside Redevelopment Project
- Central Industrial Redevelopment Project
Other Interested and Potentially Affected Parties

Historical Society of Southern California
Los Angeles City Historical Society
Los Angeles Conservancy
County of Los Angeles Bicycle Coalition
Friends of the Los Angeles River
Union Pacific Railroad
AMTRAK National Railroad Passenger Corporation
Metrolink – Southern California Regional Rail Authority
BNSF Railway Company
Los Angeles Neighborhood Initiative
Boyle Heights Home Owners Association
Boyle Heights Chamber of Commerce
Boyle Heights Department of Neighborhood Empowerment
Boyle Heights Neighborhood Council
Boyle Heights Neighbors Organization
Boyle Heights Historical Society
Little Tokyo Business Association
Los Angeles Times
La Opinion
The Los Angeles Downtown News
Downtown Center Business Improvement District
Downtown Neighborhood Council
Los Angeles Unified School District
Central Library
Little Tokyo Branch City Library
Benjamin Franklin City Library
East Los Angeles County Library
Hnimoto Library
Malabar Library
California Archives (Portia lee)

7.1.5.4 Community Advisory Committee Members

Michele Arce, Boyle Heights Chamber of Commerce
Carol Armstrong, LA River Revitalization Committee
Shelly Backlar, Friends of the LA River
Ken Bernstein, Dept. of City Planning Historical Resources
Elizabeth Blaney, Boyle Heights Neighborhood Council
Jim Bickley, Spilo World Wide
Kevin Break, Break Photography Studio
Shannon Buhmaster, Downtown Los Angeles Neighborhood Council
Mike Buhler, LA Conservancy
Sonia Campos, Office of the Speaker
Joaquin Castellanos, Boyle Heights Resident
Rebecca Delgado, Boyle Heights Historical Society
Tony Dominguez, Arte Calidad & Festival de la Gente
Frank Gallo, Ranch Cold Storage
Smith Geoffrey, LA Film
Tammy Goss, Boyle Heights Neighborhood Council
Rosalie Gurrola, Boyle Heights Neighborhood Council
Arturo Herrera, Boyle Heights Resident Homeowner Association
Leslie Kendall, Petersen Museum
Peter Khan III, Business Owner of Cal Fiber
David Knutson, Stover Seed
Jesse Leon, Council District 14
Joe Linton, Livable Places
Estela Lopez, Central City East Association
George Magallanes, Ed Reye's Office
Teresa Marquez, Boyle Heights Resident, Homeowner Association & Neighborhood Council Quadrant 3
Michelle Mowery, Bicycle Advisory Committee LADOT
Jack Richter, Arts District Police Department Lead Officer
Colin Shorken, Owner of Un Deux Trois
Geoffery Smith, LA Film
Marc Spilo, Spilo World Wide
Vicky Torres, Boyle Heights Historical Society
Arturo Torres, Boyle Heights Historical Society
Marcello Vavala, Los Angeles Conservancy
Edgar Garcia, Dept. of City Planning Historical Resources
Ross Valencia, Boyle Heights Resident Homeowner Association
Marcello Vavala, LA Conservancy
Magnus Walker, Serious Clothing
7.1.5.5 Businesses and Residents
All residents and businesses within a 2,000-ft radius of the 6th Street Viaduct. The following potentially affected properties, shown in Figure 3.4-2, are on the project mailing list:

Stover Seed Company
Alexandra Furniture
Shorkend Colin & Beverly
Lucky Head & Un Deux Trios
1435 E. Sixth LLC
Spilo Worldwide
Butterfield Trails, LP
Long Term, Inc.
Chalmers Santa Fe LLC
Lumary's Tire Service, Inc.
Wilsey Holsum Foods LLC (now Chalmers Malt)
Duesenberg Investment Co
Ace Beverage, Inc.
Senegram Holdings
Variety Specialties Produce
Cal Fiber, Inc.
Fitusi Shalom Trust
Pacific Industrial Partners
Cal Hondo Freight Forwarder
Glacier Cold Storage
Union Pacific Land Resources Co
Shalom and Sons Wholesale Foods
J&W Holdings
Elady Company (formerly Best Buy, Inc.)
Jerry & Orit Kohen
Gustavo & Violeta Ulloa
Bell Craft Furniture, Inc.
Rubel Raul
Peppard Brothers
2974 Properties Inc
Jaimimage, Inc.
Eddie & Glass
Clarence Sunrise Properties
7.2  Final EIR/EIS Distribution List

The Notice of Availability of the Final EIR/EIS will be published in the Federal Register. The current officials, agency representatives, and interested parties on the Draft EIR/EIS distribution list are on the Final EIR/EIS distribution list to receive a Notice of Availability of the Final EIR/EIS and either a hard copy or an electronic copy of the Final EIR/EIS. All potentially affected property owners and those who commented on the Draft EIR/EIS will receive a CD containing an electronic copy of the Final EIR/EIS.

The Notice of Availability of the Final EIR/EIS will be published in the local newspapers (La Opinión, Eastside Sun, and Los Angeles Downtown News). A copy of the Final EIR/EIS will be available at the City of Los Angeles Bureau of Engineering, Bridge Improvement Program (1149 South Broadway, Suite 750, Los Angeles, CA 90015); Caltrans District 7 Building (100 S Main St, Los Angeles CA 90012). Benjamin Franklin City Library (2200 E 1st St., Los Angeles, CA 90033); Little Tokyo Branch City Library (244 S. Alameda St., Los Angeles, CA 90012); and Los Angeles City Council District 14 (1870 E 1st Street, Los Angeles, CA 90033). The report can also be accessed through the Project Website at http://www.la6thstreetviaduct.org; City Website at http://eng.lacity.org/techdocs/emg/Environmental_Review_Documents.htm; and Caltrans website at http://www.dot.ca.gov/dist07/resources/envdocs/.
6th Street Viaduct Seismic Improvement Project

LOS ANGELES COUNTY, CALIFORNIA
DISTRICT 7 – Bridge Nos. 53C-1880 and 53-0595
EA 251200
Federal Project Number 5006 (342)
SCH#2007081005

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

VOLUME II – APPENDICES

Prepared by

State of California Department of Transportation (NEPA Lead Agency)
and
City of Los Angeles (CEQA Lead Agency)

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.

October 2011
Contents

Appendix A  CEQA Checklist
Appendix B1 Resources Evaluated Relative to Section 4(f)
Appendix B2 Section 4(f) Evaluation
Appendix C  Title VI Policy Statement
Appendix D  Summary of Relocation Benefits
Appendix E  Glossary of Technical Terms
Appendix F  Mitigation Monitoring and Reporting Program
Appendix G  List of Acronyms and Abbreviations
Appendix H  References
Appendix I  List of Technical Studies
Appendix J  Section 6002 Coordination Plan
Appendix K  Letter from US Fish and Wildlife Service
Appendix L  Notices of Availability of Draft EIR/EIS
Appendix M  Written Comments and Responses on Draft EIR/EIS
Appendix N  Alternative Development Process
Appendix O  Memorandum of Agreement (pursuant to Section 106 of the National Historic Preservation Act of 1966)
Appendix P  Air Quality Conformity Concurrence by FHWA
Appendix A
CEQA Checklist
Council District: 14  Date: July 23, 2007
Lead City Agency: Department of Public Works, Bureau of Engineering
Project Title: 6TH STREET VIADUCT SEISMIC IMPROVEMENT PROJECT

I. PROJECT DESCRIPTION

A. Location

Project Location
The 6th Street Viaduct (Bridge No. 53C-1880) and Sixth Street Overcrossing (Bridge No. 53-0595) comprise a single structure, which spans a portion of the Hollywood Freeway (US 101), the Los Angeles River, city streets, and numerous railroad tracks. The structure is located in a highly urbanized area just east of downtown and connects the downtown portion of the North Central Community Planning Area with the Boyle Heights Community Planning Area in the City and County of Los Angeles. Figure 1 illustrates the project areas location with respect to the region while Figure 2 is a Vicinity Map.

B. Purpose

Seismic vulnerability studies, completed in 2004 concluded that the viaduct, with its current state of material deterioration and lack of structural detailing exhibits a high vulnerability to failure under a moderate seismic event (an earthquake with a probable return frequency of once every 40 years). The probability that the viaduct would experience significant failure, and possibly collapse as the result of seismic events exceeds 70 percent over 50 years. This vulnerability level is extremely high compared to the normally accepted collapse probability of 5 percent or less over 50 years. The high risk of collapse and continuing concrete deterioration indicates the need for timely corrective action to 1) seismically retrofit vulnerable viaduct and remove all concrete members experiencing ASR or 2) replace the existing viaduct.

The concrete elements of the 6th Street Viaduct are subject to an ongoing chemical reaction, known as Alkali Silica Reaction (ASR), which has led to significant deterioration of the structure and loss of its seismic integrity. This deterioration of the 6th Street Viaduct has been occurring for at least 75 years, despite many efforts to arrest or limit its effect. In the 1940s, two large pylons (decorative towers) at the center river bent were removed because of concerns for public safety due to the poor condition of the concrete. In the late 1980s, the deck of the viaduct was stripped of asphalt, and a waterproof coating applied to the underlying concrete in an attempt to prevent moisture infiltration. In addition, the viaduct has been repeatedly patched using epoxy injection; an activity that has left stains and
discoloration and caused by the application of a cementitous coating to hide the unsightly honeycomb effect of these repairs. Cracking is once again evident throughout the viaduct, with large cracks and spalling clearly evident on the outer columns.

C. Description

The proposed project would improve response of this critical Los Angeles River crossing to an acceptable standard resulting from a moderate seismic event by either retrofitting the existing structure or replacing the 6th Street Viaduct entirely. Several alternatives were considered during the project development phase of the project. Criteria used to select the alternatives for carrying forward for detailed analysis in the environmental document include construction and maintenance costs, life span of the facility, constructability, historic preservation, community disruption, and structural and operational safety. Based on the results of the preliminary screening analysis, a No Build Alternative and two Build Alternatives will be analyzed in the environmental document. These are briefly described below.

Alternative 1 – No Build: This alternative provides for neither retrofit nor replacement of the 6th Street Viaduct. The ASR deterioration of the structure would continue. The City would provide ongoing maintenance on the viaduct to keep it open to traffic as long as possible, given the ongoing ASR deterioration. The 6th Street Viaduct would maintain a roadway width of 46 feet, which accommodates two travel lanes in each direction with no outside shoulders or median. The unsafe railings would not be improved to acceptable standards.

Alternative 2 – Viaduct Retrofit: The viaduct’s columns would be retrofitted with steel casings, and infill walls would be constructed at additional columns and bents. All columns that are currently identified to have “Moderate-Severe” to “Severe” damage ratings would be encased to reduce the possibility of further deterioration. Additionally, the steel casings would be designed to withstand the high level of internal pressure due to ASR-induced lateral dilation of the encased column. Under this retrofit alternative, 76 columns would be encased, of which 26 would utilize 7/8-inch plates and 50 would use 5/8-inch steel plates. The exposed plates, channels, and bars would be concealed by a 6-inch layer of architectural mortar. All exterior columns with “Light” or “Moderate” damage ratings would also be encased to account for future concrete degradation due to ASR. Encasement of all exterior columns would also maintain visual balance and consistency for the retrofitted structure. The interior columns in Bents 1, 4, and 5 would be encased to enhance their shear strength.

Alternative 3 – Viaduct Replacement: The 6th Street Viaduct would be demolished and replaced with a new four-lane structure. Four alignment alternatives have been defined for the purpose of environmental evaluation (Figure 2). Each alignment alternative may be evaluated with multiple bridge types and profiles. Based on public input, the new viaduct may be designed with various use features, but no additional traffic capacity would be provided. The bridge types and profiles for the following alignment options have yet to be determined.

The analysis in this document assumes that, unless otherwise stated, the project would be designed, constructed and operated following all applicable laws, regulations, ordinances and formally adopted City standards (e.g., Los Angeles Municipal Code and Bureau of Engineering Standard Plans). Construction would follow the uniform practices established by the Southern California Chapter of the American Public Works Association (e.g., Standard Specifications for Public Works Construction and the Work Area Traffic Control Handbook) as specifically adapted by the City of Los Angeles (e.g., The City of Los Angeles Department of Public Works Additions and Amendments to the Standard...
Figure 1. Regional Map
II. EXISTING ENVIRONMENT

The proposed project is located within a fully developed, mixed-use urban setting. The active construction zone would extend along 6th Street from west of I-5 on the east side of the Los Angeles River to Mill Street on the west side of the River (see Figure 2). The project is located at the boundary of the City of Los Angeles’ Central City North and Boyle Heights General Plan Areas. 6th Street is one of the primary thoroughfares connecting downtown Los Angeles and Boyle Heights.

The 6th Street Viaduct crosses the Los Angeles River along an east-west alignment. Land uses along the north and south sides of the viaduct are predominantly industrial and commercial. The City maintenance office is located within the area underneath the viaduct on the west side of the river. Many homeless people are typically found sheltering under the viaduct on both sides of the river. A US Army Corps of Engineers tunnel is located under the viaduct on the west side to access the river.

In addition to the existing uses mentioned above, the Metropolitan Transit Authority (MTA) also owns a right-of-way corridor on the east and west banks of the river. On the west bank, the two tracks closest to the river are owned by MTA and used by the Southern California Regional Rail Authority (SCRRRA) to operate Metrolink trains. The five tracks west of the MTA tracks are owned by Burlington Northern Santa Fe (BNSF), and the rest of the tracks are owned by MTA and used for the Metro Red Line. Amtrak and BNSF also operate trains on MTA’s two tracks on the west bank. On the east bank, the two tracks closest to the river are owned by MTA, and the Union Pacific Railroad (UP RR) owns the rest of the tracks. UPPR also operates trains on MTA’s tracks.

The Los Angeles River, which crosses under the viaduct in a north-south direction, is a trapezoidal concrete-lined channel. The Los Angeles River is a flood control channel that receives stormwater
runoff from its 834-square-mile watershed, treated effluent from two wastewater treatment plants, and 
some rising groundwater (in the Glendale Narrows area). The river discharges to an estuary in Queensway Bay 
in the Long Beach Harbor. High voltage transmission lines are located along each bank of the river and cross 
over the viaduct.

III. ENVIRONMENTAL IMPACT EVALUATION

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below ☒ would be potentially affected by this project, involving at 
least one impact that is a "Potentially Significant Impact" as indicated by the checklist, which follows.

☒ Aesthetics ☐ Agriculture Resources ☒ Air Quality
☐ Biological Resources ☒ Cultural Resources ☐ Geology/Soils
☒ Hazards & Hazardous Materials ☐ Hydrology/Water Quality ☒ Land Use/Planning
☐ Mineral Resources ☒ Noise ☐ Population/Housing
☐ Public Services ☐ Recreation ☒ Transportation/Traffic
☒ Utilities/Service Systems ☒ Mandatory Findings of Significance

ENVIRONMENTAL DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a 
NEGATIVE DECLARATION would be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there would 
not be a significant effect in this case because revisions in the project have been made by or agreed to 
by the project proponent. A MITIGATED NEGATIVE DECLARATION would be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an 
ENVIRONMENTAL IMPACT REPORT is required.

☒ I find that the proposed project MAY have a "potentially significant impact" on the environment and that 
an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that although the proposed project could have a significant effect on the environment, because all 
potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE 
DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are 
imposed upon the proposed project, nothing further is required.

Ara Kasparian, Ph.D.  
Manager, Environmental Group  
City of Los Angeles Department of Public Works  
Bureau of Engineering

Date  
7/25/07
ENVIRONMENTAL ANALYSIS AND DISCUSSION OF IMPACTS

I. AESTHETICS

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
</table>

the project:

a. Have a substantial adverse effect on a scenic vista? [ ] [ ] [x] [ ]

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? [ ] [ ] [x] [ ]

c. Substantially degrade the existing visual character or quality of the site and its surroundings? [x] [ ] [ ] [ ]

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? [ ] [ ] [x] [ ]

Discussion:

The 6th Street Viaduct is a historic resource and is recognized as a visual landmark to the communities in the surrounding area as well as the general public within the City of Los Angeles. Implementation of any of the project alternatives would result in some degree of adverse impact to the visual character of the existing viaduct. The Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed project would evaluate the visual and aesthetic impacts to scenic resources and the affected viewshed, and it would identify feasible mitigation measures to reduce any identified significant impact to a less than significant level.

II. AGRICULTURAL RESOURCES

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
</table>

the project:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? [x] [ ] [ ] [ ]

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? [ ] [ ] [x] [ ]

c. Involve other changes in the existing environment which, due to their location or nature, could individually or cumulatively result in loss of Farmland, to non-agricultural use? [ ] [ ] [x] [ ]
Discussion:

The proposed project is situated in a fully urbanized area that is devoid of farmland or agricultural operations.

III. AIR QUALITY

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would the project:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Conflict with or obstruct implementation of the applicable air quality plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emission which exceed quantitative thresholds for ozone precursors)?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>d. Expose sensitive receptors to substantial pollutant concentrations?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e. Create objectionable odors affecting a substantial number of people?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

Discussion:

The proposed project is located in the South Coast Air Basin, which is in non-attainment for ozone and small particulate materials. Construction of the proposed project would marginally increase the emission of these air contaminants as a result of operating construction equipment; clearing of debris and asphalt; onsite excavation and grading; and transportation of demolition debris and excavated material to offsite disposal locations. The EIS/EIR will evaluate potential impacts to local and regional air quality, and identify measures to reduce potentially significant impacts to a less than significant level, as applicable.

IV. BIOLOGICAL RESOURCES

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would the project:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>
**Issues & Supporting Information Sources**

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

c. Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

**Discussion:**

The project site is located within an urbanized industrial area of the City of Los Angeles and does not contain any significant biological resources, including riparian habitats, wetland, or protected trees. The project would not affect any biological resources. No further study is required.

**V. CULTURAL RESOURCES**

Would the project:

a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

d. Disturb any human remains, including those interred outside of formal cemeteries?

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>
Discussion:

The 6th Street Viaduct was built in 1932 and is 75 years old. According to the Caltrans Historic Bridge Inventory, the Viaduct is rated “2 – Eligible for listing by the National Register of Historic Places (NRHP).” Therefore, it is also included in the California Register of Historic Resources (California Register). In addition, several structures more than 50 years of age are located within the proposed project’s area of potential effects. These structures will be evaluated and documented in the EIS/EIR.

A full Section 106 (of the National Historic Preservation Act) review, in consultation with the City of Los Angeles Cultural Heritage Commission, Los Angeles Conservancy, State Historic Preservation Officer (SHPO), Caltrans, and FHWA would be conducted as part of the EIS/EIR for this project. The Section 106 review would identify both archaeological and architectural historic resources subject to impact by the proposed project. The work would be done in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties and the Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, under the stipulations of a Memorandum of Agreement (MOA) to be entered into between FHWA, SHPO, Caltrans, and the City of Los Angeles as a result of Section 106 consultation.

VI. GEOLOGY AND SOILS

Would the project:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

b. Result in substantial soil erosion or the loss of topsoil?

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial risks to life or property?
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Discussion:

The proposed project would be located in Southern California, an area known to be seismically active and prone to earthquakes, which may result in hazardous conditions to people and property within the region. The existing 6th Street Viaduct’s vulnerability to extensive damage as a result of a moderate event is the principal concern for undertaking the proposed project. The proposed project would be designed to meet seismic requirements of the local, state, and federal agencies governing the project.

Short-term erosion impacts could occur during the construction phase of the project. During grading, excavation, and other site preparation activities, unearthed and exposed soil could potentially be eroded. Implementation of standard erosion control would minimize the impacts to a less than significant level.

The EIS/EIR would address potentially significant impacts associated with seismic and short-term erosion impacts. Mitigation measures to reduce the identified significant impacts to a less than significant level would be provided.

VII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b. Create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
Issues & Supporting Information Sources

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>h. Expose people or structures to the risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Discussion:

The project site is characterized by industrial and commercial land uses. A potential to encounter hazardous wastes/materials exists within the proposed project’s footprint. An Initial Site Assessment (ISA) was conducted along the viaduct corridor within the project limits to identify any hazardous waste or material sites or any potentially contaminated areas listed by federal, state, and local agencies (Parsons, 2007). Based on the ASTM E 1527-00 standard search distances, 183 sites were identified in the database. Only one of these sites has been determined to present a Recognized Environmental Condition (REC) having the potential to cause soil and/or groundwater contamination.

The viaduct and appurtenances may include asbestos-containing materials (ACM), and portions of the viaduct structure may have previously been treated with lead-based paint (LBP) coatings that would be disturbed by demolition. Unpaved soils adjacent to roadway surfaces within the project corridor (e.g., US 101) may contain aerially deposited lead (ADL).

A site investigation would be conducted during the engineering design phase of the project to confirm the extent of impact and to identify the appropriate mitigation measures. The result of the site investigation would be presented in the EIS/EIR.

The proposed project is situated within a heavy traffic area near downtown Los Angeles. Construction activities related to the proposed project would require traffic lane closures, which would be likely to interfere with traffic flows. Emergency response and evacuation plans that use affected roadways would be impacted in the short term. Implementation of a Traffic Management Plan (TMP) would be required to minimize the impacts to a less than significant level.

The EIS/EIR would discuss potential impacts associated with hazardous waste and materials, including interference with emergency response plans because of project construction. Mitigation measures to minimize these construction phase impacts to a less than significant level would be identified.
VIII. HYDROLOGY AND WATER QUALITY

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
</table>

Would the project:

a. Violate any water quality standards or waste discharge requirements?  
   [ ] Potentially Significant Impact  
   [ ] Less Than Significant Impact With Mitigation Incorporated  
   [ ] Less Than Significant Impact  
   [X] No Impact

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?  
   [ ] Potentially Significant Impact  
   [ ] Less Than Significant Impact With Mitigation Incorporated  
   [ ] Less Than Significant Impact  
   [X] No Impact

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?  
   [ ] Potentially Significant Impact  
   [ ] Less Than Significant Impact With Mitigation Incorporated  
   [ ] Less Than Significant Impact  
   [X] No Impact

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?  
   [ ] Potentially Significant Impact  
   [ ] Less Than Significant Impact With Mitigation Incorporated  
   [ ] Less Than Significant Impact  
   [X] No Impact

e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems to provide substantial additional sources of polluted runoff?  
   [ ] Potentially Significant Impact  
   [ ] Less Than Significant Impact With Mitigation Incorporated  
   [ ] Less Than Significant Impact  
   [X] No Impact

f. Otherwise substantially degrade water quality?  
   [ ] Potentially Significant Impact  
   [ ] Less Than Significant Impact With Mitigation Incorporated  
   [ ] Less Than Significant Impact  
   [X] No Impact

g. Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?  
   [ ] Potentially Significant Impact  
   [ ] Less Than Significant Impact With Mitigation Incorporated  
   [ ] Less Than Significant Impact  
   [X] No Impact

h. Place within a 100-year floodplain structures that would impede or redirect flood flows?  
   [ ] Potentially Significant Impact  
   [ ] Less Than Significant Impact With Mitigation Incorporated  
   [ ] Less Than Significant Impact  
   [X] No Impact

i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?  
   [ ] Potentially Significant Impact  
   [ ] Less Than Significant Impact With Mitigation Incorporated  
   [ ] Less Than Significant Impact  
   [X] No Impact

j. Inundation by seiche, tsunami, or mudflow?  
   [ ] Potentially Significant Impact  
   [ ] Less Than Significant Impact With Mitigation Incorporated  
   [ ] Less Than Significant Impact  
   [X] No Impact

Discussion:

The 6th Street Viaduct crosses the Los Angeles River through a section that is concrete lined and fully channelized. The proposed project would involve some work in the channel to either retrofit, remove or reconstruct existing piers, depending on the alternative selected. A hydraulic analysis would be conducted to assess the impact to the river flow and floodway elevation within the channel.
The City of Los Angeles in cooperation with the California Department of Fish and Game (CDFG), the Regional Water Quality Control Board Los Angeles Region (RWQCB), United States Army Corps of Engineers Los Angeles District (USACE), and Caltrans District 7, has developed a classification system and menu of Construction Best Management Practices (BMPs) to address the potential for bridge construction projects to harm waterways. Adherence to the approved BMPs would ensure impacts to water resources are minimized to the level of less than significant.

IX. LAND USE AND PLANNING

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would the project:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Physically divide an established community?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Conflict with any applicable habitat conservation plan or natural communities conservation plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
</tbody>
</table>

Discussion:

The project is located at the boundary of the City of Los Angeles Central City North and Boyle Heights General Plan Areas.

Within the Central City North Community Plan Area, the project site is located in the South Industrial Area, one of the major industrial districts within the City of Los Angeles. The South Industrial Area is located between Alameda Street and the Los Angeles River, and between 3rd Street and US 101. Preservation of industrial land use designations is a main objective of the Central City North Community Plan. The project area is also located in the Artists -in-Residence District, which is situated between the Santa Ana Freeway and Santa Monica Freeway and between Alameda Street and the Los Angeles River. Although the largest concentration of artists’ residences is located outside of the project area between 1st Street and Palmetto Street and Alameda Street and the Los Angeles River, they are not restricted to those boundaries and may be encountered in the project area.

The Boyle Heights Community, situated east of the river, was developed as one of the first residential suburbs in Los Angeles when rail and rail-related uses began to expand and dominate the Los Angeles River corridor. Immigrants and residents employed by the railroads and related industrial sectors settled in the Boyle Heights area. Moreover, some of the first public housing projects were constructed in Boyle Heights.

The Community Redevelopment Agency of Los Angeles (CRA) has two redevelopment projects in the project area including the Central Industrial Redevelopment Project and the Adelante Eastside Redevelopment Project. The Central Industrial Redevelopment Project is located in the western portion of the project site. The Adelante Eastside Redevelopment Project is located in the eastern
portion of the project site. The redevelopment projects are to revitalize the area, eliminate blight, and preserve industrial and commercial uses.

The Los Angeles River Revitalization Master Plan (LARRMP) is the conceptual framework to guide the revival of the Los Angeles River corridor. The 32-mile-long and one-mile-wide river plan spans from the area of Topanga Canyon east to River Glen and South to around Washington Boulevard. The plan is currently in the Draft Programmatic EIR/Programmatic EIS stage of the environmental process.

The Los Angeles River Revitalization Master Plan (LARRMP) is the conceptual framework to guide the revival of the Los Angeles River corridor. The 32-mile-long and one-mile-wide river plan spans from the area of Topanga Canyon east to River Glen and South to around Washington Boulevard. The plan is currently in the Draft Programmatic EIR/Programmatic EIS stage of the environmental process.

The project area lies within the “Downtown Industrial opportunity area,” one of the five demonstration areas of the LARRMP. Two alternatives were considered for the development of the opportunity area: the DI-A and DI-B concepts. Both DI-A and DI-B designate 6th Street in the project area as a Primary Arterial Green Street. The alternatives also propose an expanded multi-use and bicycle trail on the western bank of the Los Angeles River, and a promenade along the eastern bank of the river, each having its own underpass beneath the 6th Street Viaduct. In addition, both alternatives provide pedestrian bridge access ramps from the west side of 6th Street north to the proposed expanded trail. Alternative DI-A designates the eastern portion of the project area on 6th Street as a Neighborhood Gateway, while Alternative DI-B establishes the eastern side of the project area as a Regional Gateway.

Since the proposed project may facilitate development of the area surround the existing viaduct, the EIS/EIR would evaluate the compatibility of the proposed project development with various land use plans, policies and zoning within the project area.

X. MINERAL RESOURCES

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentially Significant Impact</td>
</tr>
<tr>
<td>Would the project:</td>
</tr>
<tr>
<td>a. Result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state?</td>
</tr>
<tr>
<td>b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?</td>
</tr>
</tbody>
</table>

Discussion:

The proposed project is located in a highly urbanized area of the City of Los Angeles. No mineral resources that would be of value to the region or residents of the state have been identified in the vicinity of the project site. The State Department of Conservation has not designated the project site as a Significant Mineral Aggregate Resources Area; thus, no impacts resulting from the loss of mineral resources are anticipated.
XI. NOISE

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would the project result in:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b. Exposure of persons to or generation of excessive ground-born vibration or ground-born noise levels?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

Discussion:

Construction of the replacement alternative would require demolition of the existing viaduct and construction of the new structure, which could take up to 4 years. Ambient noise levels may temporarily increase when construction equipment is operating. Ground-born vibration as a result of the new viaduct structure construction could also occur, potentially during the foundation construction phase. In addition, residents, businesses, and the general public along the designated traffic detour and material hauling routes could experience higher noise levels and ground-born vibration during the construction period. The project would fully comply with the City’s noise ordinance or require a permit from the Police Commission. The EIS/EIR would analyze noise impacts as a result of project construction and identify appropriate mitigation measures to minimize the project impacts.

Following construction, the proposed project is not expected to elevate ambient noise levels because the project would not cause and increase in traffic volumes along the viaduct corridor.
XII. POPULATION AND HOUSING

Would the project:

a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Discussion:

The project would not have any growth-inducing effects and would not result in the extension of roads or other infrastructure. The project would require some right-of-way acquisition, the extent of which would depend on the alignment alternative to be selected. The areas to be potentially acquired are mostly industrial and businesses. No residential relocation is anticipated. The EIS/EIR would address the right-of-way acquisition impacts and any necessary relocations within the project limits. Environmental justice impacts would also be addressed in the EIS/EIR. Mitigation measures to minimize the impacts to a less than significant level would be identified.

XIII. PUBLIC SERVICES

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

- Fire protection?
- Police protection?
- Schools?
- Parks?
- Other public facilities?
Discussion:

The proposed project would not require additional police and fire protection or generate a need for new police or fire facilities in the area.

XIV. RECREATION

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

Discussion:

Would the project:

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

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

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

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

e. Result in inadequate emergency access?
Issues & Supporting Information Sources

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>f. Result in inadequate parking capacity?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g. Conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

Discussion:

In the event the replacement alternative is selected, the viaduct would be closed for demolition and construction for a period of up to four years. Traffic normally going across 6th Street and the viaduct would have to be rerouted to designated detour routes during this period. The impact from traffic rerouting, including parking loss, during this long construction duration would have to be addressed and mitigation measures identified.

The proposed project would not increase the traffic lanes on the viaduct or the 6th Street approaches. Once the project is in operation, there would be no change in traffic capacity and level of service within the local or regional networks related to the viaduct construction.

XVI UTILITIES AND SERVICE SYSTEMS

Issues & Supporting Information Sources

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would the project:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>e. Result in a determination by the wastewater treatment provider that serves or may serve the project determined that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>f. Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>g. Comply with federal, state, and local statutes and regulations related to solid waste?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>
Discussion:

The proposed project would not require additional utility or service systems.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

<table>
<thead>
<tr>
<th>Issues &amp; Supporting Information Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects, and the effects of probable future projects.)</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Does the project have environmental effects, which would cause substantial adverse effects on human beings, either directly or indirectly?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Discussion:

The project site is presently developed and devoid of significant fish, wild life, and/or plant populations. Construction activities would not degrade or have adverse impacts on the natural environment. If the replacement alternative is selected the historic viaduct would have to be demolished, or if it is retrofitted the viaduct would be substantially modified. The 6th Street Viaduct has been identified as eligible for listing on the NRHP and is also included in the California Register. In addition, several buildings within the vicinity of the viaduct that may be subject to right-of-way acquisition are more than 50 years old. These buildings are subject to evaluation to determine their historical significance. The EIS/EIR would provide further analysis of impacts on historic resources within the project limits and would identify possible mitigation.

Several known and foreseeable projects are planned within the vicinity of the project area. The EIS/EIR would identify all related projects in the immediate vicinity of the proposed project and analyze them for potential cumulative effects. Mitigation measures to reduce potentially significant adverse cumulative impacts would be identified and presented in the EIS/EIR.

XVIII. REFERENCES


Central City North Community Plan. December. 1998


L.A. CEQA Threshold Guide. 2006
INITIAL STUDY
PUBLIC WORKS – BUREAU OF ENGINEERING


Appendix B1
Resources Evaluated Relative to the Requirements of Section 4(f)
Appendix B1 Resources Evaluated Relative to the Requirements of Section 4(f)

This section of the document discusses parks, recreation areas, wildlife refuges and historic sites located within or adjacent to the project area that do not trigger Section 4(f) protection either because: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not historic sites eligible for the National Register of Historic Places (NRHP), 4) the project does not permanently use the property and does not hinder the preservation of the property, or 5) the proximity impacts do not result in constructive use.

As discussed in detail in Appendix B2, a constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate land from the resource, but the proximity of the project results in impacts (e.g., noise, vibration, visual, and/or access) so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are “substantially impaired.”

4th Street Viaduct

Fourth Street Viaduct (Bridge No. 53C0044) is a concrete arch bridge over the Los Angeles River, located approximately 0.2-mile north of the 6th Street Viaduct (see Figure 1). Designed by Merrill Butler, the 4th Street Viaduct was built in 1930 and is eligible for the NRHP. The viaduct not only provides a major link between the Downtown Los Angeles and the Boyle Heights Community, but also a thoroughfare for the motorists coming into Downtown Los Angeles from other areas. The average daily traffic along the 4th Street Viaduct is approximately 31,000.

Construction of the 6th Street Viaduct Seismic Improvement Project would not require permanent incorporation (direct use) of the 4th Street Viaduct. However, a portion of the daily traffic now using the 6th Street Viaduct would detour to the 4th Street Viaduct during closure of 6th Street Viaduct for demolition and construction. Based on the project traffic analysis report (October 2008),1 approximately 26 percent of AM (350 vehicles) and PM (98 vehicles) peak-hour westbound traffic would divert over the 4th Street Viaduct, and 25 percent of AM (39 vehicles) and 30 percent of PM (157 vehicles) peak-hour eastbound traffic would divert over the 4th Street Viaduct (see EIR/EIS Figures 3.7-5 and 3.7-6, and Traffic Analysis Report Figures 7A and 9A). Peak-hour levels of service (LOS) along 4th Street would be substantially impacted at seven intersections, the closest to the viaduct being at the 4th Street/US 101 southbound on-/off-ramp and the northbound off-ramp intersections (see Tables 3.7-6 and 3.7-7, and Figure 3.7-7); this impact was determined to be unavoidable (see Section 3.7.3.1). The intersections east and west

---

Figure 1 Location of Section 4(f) Properties in Relation to Project Limits
of the viaduct would only be impacted during the AM and PM peak hour, primarily affecting access to Downtown Los Angeles and US 101, and would not substantially diminish the 4th Street Viaduct’s utility. Traffic noise to be generated by the detour traffic would be temporary and would not be substantial (1 to 2 dBA) compared to the ambient noise level (see Section 3.16.3.1). No visual impacts from the proposed project alternatives to the project vicinity area, including 4th Street Viaduct, were identified. Furthermore, no obstruction to the access of the 4th Street Viaduct from the proposed project alternative would occur. Therefore, implementation of the proposed project would not cause constructive use of the 4th Street Viaduct because the proximity impacts would not substantially impair the protected features or attributes of the historic viaduct.

7th Street Bridge

Seventh Street Viaduct, also designed by Merrill Butler, is a reinforced concrete arch bridge of three 80-foot clear spans constructed in 1908-1910. It is located along 7th Street over the Los Angeles River, approximately 0.22 miles south of the 6th Street Viaduct (see Figure 1). Seventh Street is a principal cross-town street in Los Angeles, both to the east and the west of the business center. The average daily traffic along the 7th Street Viaduct is approximately 25,000.

Construction of the 6th Street Viaduct would not require physical alteration (direct use) of the 7th Street Viaduct. However, a portion of the daily traffic now using the 6th Street Viaduct would detour to the 7th Street Viaduct during closure of 6th Street Viaduct for demolition and construction. Based on the project traffic analysis report (October 2008), approximately 68 percent of AM and 70 percent of PM peak-hour westbound traffic would divert to the 7th Street Bridge, and 66 percent of AM and 64 percent of PM peak-hour eastbound traffic would divert (see Figures 3.7-5 and 3.7-6). The resulting peak-hour LOS along 7th Street would be substantially impacted at four intersections, the closest to the bridge being at the 7th Street and Santa Fe Avenue intersection (see Tables 3.7-6 and 3.7-7, and Figure 3.7-7). Mitigation measures were not considered feasible at these intersections; therefore, the impacts were determined to be unavoidable (see Section 3.7.3.1). The intersections east and west of the viaduct would only be impacted during the AM and PM peak hours, primarily affecting access to Downtown Los Angeles and US 101, and would not substantially diminish the 7th Street Viaduct’s utility. Traffic noise to be generated by the detour traffic would be temporary and would not be substantial (3 dBA) compared to the ambient noise level (see Section 3.16.3.1). No visual impacts from the proposed project alternatives to the project vicinity area, including 7th Street Bridge, were identified. Furthermore, no obstruction to the access of the 7th Street Bridge from the proposed project alternative would occur. Therefore, implementation of the proposed project would not cause a constructive use of the 7th Street Viaduct because the proximity impacts would not substantially impair the protected features or attributes of the historic viaduct.
Appendix B1 Resources Evaluated Relative to the Requirements of Section 4(f)

Archaeological Site – Primary No. 19-003683

The records search conducted for the proposed project indicated that approximately 90 percent of the Area of Potential Effects (APE) was previously investigated for archaeological resources, and one historic-era site (19-003683) had been identified within the APE. An archaeological field survey of the proposed project APE was conducted on May 21, 2007. Most of the APE was found to be within existing roadways and/or adjacent to the banks of the Los Angeles River and has been subjected to extensive disturbance. The survey resulted in the re-recording of site 19-003683, though visibility was obscured by the presence of road gravels and cargo containers. Exposed portions of the APE, including portions containing the historic-era archaeological site (19-003683), were traversed on foot. Site 19-003683, consisting of historic period domestic refuse, was found to be located generally south of Jesse Road, east of Mission Road and west of the railroad tracks on the east side of the river.

According to the Archaeological Survey Report prepared for this project:

The site record describes the resource as ‘a diffuse scatter of domestic refuse collected from the north end of the lot. The collection dates from 1880 to 1930+.’ The catalog attached to the site form lists several proveniences that include trenches and demolition areas. No specific associations are noted. Preliminary historic research, by means of the historic Sanborn Fire Insurance maps of the Project APE, indicates the property on which the deposits are located was part of a circa 1906-1951 Los Angeles Furniture Mart. Possibly associated with the deposit is a night and weekend watchman’s house near the center of the Los Angeles Furniture Mart property. No other details of possible associations with the deposit were ascertained.2

Detailed site information concerning artifactual content and location must remain confidential to protect the integrity of this cultural resource.

Per Stipulation VIII.C.3 of the Section 106 Programmatic Agreement (PA) between the ACHP, Federal Highway Administration (FHWA), the State Historic Preservation Officer (SHPO), and Caltrans, “If archaeological properties within an undertaking’s APE are protected from any potential effects by establishment and effective enforcement of an Environmentally Sensitive Area (ESA), the signatories agree that Caltrans may consider such properties to be National Register of Historic Places (NRHP) eligible for the purposes of that undertaking without conducting subsurface testing or surface collection.” Because the archaeology site (Primary No.

---

Appendix B1 Resources Evaluated Relative to the Requirements of Section 4(f)

19-003683) would be protected by an ESA as described in the HPSR prepared for this project, the resource was determined to be NRHP eligible, and is considered a Section 4(f) resource.

Since archaeological site 19-003683 would be protected from potential impacts through the establishment of an ESA, the project doesn’t permanently use the property or hinder its preservation, and proximity impacts do not result in constructive use.

Public Parks and Recreational Areas

Based on information derived from the Community Impact Assessment\(^3\) and the Natural Environment Study\(^4\) prepared for the proposed project, it was determined that there are no public parks, recreation areas, or wildlife and waterfowl refuges of national, state, or local significance within approximately 0.5-mile of the project alternatives.

The 2010 Bicycle Plan

The City of Los Angeles General Plan Transportation Element 2010 Bicycle Plan, approved by the City Council in March 2011, designates 1,633 miles of bikeway facilities and proposes two new bicycle networks (Citywide and Neighborhood). It designates 6\(^{th}\) Street and Whittier Boulevard within the project limits as a bicycle lane. According to the Section 4(f) Policy Paper\(^5\), if a publicly owned bikeway is primarily used for transportation and is an integral part of the local transportation system, the requirements of Section 4(f) do not apply since such a facility is not considered a recreational area. Because the bikeway along 6\(^{th}\) Street/Whittier Boulevard would be a part of the City of Los Angeles transportation system, it would not be subject to Section 4(f) consideration.

Other Section 4(f) Resources

There are no other resources within or adjacent to the 6\(^{th}\) Street Viaduct Seismic Improvement Project area that would trigger Section 4(f) protection.

---


\(^{4}\) Natural Environment Study (Minimal Impacts) for Proposed 6\(^{th}\) Street Viaduct Seismic Improvement Project. June 2008, updated February 2011.

This page intentionally left blank.
Appendix B2
Section 4(f) Evaluation
Appendix B2  Section 4(f) Evaluation

1.  Introduction

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.

Applicable technical reports for this Section 4(f) evaluation are as follows:


The above technical studies are incorporated by reference and are available for review at the City of Los Angeles Bureau of Engineering (LABOE) office and Caltrans District 7 office.

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land; and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If
historic sites are involved, then coordination with the State Historic Preservation Officer (SHPO) is also needed.

In general, a Section 4(f) “use” occurs with a Department of Transportation-approved project or program when any of the following conditions are met:

- **Direct Use.** A direct use of a Section 4(f) resource takes place when property is permanently incorporated into a transportation facility (23 Code of Federal Regulations [CFR] Section 774.17). This may occur as a result of partial or full acquisition of a fee simple interest, permanent easements, or temporary easements that exceed regulatory limits noted below.

- **Temporary Occupancy.** A temporary occupancy of a Section 4(f) resource is considered a “use” when it is adverse in terms of the preservationist purposes of the Section 4(f) statute; however, under Federal Highway Administration (FHWA) regulations (23 CFR Section 774.13(d)), a temporary occupancy of property does not constitute a use of a Section 4(f) resource when the following conditions are satisfied.
  - The occupancy must be of temporary duration (i.e., shorter than the period of construction of the project) and not involve a change in ownership of the property.
  - The scope of the work must be minor, with only minimal changes to the Section 4(f) property.
  - There are no permanent adverse physical impacts or interference with the protected activities, features, or attributes of the property.
  - The property being used must be fully restored to a condition that is at least as good as that which existed prior to the project.
  - There must be documented agreement of the appropriate official having jurisdiction over the resource regarding the above conditions.

- **Constructive Use.** A constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate land from the resource, but the proximity of the project results in impacts (i.e., noise, vibration, visual, access, and/or ecological impacts) so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired (i.e., “constructive use”).

### 2. Description of Proposed Project

#### 2.1 Proposed Project
Caltrans and the City of Los Angeles (City) propose to undertake seismic and design improvements to the 6th Street Viaduct over the Los Angeles River (Bridge No. 53C-1880) and
the 6th Street Overcrossing, which includes the US 101 Hollywood Freeway (Bridge No. 53-0595). The 6th Street Viaduct and Overcrossing comprise a single structure located in a highly urbanized area just east of Downtown Los Angeles in the City and County of Los Angeles, California, as shown in Figure 1. This historic structure, constructed in 1932, spans a portion of the US 101 Hollywood Freeway, the Los Angeles River, city streets, and several railroad tracks. The project limits extend between Mateo Street on the west side of the river to just east of US 101 on the east side (Figure 2).

The proposed project would correct seismic deficiencies of this critical Los Angeles River crossing by either retrofitting the existing structure or replacing the viaduct entirely. The seismic vulnerability is due to outdated structural design and overall cracking and deterioration of the concrete elements of the viaduct over the last 75 years as a result of an internal chemical reaction called Alkali-Silica Reaction (ASR), as described below in Section 2.3, Purpose and Need, and in detail in Chapter 1 of the Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The level of damage in various elements of the 6th Street Viaduct due to ASR is shown in Figure 3.

Under the Replacement Alternative, other design (functional) deficiencies of the existing viaduct would be corrected to meet current codes set forth by the American Association of State Highway and Transportation Officials (AASHTO) and the City of Los Angeles Department of Transportation (LADOT). These functional deficiencies include inadequate roadway width (no outside shoulders and substandard sidewalk width), substandard bridge and approach railing (not meeting crash standards), insufficient stopping sight distance along the main span, and lack of a safety median. Nearby roadway, intersection, and adjacent land improvements would also be undertaken. More-detailed information on the proposed project and alternatives, as well as a complete description of the existing viaduct, can be found in Chapter 2, Proposed Project Alternatives, of the EIR/EIS.

2.2 Project Alternatives

Several project alternatives were developed during the project development phases. Screening exercises were conducted to select the most viable alternatives for evaluation in the environmental document.
Figure 1  Project Location and Vicinity Maps
Figure 2  Project Limits
Figure 3  Level of Damage in Various Elements of the 6th Street Viaduct due to ASR
**Alternative 1 – No Action**
This alternative provides neither retrofit nor replacement of the seismically and functionally deficient 6th Street Viaduct. The ASR-induced deterioration of the structure would continue, and the seismic vulnerabilities would worsen as the concrete strength continued to deteriorate. The City would 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. The 6th Street Viaduct would remain at its existing roadway width of 46 feet (ft), which accommodates two travel lanes in each direction with no outside shoulders or safety median. None of the design deficiencies would be corrected under this alternative.

Under the No Action Alternative, the viaduct may be determined to be unserviceable by the LABOE and Caltrans due to advanced ASR deterioration or a major seismic event in the future, the timing of which neither can be predicted. Under such an event, the City would take the viaduct out of service and seek emergency funding sources to replace it. If this were to occur, it is estimated that the time to secure funding, complete design, acquire right-of-way (ROW), and construct a new viaduct would range between 5 and 7 years from the time it was placed out of service. Since, under those circumstances, the project would be considered an emergency, it would be Exempt by Statute under CEQA (PRC 21080[b]; 14 CCR 15260 et seq.) and a Categorical Exclusion under NEPA (23 U.S.C. 125). No environmental document would be required. It is estimated, based on similar projects, that securing full funding would take up to 1 year, design and right-of-way acquisition would take 1 to 2 years (could be done concurrently with funding), and construction would take approximately 4 years.

**Alternative 2 – Viaduct Retrofit**
The following subsections provide detailed descriptions of the retrofit scheme (Infill Wall and Heavy Steel Casing Method) selected for environmental analysis.

Under this alternative, the viaduct’s columns would be retrofitted by encasing them with 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 a major earthquake (a magnitude 7.3 on the Richter Scale).

**Column Retrofit**
Under this retrofit alternative, 76 columns (out of a total of 114) would be encased, of which 26 would utilize 7/8-inch plates and 50 would utilize 5/8-inch steel plates. A 6-inch layer of architectural mortar would conceal the exposed plates, MC8x18.7channels, and bars (Figure 4).
All exterior columns with “Light” or “Moderate” damage ratings would also be encased to account for future concrete degradation due to ASR expansion. Encasing all exterior columns would also maintain visual balance and consistency for the retrofitted structure. The interior columns in Bents 1, 4, and 5 would be encased to enhance their shear strengths. Bent 12 would be excluded from retrofitting because of the lack of space available for construction of the column encasement due to proximity of railroad tracks.

**Figure 4 Steel Encasement of Columns**

**Infill Walls, New Foundations, Grade Beams, and Closure of Expansion Joints**

Infill shear walls would be constructed between the columns to reduce transverse seismic movements of the structure. Grade beams would be constructed below ground between the existing pile caps to reduce longitudinal seismic movement of the structure. Along the viaduct (non-river piers), new foundations would be constructed with the placement of new piles around the existing column foundations. To improve stability of the footings, uplift tie-downs (soil anchors) might be required at some columns where there are large uplift demands on the foundations that could result in rocking response and excessive displacements of the superstructure. Expansion joints in the superstructure would be reconstructed at Bents 27 and 33, connecting adjacent spans to reduce seismic longitudinal displacement demands for the East Approach Spans. Figure 5 presents a conceptual sketch of the proposed infill walls and column casings.
Retrofitting of bent caps would ensure that the expected seismic damage would take place in a controlled fashion. Retrofitting of bent caps for flexural strength enhancement is proposed at 16 bents (excluding Bents 27 and 33 where expansion joints would be closed). Bent cap retrofit would be achieved by means of concrete bolsters, which would be bonded to the bent caps by dowels that run through pre-drilled cores in the existing bent cap. Continuity of the concrete bolsters along the length of the bent cap would be achieved by post-tensioning of high-strength bars that would run through pre-drilled cores in the superstructure girders (see Figure 6). The post-tensioning bars would be anchored at their ends by exterior steel plates; these exposed plates and the bars would also be concealed by mortar.

**Figure 5 Conceptual Drawing Alternative 2 – Retrofit**

**Bent Caps Retrofit**

Retrofitting of bent caps would ensure that the expected seismic damage would take place in a controlled fashion. Retrofitting of bent caps for flexural strength enhancement is proposed at 16 bents (excluding Bents 27 and 33 where expansion joints would be closed). Bent cap retrofit would be achieved by means of concrete bolsters, which would be bonded to the bent caps by dowels that run through pre-drilled cores in the existing bent cap. Continuity of the concrete bolsters along the length of the bent cap would be achieved by post-tensioning of high-strength bars that would run through pre-drilled cores in the superstructure girders (see Figure 6). The post-tensioning bars would be anchored at their ends by exterior steel plates; these exposed plates and the bars would also be concealed by mortar.
Bent caps at locations of expansion joints would be retrofitted as shown schematically in Figures 7 and 8. The positive flexural moment capacity would be enhanced by adding drop caps at the soffit of the existing bent caps. The new drop caps would be bonded to the existing bent cap by dowels. Steel plates would be placed along the sides of the bent caps and bonded to the concrete by means of high-strength bars inside core holes. The steel plates would enhance flexural capacity and resistance to horizontal shear.

**River Piers Retrofit**

The river piers would be retrofitted by placing infill walls between columns at the West and East River Piers. In addition, new pile foundations would be constructed around the existing foundations at the West and East River Piers to confine the poor lap-splices of the longitudinal column reinforcement and to allow column bases to develop their full plastic moment capacities.
Appendix B2  Section 4(f) Evaluation

Figure 7  Bent Cap Retrofit at Expansion Joints (one simply supported span)

Figure 8  Bent Cap Retrofit at Expansion Joints (two simply supported spans)
New Expansion Joint Seals
Installation of new expansion joint seals is essential for long-term efficiency of the retrofit design because it helps protect the substructure from direct water flow onto concrete membranes. Additional moisture at the concrete surface can accelerate the ASR and subsequent concrete damage. Figures 7 and 8 show the proposed new expansion joint seals.

Design Life
The design life expectancy of Alternative 2 is approximately 30 years.

Alternative 3 – Viaduct Replacement
This alternative would construct a new viaduct along one of the three alignments under study. The main-span bridge type would be selected from one of the five alternatives under consideration. The design life expectancy of Alternative 3 is 75 years.

Viaduct Alignments
Three viaduct replacement alignments; (i.e., 3A, 3B, and 3C); out of ten that were evaluated (refer to Appendix N for information on all alternatives evaluated) were selected for design consideration, as shown in Figure 9. These three alignments were evaluated in the Draft EIR/EIS (June 2009). A description of each alignment is provided below.

Alignment 3A: The replacement structure would be built along a new horizontal alignment. The new structure within City’s ROW would have a cross section that meets secondary highway standards as required by the City of Los Angeles Department of Transportation (LADOT). The new roadway would have a maximum width of 70 ft (curb-to-curb) and would consist of two 11-ft-wide lanes in each direction, a median with a maximum width of 10 ft, and outside shoulders with a maximum width of 8 ft which would incorporate future bicycle lanes. The proposed cross section would also allow for sidewalks with a maximum width of 10 ft. Bridge rails located on the outside edges of the structure would have a width of 2 ft. The typical width to the outside of the bridge rails would therefore be 94-ft maximum for spans that are not supported on cables. The cross section within Caltrans’ ROW (over US 101) would be slightly different. In this section, the viaduct roadway would be 74 ft, curb to curb, consisting of two 12-ft-wide lanes in each direction, a 10-ft-wide median, and 8-ft-wide shoulders. The proposed cross section also allows for 8-ft-wide sidewalks on both sides of the structure.

The new viaduct structure would extend east from Mateo Street to just east of US 101. The new roadway design has a transition on the west side of the river from the existing street width at Mill Street to the ultimate width of the proposed 6th Street Viaduct Replacement Alternative at Mateo Street. Because of the wider viaduct replacement structure, the north side of the viaduct footprint
Figure 9 Alignment Alternatives Selected for Further Study
would extend farther to the north, while the south side of the footprint would remain essentially at the same location except for the segment of the alignment over the Los Angeles River, which would be shifted slightly to the south to improve the horizontal curve radius and provide improved safety with better stopping sight distances.

**Alignment 3B:** The new viaduct would be designed with the same cross section as Alignment 3A. This option proposes a horizontally curved alignment from Santa Fe Avenue to the west of US 101. The curve in the alignment is more gradual than Alignment 3A. This alignment, similar to Alignment 3A, maintains its present location on the south side of the existing bridge from Mateo Street to Santa Fe Avenue, and the alignment shifts to the north from Santa Fe Avenue to the east as it crosses over the river. This alignment would swing to the north approximately 85 ft farther than the existing alignment on the east side of the river, which would eliminate the existing tight radius curve at the east end.

**Alignment 3C:** The new viaduct would be designed with the same cross section as Alignment 3A. To accommodate the wider viaduct, the footprint of the viaduct would be extended on the north and south sides, except for the area between Mateo Street and Mesquit Street, which would be wider to the north only. The segment that extends from the river to the east would be constructed so that the columns and foundations lie within existing ROW and the viaduct roadway deck extends beyond the existing ROW over adjacent private properties.

**Bridge Concepts**

Fifteen (15) bridge concepts (types) were developed during the initial phase of the project in the summer of 2007. Based on the Community Advisory Committee (CAC) and technical staff input, these were screened down to five bridge concepts (i.e., Concepts 1, 2, 3, 4, and 5) for further consideration. In spring 2009, refinement of Bridge Concepts 1 and 4 were added as a result of public and agency input. Bridge Concepts 1A and 4A were developed for consideration during the public review period of the Draft EIR/EIS, and they were introduced at the CAC meeting in April 2009 and during the public hearings for the Draft EIR/EIS held in July 2009. Each of the seven bridge concepts, including design expressions 1A and 4A, could be constructed on any of the viaduct replacement alignments (i.e., 3A, 3B, or 3C). The City will refine the final design of the bridge replacement, as a means to ensure an architecturally distinctive and cost-effective structure.
Bridge Concept 1 – Main Span Replication. The new replica bridge could capture the essence of the old landmark bridge with its decorative offset corner elements, similar steel arches, “deco” detailing and offset of planes at the pier walls, and corners with decorative dentil detailing below the concrete barrier along the entire length of the viaduct. The structure could mimic the original design with complimentary dual arches – the suspender elements spring out from the middle of the river pier to the thru-arch buttressing at the river bank piers. The new main center pylon with its belvederes would maintain the pedestrian viewing area of the original 1932-designed belvederes. Also, the central pier, which historically extended above the bridge deck until being removed in the 1950s, could be reintroduced in the replacement structure of Concept 1 (Figure 10).

![Figure 10 Computer Model of Bridge Concept 1](image)

Bridge Concept 2 – Cast-in-Place (CIP) Box Girder with Steel Tied Arch Pedestrian Ways. The bridge design of Concept 2 could employ a combination of some of the structural elements proposed for Concept 1 (Figure 11). The main span of the bridge could be a concrete box girder with gateway monuments at each end. In addition, the pedestrian could be separated from the bridge deck at the main span, allowing pedestrians to enjoy a different experience while crossing the bridge.
Bridge Concept 3 – Steel Half-Through Arch with CIP Box Girder Approaches. The design of Concept 3 could pick up structural elements found on the original half-through arch of the landmark main span (Figure 12). Reaching over the Los Angeles River, the new half-through arches could intersect the bridge deck and nestle into the embankment piers. The lateral tie beams between the arches above the deck could be similar in cross section to that of the arch and vertical structural members of the original bridge.

Bridge Concept 4 – Extradosed Concrete Box Girder. Bridge Concept 4, a contemporary cable-supported structure, would present a 21st century structural principle that introduces a relatively new technology to the United States. This extradosed concept bridge could invoke a uniquely modern statement over the river. In Bridge Concept 4, the bridge’s main span could be composed of a series of dual pylons on the outside of the
roadway that rise above the bridge deck; depicted here are concepts with one set of dual towers (Figure 13) and three sets of dual towers (Figure 14).

**Figure 13  Computer Model of Bridge Concept 4**

The top of each tower could be illuminated to enhance the nighttime effect of this distinctive structure. The main viewing platforms could sit above the center of the river, and they could be detailed with shapes that are similar in scale to the existing viaduct’s belvederes, yet be in concert with the extradosed bridge pylons and piers.

**Figure 14  Computer Model of Bridge Concept 4A**

**Bridge Concept 5 – Extradosed Concrete Box Girder with Single Pylon.** Concept 5 is another potential design expression of the extradosed bridge principle. This expression features extradosed structures with towers and cables aligned along the center of the main span and viaduct approaches (Figure 15). This particular expression utilizes six bridge towers as symbolically representative of 6th Street. The top of each tower could be illuminated to enhance the nighttime effect.
2.3 Project Purpose and Need

A detailed description of the project purpose and need can be found in Chapter 1, Sections 1.4 and 1.5, of the EIR/EIS. In summary, the purpose of the proposed project is to achieve the following objectives:

- Preserve 6th Street as a viable east-west link between Boyle Heights and Downtown Los Angeles
- Reduce vulnerability of the 6th Street Viaduct in major earthquake events
- Resolve design deficiencies of the 6th Street Viaduct

The 6th Street Viaduct was constructed in 1932 using state-of-the-art concrete technology at that time and onsite mixing plants. Over the last 75 years, concrete elements of the viaduct have cracked and deteriorated as a result of ASR. The ongoing ASR has led to significant deterioration of the structure’s concrete strength and loss of seismic integrity. This deterioration of the 6th Street Viaduct has been occurring for at least 75 years, despite many efforts to arrest or limit its effect. In the late 1980s, the deck of the viaduct was stripped of asphalt, and a waterproof coating was applied to the underlying concrete in an attempt to minimize moisture infiltration; water is a necessary component for ASR. In addition, the viaduct has been repeatedly patched using epoxy injection, which is a process that has left stains and discoloration and necessitated the application of a cementitious coating to hide the unsightly honeycomb effect of these repairs and to further seal the surface from moisture. Cracking is evident throughout the viaduct, with large cracks and spalling evident on its outer columns.
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.

While the deteriorated surface appearance of the viaduct is an issue, its underlying structural integrity is of much greater concern. In 1989, the Whittier Narrows earthquake caused damage to shear keys and caused a column crack at Bent 33. The structure has since been classified by Caltrans as Category I and placed on the mandatory seismic retrofit list.

In the mid 1990s, Caltrans conducted an evaluation of Bridge No. 53-0595, which is the portion of the viaduct owned by Caltrans that crosses US 101. This evaluation determined that seismic retrofit was warranted, and in 1995 Caltrans undertook a retrofit construction project for that portion of the 6th Street Viaduct. The Caltrans seismic retrofit project placed infill walls between existing columns at the bents adjacent to the mainline roadbed, from Bent 37 to the east abutment. While this improvement was consistent with the Category I seismic retrofit program by eliminating potential collapse vulnerabilities, it did not resolve the long-term ASR problem and only improved the state-owned 235-ft-long portion of the 3,500-ft-long viaduct. The City elected to not move forward with a retrofit design similar to the one employed by Caltrans because of concerns that such a strategy did not address the ongoing degradation of the viaduct concrete due to ASR. The ASR deterioration weakens the concrete strength, which results in greater seismic vulnerability over time. ASR damage cannot be reversed after the reaction has taken place within the concrete, and the reaction continues to occur on the viaduct. In late 2000, the City engaged a consultant to conduct a material testing program to determine the strength of the existing concrete and the overall condition of the structure. This extensive material testing and investigation program, which was completed in January 2002, confirmed the presence of severe cracking and low concrete strength throughout the viaduct, and it identified its root cause to be ASR.

The Final Seismic Retrofit Strategy Report, which was completed in 2004, concluded that the viaduct, in its current state of material deterioration and lack of structural strength, has a high vulnerability to failure in a major earthquake. The probability that the viaduct will experience significant structural failure, and possibly collapse, under major seismic events exceeds 70 percent in 50 years. This vulnerability level is extremely high compared to the normally accepted collapse probability of 10 percent or less over 50 years, as defined by AASHTO. The high risk of collapse and continuing concrete

---

deterioration indicates the need for timely corrective action to either seismically retrofit the viaduct or replace the viaduct.

In addition to its vulnerability to collapse under predictable seismic forces, the 6th Street Viaduct also has design and operational safety deficiencies issues based on current standards.

The City-owned viaduct (Bridge No. 53C-1880) has a sufficiency rating of 52.4. Bridges are deemed structurally deficient by the federal government if the deficiency rating is below 80, and therefore eligible for federal funding to correct the deficiency. The purpose of the rating system is to help the federal government determine which bridges need funding for repair or replacement. The major factors contributing to the low sufficiency rating of the structure include:

- Cracking and condition of deck, superstructure, and substructure elements
- Inadequate roadway width
- Out-of-specification bridge and approach railing, and approach rail ends.
- Poor roadway alignment
- Out of specification geometric and seismic detail design

3. Description of Section 4(f) Property

Resources subject to Section 4(f) consideration include publicly owned lands consisting of public park/recreation areas; public wildlife and waterfowl refuges of national, state, or local significance; or historic sites of national, state, or local significance, whether publicly or privately owned.

The only Section 4(f) property that would be subject to “use” under the proposed project is the 6th Street Viaduct. Other Section 4(f) resources within 0.5-mile from the proposed project have been identified and documented in Appendix B1 because they are not subject to either direct or constructive use. The following paragraphs provide a description of the 6th Street Viaduct.

The inventory and evaluation effort for architectural resources for the project was conducted in 2007. The inventory included survey of buildings, structures, and objects near the viaduct and identified historical resources constructed in or before 1964. Thirty-three (33) properties within the APE were analyzed because they contained individual

---

buildings, groups of buildings, structures, groups of structures, and objects that were not eligible for exemption as defined in Attachment 4 of the Section 106 PA.

The one NRHP-eligible historic site in the project APE is the 6th Street Viaduct. Of the Los Angeles River Bridges, 6th Street was the last of the historic Los Angeles River viaducts to be constructed and is transitionally important in that it established the streamline moderne/art deco design principles of the following Works Progress Administration (WPA) bridges. It is classified as steel arch in that its largest spans are twin 150-ft steel through arches. The remainder of the structure, the total span of which is 3,546 ft, comprises T-girder spans. An approximate 3,264-ft-long segment of the viaduct is owned by the City, and the 235-ft-long portion overcrossing US 101 is owned by Caltrans. The structure is located in a highly urbanized area just east of downtown Los Angeles and connects downtown on the west side of the Los Angeles River with the Boyle Heights community on the east side of the river (Figure 16).

Called the “best expression of the modern phase” of the 25-year bridge building program, it is also “the last and grandest of the group.” The 6th Street Viaduct was initiated in 1926 when the City Council voted to acquire property. Upon completion, the 6th Street Viaduct was the longest and largest of the bridges spanning the Los Angeles River. The viaduct officially opened on June 16, 1933, at a cost of $2,383,27113 (Figure 17).

The viaduct’s most distinctive features, other than its length, sheer mass, and exceptional detailing are the twin, parabolic steel through-arches. These arches meet at the center of the Los Angeles River toward the base of the tapered central piers, and diverge east and west, in irregular mirrored shapes. The unusual shape of the arches is emphasized by tapered profiles – each is thicker at the central pier and appears thinnest at the tops of the arches. The arches “pierce” the viaduct deck and terminate gracefully inboard of the decorative balusters, at the crowns of the next piers.

The boundaries of the historic property include the entire bridge: its abutments, bents and piers, all approaches, the deck, all handrails, streetlight standards and luminaires, the tunnel, the steel and concrete arches, the spandrels, and the areas below the decks that contain bridge-related structures. All elements contribute to its historic significance except the replaced streetlight standard luminaires and infilled piers from previous seismic retrofits.14

---

13 Ibid.
14 Ibid.
Figure 16  Aerial Views of 6th Street Viaduct

Figure 17  Excerpted Profile of Sixth Street Viaduct

The 6th Street Viaduct (Bridge No. 53C-1880) was surveyed as part of the Caltrans 1985-1986 Bridge Survey, and Caltrans identified it as a significant structure at that time. The SHPO determined it eligible for separate listing in the NRHP, and the viaduct was assigned a status code of “2S2,” which was defined as “Determined eligible for separate listing through a consensus determination by a federal agency and the State Historic Preservation Officer” at the time of the survey in late 1985. The 6th Street Viaduct was determined eligible on October 19, 1986. Its eligibility is under Criteria A and C, for its association with the Los Angeles River bridge program, and its extraordinary Streamline Moderne design, steel, and reinforced concrete design. Its period of significance is from 1933, when it was completed, until 1957 (50-year cut-off), and its significance is at the state level.

The 6th Street Viaduct was also determined eligible for listing in the NRHP as a contributor to a thematic group of 118 “Historic Highway Arch and Other Bridges in California” in 1987. Additionally, the viaduct was designated as a City of Los Angeles Historic-Cultural Monument (HCM) in January 2008.

Previously, the 6th Street Viaduct had been identified as one of 29 City of Los Angeles “monumental bridges” based on an update to the 1987 statewide historic bridge survey by Caltrans in 2004 (City of Los Angeles Monumental Bridges, 1900-1950, prepared by JRP Historic Consulting). However, the study concluded that the bridges in Los Angeles that are significant for their association with the Bureau of Engineering’s bridge program in the early to mid-twentieth century do not constitute a historic district, as defined by National Park Service guidelines for applying the NRHP criteria. Caltrans submitted these study findings to the SHPO.

4. Impacts on Section 4(f) Property

As discussed in Section 1, the use of Section 4(f) properties typically occurs when there is either permanent incorporation of the Section 4(f) site for a transportation project (i.e., actual use), temporary occupancy of the protected resource that is considered adverse in terms of the preservationist purposes of the Section 4(f) statute, or where the proximity of a project to the Section 4(f) site, without acquisition of land, causes impacts such as noise, visual, or access restriction that could impair the values and integrity of the land (i.e., constructive use).

---

This section discusses whether any permanent or temporary occupation of a property would occur, or whether the proximity of the project would cause any access disruption, noise, vibration, or aesthetic effects that would substantially impair the features or attributes that qualify the resource for protection under Section 4(f).

**Alternative 1 – No Action**

Use of Section 4(f) properties would not be required under this alternative as long as the viaduct remains in service. If the viaduct was determined to be unserviceable due to ASR and/or earthquake damage, the City would seek emergency funding sources to replace it. In this scenario, the City would replace the viaduct under any circumstance. It is likely that the City would use the viaduct replacement design developed thus far for this emergency replacement. Impacts to Section 4(f) properties as a result of the new viaduct construction would be similar to Alternative 3 – Replacement.

**Alternative 2 – Viaduct Retrofit**

There would be a direct use of the 6th Street Viaduct under this alternative. The Retrofit Alternative would alter and/or destroy the historic materials, features, and spatial relationships that characterize the 6th Street Viaduct. Encasing the columns with steel would increase the size of the columns and decrease the distance between the columns in each bent. In addition, construction of new foundations, grade beams, retrofitting of bent caps, and closure of some expansion joints would alter the spatial relationship of the historic features of the viaduct and would alter the historic character of the viaduct through the introduction of new structural and visual elements. Because Alternative 2 would result in the alteration of the viaduct in a manner not consistent with the Secretary’s Standards for the Treatment of Historic Properties, Alternative 2 would have a permanent, adverse impact on this historic property. The bridge is so structurally deficient that it cannot be rehabilitated to meet minimum acceptable seismic requirements without adversely affecting the historic integrity of the bridge.

---

17 The Secretary of Interior’s Standards for the Treatment of Historic Properties Standards are widely used guidance that focus on approaches that retain and conserve historic materials and encourage that deteriorated material be replaced in kind and in character with the original. The Standards speak to retaining to the maximum extent practicable distinctive materials, features, spaces and spatial relationships, and construction techniques of the historic property. Alternative 2 would cover up prominent character-defining features that would be physically and visually incompatible with the original design; construction of shear walls as structural reinforcement would change the overall massing, original spacing, and proportionality of the original arch columns with one another. Distinctive design features, such as the original bridge columns, would be wrapped in steel canisters and plastered over and railing replaced. That these alterations proposed under Alternative 2 would be so out of character and diminish the historic integrity to such a degree that they would collectively constitute an adverse effect on the historic resource was acknowledged by the California SHPO.
Alternative 3 – Viaduct Replacement
There would be a direct use of the 6th Street Viaduct under this alternative. This proposed alternative would demolish the 6th Street Viaduct to build the proposed new structure. The existing viaduct would be replaced with one of five potential bridge concept designs of one of three alternative alignments under consideration. (Refer to EIR/EIS Chapter 2, Section 2.3.3, for further details.) As such, Alternative 3 would have a permanent, adverse impact on this historic property.

5. Avoidance Alternatives
An avoidance alternative is prudent and feasible if it avoids using the Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property. In assessing the importance of protecting the Section 4(f) property, it is appropriate to consider the relative value of the Section 4(f) property to the preservation purpose of the Section 4(f) statute.

Section 23 CFR 774.17 provides a balancing test to determine whether an avoidance alternative is prudent. Listed below are 6 factors to consider when determining whether an avoidance alternative is prudent:

- Compromises the project so that it is unreasonable given the purpose and need;
- Results in unacceptable safety or operational problems;
- After reasonable mitigation, still causes:
  - Severe social, economic, or environmental impacts;
  - Severe disruption to established communities;
  - Severe environmental justice impacts; or
  - Severe impacts to other federally protected resources.
- Results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- Causes other unique problems or unusual factors; or
- Involves multiple factors listed above that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

The following avoidance alternatives were evaluated using the factors in 23 CFR 774.17, and six specific factors were considered to determine whether each alternative is prudent. Please refer to Table 1, Evaluation of Avoidance Alternative Selection Process, for the balancing test outlining the six factors used to determine whether each avoidance alternative is prudent.
Alternative 1 – No Action

The following discussion is based on the assumption that the viaduct would remain in service under the No Action Alternative.

The 6th Street Viaduct crosses the Los Angeles River in an east-west direction. This proposed alternative would provide ongoing maintenance and inspection, but the viaduct would not be seismically retrofitted or repaired. The concrete would continue to deteriorate due to ASR, resulting in the viaduct remaining unsafe for pedestrian and vehicular traffic.

Because Alternative 1 would not result in the physical destruction of the viaduct or materially alter the historic fabric of the viaduct in a manner not consistent with the Secretary of the Interior’s Standards for the Treatment of Historic Buildings, the No Action Alternative would avoid the use of this Section 4(f) historic property; however, the viaduct would continue to be vulnerable to failure in the event of a major earthquake, and the ASR-damaged concrete would not be replaced or reinforced. Furthermore, existing design deficiencies would not be corrected.

In summary, the No Action Alternative is not prudent and feasible because it compromises the project so that it is unreasonable to proceed given the project’s purpose and need. In addition, there is no method to stop the ASR. The concrete in the viaduct would continue to deteriorate due to ASR, resulting in unacceptable seismic safety risk.

Replacement Alternatives

Two Replacement Alignment Alternatives, which would allow the existing 6th Street Viaduct to remain standing, are summarized here. Neither alternative is prudent nor feasible, as described in greater detail below. Please refer to Appendix N for more detailed information on these alternatives.

Replacement Alignment 8

Replacement Alignment 8 proposes to preserve the existing viaduct by constructing a new viaduct to the north of the existing viaduct. Under this alternative, the existing viaduct would be retrofitted for preservation purposes and used only for pedestrian and bicycle traffic.

Although this alternative would allow the existing 6th Street Viaduct to remain standing, potentially for pedestrian and bicycle access only, the existing viaduct would still have to be seismically retrofitted for public safety in the same manner (i.e., “no collapse”
standard), as described under the Retrofit Alternative and the ASR deterioration would continue (see Chapter 2). This alternative would still have an adverse effect on this historic property, as determined by Caltrans and the SHPO for Alternative 2.

In summary, Replacement Alignment 8 would not be prudent and feasible because:

- The viaduct is classified as a Category 1 Structure and seismic retrofit is mandatory, so even if this alignment was selected, the viaduct would have to be retrofitted for public safety. The Replacement Alignment 8 alternative compromises the project to a degree that is unreasonable to proceed given the stated purpose and need.

- The estimated cost to allow the existing 6th Street Viaduct to remain standing and to construct a replacement viaduct to the north of the existing 6th Street Viaduct would be approximately $515 million (Estimated Retrofit $197 million + Average Replacement $318 million = $515 million). The high cost estimate for this alternative would constitute construction costs of an extraordinary magnitude.

- There is no method to stop ASR. The concrete in the viaduct would continue to deteriorate due to ASR, resulting in unacceptable seismic safety problems. In the event of either advanced ASR or earthquake damage, the viaduct likely would have to be taken out of service.

- Although Alignment 8 would meet the project purpose and need, unique problems are associated with this alternative (see Section 2-5, Alternatives Considered but Eliminated from Further Discussion and Table 2 below). Constructing a new viaduct to the north and extending its limits to the east and west would result in substantially greater right-of-way (ROW) impacts than any of the other proposed alternatives. Construction of the viaduct under Replacement Alignment 8 would also create major impacts to the sewer siphon across the Los Angeles River and the sewers located on the east bank of the river. In addition, this alignment would potentially impact one LADWP transmission tower located on the east bank of the river. The alignment would require the construction of a new US 101 northbound on-ramp, and two new bridges would also be required over I-5 for the northbound and southbound sections of the freeway. There would be greater impacts to the railroads by adding a new bridge to the north of the existing viaduct, plus the additional space required for retrofitting the existing columns that are located within the railroad ROW.
Replacement Alignment 9

Replacement Alignment 9 proposes to preserve the existing viaduct by constructing a new viaduct to the south of the existing viaduct. Under this alternative, the existing viaduct would be retrofitted for preservation purposes and used only for pedestrian and bicycle traffic.

Although this alternative would allow the existing 6th Street Viaduct to remain standing, potentially for pedestrian and bicycle access only, the existing viaduct would still have to be seismically retrofitted for public safety in the same manner (i.e., “no collapse” standard), as described under the Retrofit Alternative and the ASR deterioration would continue (see Chapter 2). This alternative would still have an adverse effect on this historic property, as determined by Caltrans and the SHPO for Alternative 2.

In summary, Replacement Alignment 9 would not be prudent and feasible because:

- The viaduct is classified as a Category 1 Structure and seismic retrofit is mandatory, so even if this alignment was selected, the viaduct would have to be retrofitted for public safety. Replacement Alignment 9 alternative compromises the project to a degree that is unreasonable to proceed given the stated purpose and need.

- The estimated cost to allow the existing 6th Street Viaduct to remain standing and to construct a replacement viaduct to the south of the existing 6th Street Viaduct would be approximately $515 million. The high cost estimate for this alternative would constitute construction costs of an extraordinary magnitude.

- There is no method to stop ASR. The concrete in the viaduct would continue to deteriorate due to ASR, resulting in unacceptable seismic safety problems. In the event of either advanced ASR or earthquake damage, the viaduct likely would have to be taken out of service.

- One of the main drawbacks of this approach is that constructing a new viaduct to the south and extending its limits to the east and west would result in substantially greater ROW impacts, similar to Replacement Alignment 8 discussed above (see Section 2-5, Alternatives Considered but Eliminated from Further Discussion and Table 2 below). This alignment would impact three of the LADWP transmission towers (two on the west bank of the river and one on the east bank). In addition, LADWP’s electrical substation between Santa Fe Avenue and Mesquit Street would be impacted. A new northbound on-ramp connection to US 101 would be required. Two new bridges would also be required over I-5 for the northbound and southbound sections of the freeway. There would be greater impacts to the
railroads by adding a new bridge to the south of the existing viaduct, plus the additional space required for retrofitting the existing columns that are located within the railroad ROW.

### 5.3 Transportation System Management and Transportation Demand Management Alternatives

Transportation System Management (TSM) strategies consist of actions that improve the efficiency of existing facilities to increase the number of vehicle trips that a facility can carry without increasing the number of through lanes. TSM also encourages improved mobility on transportation facilities via transit, bicycle, and pedestrian improvements. The following TSM measures have been incorporated into the Replacement Alternative for this project: up to 10-ft-wide sidewalks; up to 19-ft-wide outside lanes, including shoulders for bicycles; a left-turn lane at Mateo Street; and traffic signal improvements at both ends of the project. However, TSM measures alone cannot satisfy the purpose and need of the proposed project.

Transportation Demand Management (TDM) focuses on regional strategies for reducing the number of vehicle trips and vehicle miles traveled, as well as increasing vehicle occupancy. It facilitates higher vehicle occupancy or reduces traffic congestion by expanding travelers’ transportation choices in terms of travel methods, time, route, costs, and the quality and convenience of the travel experience. Since the proposed 6th Street Viaduct project is a seismic safety and bridge functional deficiency improvement, TDM does not meet the purpose and need.

In summary the TSM alternative is not feasible and prudent because it does not satisfy the purpose and need of the project. The ASR deterioration would continue, resulting in unacceptable seismic safety risks. The viaduct would still be vulnerable to failure in the event of a major earthquake, and it would eventually have to be taken out of service due to advanced ASR or earthquake damage, requiring construction of a new viaduct.

Table 1 summarizes the results of avoidance alternative evaluation.
### Table 1
Evaluation of Avoidance Alternatives

<table>
<thead>
<tr>
<th>Balancing Factors</th>
<th>No Action Alternative</th>
<th>Replacement Alignment 8</th>
<th>Replacement Alignment 9</th>
<th>TSM Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compromises the project so that it is unreasonable given the purpose and need</td>
<td>Does not satisfy the Purpose and Need</td>
<td>Meets the Purpose and Need</td>
<td>Meets the Purpose and Need</td>
<td>Does not satisfy the Purpose and Need</td>
</tr>
<tr>
<td>Results in unacceptable safety or operational problems</td>
<td>Does not correct the seismic vulnerability to a “no collapse” standard or resolve design deficiencies</td>
<td>New viaduct meets design standards and existing viaduct seismic vulnerability corrected to a “no collapse” standard</td>
<td>New viaduct meets design standards and existing viaduct seismic vulnerability corrected to a “no collapse” standard</td>
<td>Does not correct the seismic vulnerability to a “no collapse” standard or resolve design deficiencies</td>
</tr>
<tr>
<td>After reasonable mitigation, still causes:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Severe social, economic, or environmental impacts</td>
<td>If viaduct is taken out of service due to advanced ASR or earthquake damage, and requires replacement, would cause business relocations.</td>
<td>Approximately 47 businesses would have to be relocated.</td>
<td>Approximately 49 businesses would have to be relocated.</td>
<td>This factor was considered but was found to be not applicable to this alternative.</td>
</tr>
<tr>
<td>• Severe disruption to established communities</td>
<td>If viaduct is taken out of service due to advanced ASR or earthquake damage, and requires replacement, would cause community disruption.</td>
<td>Right-of-way impacts to Boyle Heights Community and Los Angeles Central City North District</td>
<td>Right-of-way impacts to Boyle Heights Community and Los Angeles Central City North District</td>
<td>This factor was considered but was found to be not applicable to this alternative.</td>
</tr>
<tr>
<td>• Severe environmental justice impacts</td>
<td>If viaduct is taken out of service due to advanced ASR or earthquake damage, and requires replacement, would cause disproportionate impacts on low-income and minority populations from property acquisitions and traffic detours.</td>
<td>Would cause disproportionate higher adverse impacts on low income and minority populations on both sides of the river as more property would be acquired and larger impacted area.</td>
<td>Would cause disproportionate higher adverse impacts on low income and minority populations on both sides of the river as more property would be acquired and larger impacted area.</td>
<td>This factor was considered but was found to be not applicable to this alternative.</td>
</tr>
<tr>
<td>• Severe impacts to other federally protected resources</td>
<td>This factor was considered but was found to be not applicable to this alternative.</td>
<td>This factor was considered but was found to be not applicable to this alternative.</td>
<td>This factor was considered but was found to be not applicable to this alternative.</td>
<td>This factor was considered but was found to be not applicable to this alternative.</td>
</tr>
<tr>
<td>Results in additional construction, maintenance, or operational costs of an extraordinary magnitude</td>
<td>Would result in frequent maintenance upkeep, in addition to the cost of replacement in the event of failure due to ASR or seismic damage.</td>
<td>Maintenance would be required for both old and new viaducts. Also creates major impacts to sewer siphon and LADWP transmission lines</td>
<td>Maintenance would be required for both old and new viaducts. Also creates major impacts to sewer siphon and LADWP transmission lines</td>
<td>Would result in frequent maintenance upkeep</td>
</tr>
</tbody>
</table>
Table 1  
Evaluation of Avoidance Alternatives

<table>
<thead>
<tr>
<th>Balancing Factors</th>
<th>No Action Alternative</th>
<th>Replacement Alignment 8</th>
<th>Replacement Alignment 9</th>
<th>TSM Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causes other unique problems or unusual factors</td>
<td>This factor was considered but was found to be not applicable to this alternative.</td>
<td>Essentially doubles the construction cost</td>
<td>Essentially doubles the construction costs, and disrupts electric transmission lines at a high cost and may interrupt electric power supply</td>
<td>This factor was considered but was found to be not applicable to this alternative.</td>
</tr>
<tr>
<td>Involves multiple factors listed above that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude</td>
<td>Would cumulatively cause impacts of extraordinary magnitude in the areas of cost, public safety, and community disruption in the event of failure due to ASR or seismic damage.</td>
<td>This factor is not applicable as the factors discussed above are not individually minor.</td>
<td>This factor is not applicable as the factors discussed above are not individually minor.</td>
<td>This factor was considered but was found to be not applicable to this alternative.</td>
</tr>
<tr>
<td>Prudent and Feasible Determination</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: Balancing factors are based on 23 CFR Section 774.3(c)(1).

6. Measures to Minimize Harm
Agreement among the SHPO, the City, and Caltrans has been reached through the Section 106 process of the NHPA on measures to resolve the adverse effect, including all possible planning to minimize harm as defined in 23 CFR 774.17. Those measures would be incorporated into the project. A Memorandum of Agreement (MOA) for the preferred alternative (see Section 2.4), which includes stipulations and measures to resolve the adverse effect and received SHPO concurrence on May 10, 2010, is included in Attachment B of this Section 4(f) Evaluation and Appendix O of the Final EIR/EIS.

6.1 Retrofit Alternative
Approximately 95 percent of the original viaduct would be retained because only the railings would be replaced. The remaining original structure would be incorporated into the retrofit design; however, the original structure would be enclosed within a new “skin” and would not be visible. New construction would be designed in a manner consistent with the Secretary of Interior’s Standards for the Treatment of Historic Properties. Potential mitigation measures include the following:

- The City would incorporate all applicable Secretary of Interior’s Standards for the Treatment of Historic Properties (36 CFR Part 68) into the design of retrofitting components.
Appendix B2  Section 4(f) Evaluation

- The City would install two new freestanding informative permanent metal plaques or signage at both ends of the bridge at public locations that provide a brief history of the bridge, its engineering features and characteristics, and the reasons it was retrofitted. Additionally, the City would install two Cultural Heritage plaques, one at each end of the bridge, on the interior bridge rails in accordance with the City of Los Angeles’ Cultural Heritage Monument program.

- The 6th Street Viaduct was previously recorded as part of the Historical American Engineering Record (HAER) program in 1996. Prior to any viaduct construction activities, Caltrans and the City would contact the National Park Service (NPS) Western Region Office in Oakland, California to determine if additional recordation is required for the historic property beyond that provided in “Historic American Engineering Record, 6th Street Bridge, HAER No. CA-176,” dated May 7, 1996. If additional documentation is required, the City/Caltrans shall ensure that the additional documentation is completed and accepted by NPS before the viaduct is altered. The City shall prepare draft and final reports to be reviewed by Caltrans and NPS.

6.2 Replacement Alternative

The Replacement Alternative would not retain any of the original elements of the historic property. Mitigation measures defined in the executed MOA include the following:

- The 6th Street Viaduct was previously recorded as part of the HAER program in 1996. Prior to any viaduct demolition or construction activities, Caltrans and the City would contact the NPS Western Region Office in Oakland, California to determine if additional recordation is required for the historic property beyond that provided in “Historic American Engineering Record, 6th Street Bridge, HAER No. CA-176,” dated May 7, 1996. If additional documentation is required, the City/Caltrans shall ensure that the additional documentation is completed and accepted by NPS before the Viaduct is altered and/or demolished. The City shall prepare draft and final reports to be reviewed by Caltrans and NPS.

- The City would offer copies of the HABS/HAER documentation, consisting of an acid-free xerographic copy of the report, prepared on standard 8 ½ x 11 paper to, at a minimum, the Los Angeles Public Library, Los Angeles Conservancy, Los Angeles City Historical Society, Historical Society of Southern California, City of Los Angeles Office of Historical Resources, California Office of Historic Preservation, and Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento. The City would also place the historical information from the
HABS/HAER report 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 will also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on their website.

- The City would work with the Los Angeles Public Library to place the historical information from the HABS/HAER report on a City Web site with a link to a public library Web site, such as the Los Angeles Public Library Web site, available to the public for a minimum period of 3 years. The information link should also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on their Web site.

- The City would produce a documentary (i.e., 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 would be of broadcast quality, between 30- and 90-minute duration, and would be made available to local broadcast stations, public access channels in the local cable systems, and requesting schools/libraries; one copy would be submitted to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento.

- The City would 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 would be similar in general format to the “Historic Highway Bridges of California” published by Caltrans (1991) and would 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.

- The City would install two new freestanding informative permanent metal plaques or signage at both ends of the bridge at public locations that provide a brief history of the bridge, its engineering features and characteristics, and the reasons it was replaced.

- The City would offer artifacts removed from the viaduct during demolition to local museums or other suitable facilities to be determined by the City. The accepting institutions should arrange their own transportation to deliver the artifacts to designated locations.
7. Coordination

Public involvement, agency coordination, and Native American tribal coordination were carried out during the proposed project development process by means of formal scoping meetings, participating agency coordination meetings, community meetings, potentially affected property owner meetings, political representative meetings, notification letters, and the creation and maintenance of a project Web site.

The scoping process was initiated by widespread notification of government agencies and the public via publication of a Notice of Intent (NOI) and a Notice of Preparation (NOP) announcing initiation of the Environmental Impact Statement (EIS) and Environmental Impact Report (EIR), respectively. The NOI was published in the Federal Register (Volume 72, Number 169) on August 31, 2007, in accordance with the National Environmental Policy Act (NEPA). The NOP was posted on the City of Los Angeles Web site, the project’s public Web site, and with the Los Angeles County Clerk/Recorder throughout the public review period (July 23, 2007, to September 13, 2007), in accordance with the California Environmental Quality Act (CEQA).

Federal agencies having jurisdiction over the affected Section 4(f) resources, including the Department of Interior and the Department of Housing and Urban Development, ACHP, were on the NOI and NOP mailing list. State and local agencies having a stake over the affected Section 4(f) resources, such as State of California Historic Preservation Office, California Department of Fish and Game, Regional Water Quality Control Board, Native American tribal organizations, Los Angeles Conservancy, Los Angeles Cultural Heritage Commission, were coordinated throughout the environmental review process. The Draft EIR/EIS was also submitted to the U.S. Department of Interior (DOI) in June 2009. Several follow-up emails were sent to the DOI staff to confirm they were in receipt of the Draft EIR/EIS and Section 4(f) Evaluation. The DOI provided written comments on the Draft Section 4(f) Evaluation on September 3, 2009, and their letter is included in Appendix M (Letter no. 25).

Table 2 summarizes coordination efforts with federal agencies having jurisdiction over the affected Section 4(f) resources.

---

18 http://eng.lacity.org/techdocs/emg/Environmental_Review_Documents.htm
### Table 2

**Coordination with Government Agencies Having Jurisdiction over Section 4(f)**

<table>
<thead>
<tr>
<th>Government Agency</th>
<th>Description of Coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>California State Historic Preservation Officer</td>
<td>The Historic Property Survey Report (HPSR)/Historic Resources Evaluation Report (HRER)/Archeological Study Report (ASR) prepared for this project was transmitted to the SHPO on August 9, 2009. No response was received as of October 15, 2008. An e-mail was sent from Claudia Harbert, Caltrans District 7, on 11/19/08 to inform the SHPO that Caltrans is hereby informing all concerned that we are proceeding forward per stipulation VIII.C.5.a of the PA with preparation of the Finding Of Effect (FOE) documentation for this project. The FOE documentation was submitted to the SHPO for review on 1/27/09. A letter from SHPO to Caltrans concurring that proposed project will have an adverse effect on the Sixth Street Viaduct was received on March 19, 2009. A Memorandum of Agreement (MOA) containing stipulations to resolve the adverse effect as a result of the replacement alternative implementation was submitted to the SHPO on January 13, 2010. The SHPO signed the MOA on May 10, 2010.</td>
</tr>
<tr>
<td>California Department of Parks and Recreation Office of Historic Preservation</td>
<td></td>
</tr>
<tr>
<td>U.S. Department of Interior</td>
<td>Caltrans contacted the staff of the DOI to confirm receipt of the Draft EIR/EIS. DOI staff responded that the Draft EIR/EIS was being reviewed and written comments were provided on September 3, 2009.</td>
</tr>
</tbody>
</table>

Section 106 consultation with SHPO under the PA was initiated by Caltrans’ professionally qualified staff (PQS), as required by PRC 5024.5, on September 9, 2008. An HPSR, with supporting HRER and ASR, was submitted to the SHPO for review on September 9, 2008. No response was received from the SHPO within 30 days; therefore, Caltrans proceeding per stipulation VIII.C.5.a of the PA as indicated in the November 12, 2008, e-mail from Gary Iverson to the SHPO, The Finding of Effect (FOE) was submitted to SHPO on January 27, 2009. A letter dated March 19, 2009, from SHPO to Caltrans concurred with the finding that the proposed project will have an adverse effect on historic property (i.e., 6th Street Viaduct).

A Memorandum of Agreement (MOA) was executed by Caltrans and the SHPO on May 10, 2010 in compliance with the requirements of Section 106 of the National Historic Preservation Act. The purpose of the MOA is to resolve adverse effects on the historic 6th Street Viaduct as a result of project implementation. The MOA is provided in Attachment B of this Section 4(f) Evaluation and Appendix O of this EIS/EIR.

### 8. Least Harm Analysis and Concluding Statement

23 CFR 774.3 states that if there is no feasible and prudent avoidance alternative, then the Administration may approve only the alternative that:

1. Causes the least overall harm in light of the statute's preservation purpose. The least overall harm is determined by balancing the following factors:
(i) The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property);

(ii) The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;

(iii) The relative significance of each Section 4(f) property;

(iv) The views of the official(s) with jurisdiction over each Section 4(f) property;

(v) The degree to which each alternative meets the purpose and need for the project;

(vi) After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and

(vii) Substantial differences in costs among the alternatives.

2. The alternative selected must include all possible planning, as defined in §774.17, to minimize harm to Section 4(f) property.

Based on the previous discussion, there is no feasible and prudent alternative to the use of the 6th Street Viaduct. As required by 23 CFR 774.3, all proposed build alternatives were analyzed to determine the alternative that causes the least overall harm as described below.

Alternative 2 (Viaduct Retrofit) would alter the historic character of the viaduct through new structural and visual elements while Alternative 3 (Viaduct Replacement) would demolish and replace the entire structure. The SHPO concurred that implementation of either Alternative 2 or Alternative 3 would result in an adverse effect on the 6th Street Viaduct and has entered into the MOA with Caltrans and the City of Los Angeles that contains stipulations to resolve the adverse effect of Alternative 3, the preferred alternative. Under Alternative 2, the 6th Street Viaduct would remain, but the historic character would be adversely affected and the seismic retrofit would only have a 30-year design life. Under Alternative 3, the 6th Street Viaduct would be replaced. The City of Los Angeles Cultural Heritage Commission (CHC) favors partial preservation, but none of the partial preservation alternatives considered would resolve the ASR problem, and the viaduct would eventually have to be replaced.

Implementation of Alternative 2 would not permanently solve the ASR problem. Therefore, it would reduce vulnerability of the 6th Street Viaduct in a major earthquake event to a substantially lesser degree (a minimal standard of “no collapse”) than Alternative 3. The estimated cost for Alternative 2 is $199 million as compared with
$306 million for Alternative 3. However, the design life expectancy for Alternative 2 is approximately 30 years compared with 75 years for Alternative 3. The life-cycle cost of Alternative 2 would be substantially higher because it would include the cost of a new bridge after approximately 30 years due to continuing ASR deterioration. As such, Alternative 2 does not meet the purpose and need of the project as well as Alternative 3 because significant damage could occur in a major earthquake and the viaduct would likely have to be taken out of service.

Implementation of Alternative 2 would result in less impact to traffic and circulation and utilities and service systems because the construction period is shorter. In addition, Alternative 2 would result in less ROW impact compared with Alternative 3. However, implementation of Alternative 2 would not resolve the design deficiencies of the 6th Street Viaduct. The existing viaduct does not have shoulders for bicycles; implementation of Alternative 2 would not accommodate the future designated bike lane along 6th Street Viaduct. The existing viaduct does not have a stormwater runoff collection system; implementation of Alternative 2 would not provide water quality improvements compared to Alternative 3.

The results of the Least Harm Analysis described above are summarized in Table 3. Based on the above considerations, there is no feasible and prudent alternative to the use of land from the 6th Street Viaduct, and the proposed action includes all possible planning to minimize harm to the 6th Street Viaduct resulting from such use and causes the least overall harm in light of the statute’s preservation purpose.
## Table 3
### Least Harm Analysis

<table>
<thead>
<tr>
<th>Factors</th>
<th>Viaduct Retrofit Alternative 2</th>
<th>Viaduct Replacement Alternative 3</th>
<th>Least Damaging Alternative to Section 4(f) Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to mitigate adverse impacts to the Section 4(f) resource</td>
<td>A new MOA with SHPO that includes stipulations to resolve the adverse effect would be implemented.</td>
<td>The existing MOA with SHPO that includes stipulations to resolve the adverse effect would be implemented.</td>
<td>Similar for both Alternatives</td>
</tr>
<tr>
<td>Relative severity of the remaining harm, after mitigation, to the protected activities and attributes or features</td>
<td>Adverse impacts to Historic 6th Street Viaduct cannot be avoided or mitigated to a level of no adverse effect. The 6th Street Viaduct structure would remain, but the historic character would be adversely affected and the seismic retrofit would only have a 30-year design life.</td>
<td>Adverse impacts to Historic 6th Street Viaduct cannot be avoided or mitigated to a level of no adverse effect. The 6th Street Viaduct would be demolished and replaced.</td>
<td>Alternative 2</td>
</tr>
<tr>
<td>Relative significance of the Section 4(f) property</td>
<td>6th Street Viaduct is individually NRHP and CRHR eligible; eligible as one of a thematic group of 118 historic highway arch and other bridges in CA; also City Cultural-Historical Monument #905.</td>
<td>6th Street Viaduct is individually NRHP and CRHR eligible; eligible as one of a thematic group of 118 historic highway arch and other bridges in CA; also City Cultural-Historical Monument #905.</td>
<td>Similar for both Alternatives</td>
</tr>
<tr>
<td>Views of the officials with jurisdiction over the Section 4(f) property</td>
<td>SHPO concurred that the proposed project would have an adverse effect on the Section 4(f) resource</td>
<td>SHPO concurred that the proposed project would have an adverse effect on the Section 4(f) resource.</td>
<td>Similar for both Alternatives</td>
</tr>
<tr>
<td>Degree to which each alternative meets the purpose and need</td>
<td>Alternative 2 does not meet the purpose and need as well as Alternative 3 because it does not resolve the ASR, nor does it correct the design deficiencies of the existing viaduct.</td>
<td>This alternative meets the stated purpose and need of the project.</td>
<td>Alternative 3</td>
</tr>
<tr>
<td>After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)</td>
<td>Impacts to traffic circulation and utilities would be less. Cannot accommodate bike lanes, less pedestrian-friendly, only seismically retrofitted to “no collapse” criteria with 30-year design life.</td>
<td>Greater impact to ROW, traffic circulation, and utilities than Alternative 2. Would accommodate bike lanes and is more pedestrian-friendly. Higher rated visually. Includes on-site runoff treatment. State of the art seismic design with 75 year design life.</td>
<td>Alternative 3</td>
</tr>
<tr>
<td>Substantial differences in costs among alternatives</td>
<td>The estimated cost for this alternative is $199 million. Design life expectancy is approximately 30 years. The life-cycle cost would be substantially higher because it would include the cost of a new bridge after approximately 30 years due to continuing ASR deterioration.</td>
<td>The estimated cost for the preferred alternative is $306 million. Design life expectancy is approximately 75 years.</td>
<td>Alternative 3</td>
</tr>
</tbody>
</table>
Attachment A
Letters and Other Correspondence
07-LA Local Assistance
EA 965100
6th Street Viaduct Seismic Improvement Project

September 9, 2008

Mr. Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296-0001

Subject: Determinations of Eligibility for the 6th Street Viaduct Seismic Improvement Project, Los Angeles County, California, 07-LA-Local Assistance

Dear Mr. Donaldson

The California Department of Transportation (Caltrans) is initiating consultation with the State Historic Preservation Officer (SHPO) regarding the proposed improvements to the 6th Street Viaduct in Los Angeles County. This consultation is being undertaken in accordance with the January 1, 2004 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation (PA). We are consulting with you under Stipulation VIII.C.5 of the PA, which requires that we seek your concurrence with our determinations of eligibility for historic properties.

Caltrans is initiating this consultation as a federal agency, following the provisions of the Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation Concerning the State of California’s Participation in the Surface Transportation Project Delivery Pilot Program, which became effective on July 1, 2007. The MOU was signed pursuant to Section 6005 of the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, which allows the Secretary of Transportation to assign, and the State of California to assume, responsibility for FHWA’s responsibilities under the National Environmental Policy Act as well as consultation and coordination responsibilities under other federal environmental laws. In that this project is covered by the above referenced MOU, FHWA has assigned, and Caltrans has assumed, FHWA responsibility for environmental review, consultation, and coordination on this project. Please direct all future correspondence on this project to Caltrans.
Caltrans, in conjunction with the City of Los Angeles Bureau of Engineering, is proposing to improve the seismic safety of the 6th Street Viaduct in Los Angeles County. The proposed project would either seismically retrofit the existing viaduct, or replace the existing viaduct with a new four-lane structure on one of three alignment alternatives. A full project description can be found on pages 1 to 4 of the enclosed Historic Property Survey Report (HPSR).

Consultation and identification efforts for the proposed undertaking (summarized on pages 1 – 2 in the HPSR) resulted in the identification of thirty-one properties requiring evaluation within the Area of Potential Effect (APE) as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Address/Location</th>
<th>Community</th>
<th>OHP Status Code</th>
<th>Map Ref. #</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNSF/AT &amp; SF Ry Co.</td>
<td>5164-005-800</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>26</td>
</tr>
<tr>
<td>BNSF/AT &amp; SF Ry Co.</td>
<td>5164-004-802</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>28</td>
</tr>
<tr>
<td>BNSF/AT &amp; SF Ry Co.</td>
<td>5164-004-804</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>30</td>
</tr>
<tr>
<td>Union Pacific Railroad</td>
<td>5171-014-808</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>33</td>
</tr>
<tr>
<td>Union Pacific Railroad</td>
<td>5171-014-809</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>34</td>
</tr>
<tr>
<td>KC Products Co.</td>
<td>1600 E. 6th Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>45</td>
</tr>
<tr>
<td>Senegram Holding Co.</td>
<td>601 S. Anderson Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>47</td>
</tr>
<tr>
<td>Ken Redlamps (Senegram</td>
<td>607 S. Anderson Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>48</td>
</tr>
<tr>
<td>Senegram Holding Co.</td>
<td>611 S. Anderson Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>49</td>
</tr>
<tr>
<td>Cal Fiber Co. (Senegram</td>
<td>613 S. Anderson Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>50</td>
</tr>
<tr>
<td>Senegram Holding Co.</td>
<td>621 S. Anderson Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>52</td>
</tr>
<tr>
<td>Senegram Holding Co.</td>
<td>629-631 S. Anderson Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>54</td>
</tr>
<tr>
<td>A.M.F. Supplies, Inc.</td>
<td>600 S. Anderson Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>57</td>
</tr>
<tr>
<td>Sun Max Produce USA</td>
<td>622 S. Anderson Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>60</td>
</tr>
<tr>
<td>624 S. Anderson Street</td>
<td>624 S. Anderson Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>62</td>
</tr>
<tr>
<td>601 S. Clarence Street</td>
<td>601 S. Clarence Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>67</td>
</tr>
<tr>
<td>605 S. Clarence Street</td>
<td>605 S. Clarence Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>68</td>
</tr>
<tr>
<td>BNSF/AT &amp; SF Ry Co.</td>
<td>5171-015-901</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>100</td>
</tr>
<tr>
<td>BNSF/AT &amp; SF Ry Co.</td>
<td>5164-016-909</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>103</td>
</tr>
<tr>
<td>BNSF/AT &amp; SF Ry Co.</td>
<td>5164-016-807</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>104</td>
</tr>
<tr>
<td>BNSF/AT &amp; SF Ry Co.</td>
<td>5164-016-806</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>105</td>
</tr>
<tr>
<td>BNSF/AT &amp; SF Ry Co.</td>
<td>5164-016-906</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>106</td>
</tr>
<tr>
<td>BNSF/AT &amp; SF Ry Co.</td>
<td>5164-016-803</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>107</td>
</tr>
<tr>
<td>Lumary’s Tires/Michelin</td>
<td>600-602 S. Santa Fé Avenue</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>110</td>
</tr>
<tr>
<td>1450 E. 6th Street building</td>
<td>1450 E. 6th Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>115</td>
</tr>
<tr>
<td>605 S. Santa Fé Avenue</td>
<td>605 S. Santa Fé Avenue</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>119</td>
</tr>
<tr>
<td>613 Imperial Street building</td>
<td>613 Imperial Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>128</td>
</tr>
<tr>
<td>Southwestern Bag Co.</td>
<td>601 Mateo Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>129</td>
</tr>
<tr>
<td>Iron Mountain building</td>
<td>1340 E. 6th Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>133</td>
</tr>
<tr>
<td>1340 E. 6th Street building</td>
<td>1340 E. 6th Street/5164-011-002</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>134</td>
</tr>
<tr>
<td>650 S. Clarence Street</td>
<td>650 S. Clarence Street</td>
<td>Los Angeles</td>
<td>6Z</td>
<td>144</td>
</tr>
</tbody>
</table>
One property, the Sixth Street Viaduct (Bridge #s 53-0595S, 53C-1880), Map Ref. # 145, was previously determined eligible for the National Register of Historic Places in 1986, 1987, and 2004.

One historic-era archaeological site (Primary No. 19-003683), consisting of domestic refuse, has not been previously evaluated for National Register of Historic Places (NRHP) eligibility. All project effects to the site can be avoided by the establishment of an Environmentally Sensitive Area (ESA).

Pursuant to Stipulation VIII.C.3 of the PA, Caltrans is considering Primary No. 19-003683 to be eligible for the NRHP under Criterion D for the purposes of this undertaking without conducting subsurface testing or surface collection and will establish and enforce ESAs to ensure that there will not be an adverse effect to the property as a result of the proposed undertaking pursuant to Stipulation X.B.2.a(ii). Native American consultation confirmed that the sites only have values that may qualify them as NRHP eligible under Criterion D.

Pursuant to Stipulation VIII.C.5 of the PA, Caltrans is requesting your concurrence with the following eligibility determinations:

- None of the properties evaluated as a result of this project are eligible for the National Register of Historic Places.

We look forward to receiving your response within 30 days of receipt of this submittal in accordance with Stipulation VIII of the PA. Pursuant to Stipulation X.A of the PA, Caltrans will apply the Criteria of Adverse Effect set forth in 36 CFR 800.5 (a)(1) and submit that documentation to your office at a later time.

If you need any additional information, please do not hesitate to contact Caltrans District 7 Architectural Historian Claudia A. Harbert (phone: 213.897.0415; e-mail: claudia_harbert@dot.ca.gov). Thank you for your assistance with this undertaking.

Sincerely,

Claudia Harbert

GARY IVESON, Chief
Central Area Project/Cultural Resources Services
Caltrans District 7
Division of Environmental Planning

Attachment: 6th Street Viaduct Seismic Improvement Project HPSR with HRER and ASR

Cc: Wally Stokes, City of Los Angeles Bureau of Engineering; Greg King – CCSO HQ; Jill Hupp – CCSO HQ.
The following project was sent by Caltrans District 7 Division of Environmental Planning to SHPO:

Historic Property Survey Report for the City of Los Angeles 6th Street Bridge Project, City and County of Los Angeles, California

SHPO received this documentation on September 15, 2008 (Identification #FHWA080915).

The 30 day review period ended on October 15, 2008.

Since 30 days for comment has now passed, Caltrans is hereby informing all concerned that we are proceeding forward per stipulation VIII.C.5.a of the PA with the preparation of the Finding Of Effect documentation for this project.

Gary Iverson

"Man has no nobler function than to defend the truth"
- Ruth McKenney
January 27, 2009

Mr. Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
P. O. Box 942896
Sacramento, CA 94296-0001

Dear Mr. Donaldson:

Subject: Finding of Adverse Effect for the Sixth Street Viaduct Seismic Improvement Project in the City of Los Angeles, Los Angeles County, California - FHWA080915

The California Department of Transportation (Caltrans) is continuing consultation with the State Historic Preservation Officer (SHPO) regarding our finding of adverse effect for the above referenced project. This consultation is undertaken in accordance with the January 2004 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation (PA). We are consulting with you under Stipulation X.C.1.a of the PA, which requires consultation with the SHPO regarding a finding of adverse effect.

Caltrans is transmitting this as a federal agency, following the provisions of the Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation Concerning the State of California’s Participation in the Surface Transportation Project Delivery Pilot Program, which became effective on July 1, 2007. The MOU was signed pursuant to Section 6005 of the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) which allows the Secretary of Transportation to assign, and the State of California to assume, responsibility for FHWA's responsibilities under NEPA as well as consultation and coordination responsibilities under other Federal environmental laws. In that this project is covered by the above referenced MOU, FHWA has assigned, and Caltrans has assumed, FHWA responsibility for environmental review, consultation, and coordination on this project. Please direct all future correspondence on this project to Caltrans.

In conjunction with Caltrans, the City of Los Angeles proposes to make improvements to the Sixth Street Viaduct over the Los Angeles River (Bridge 53C-1880) and the Sixth Street Overcrossing (Bridge 53-0595), an element of the Hollywood Freeway (US 101), in order to correct seismic deficiencies by either retrofitting the existing Sixth Street Viaduct or replacing it with a new structure. A discussion of the proposed alternatives can be found on pages 7 through 14 of the enclosed Finding of Effect (FOE) report. A discussion of concepts proposed for the replacement structure can be found on pages 14 through 17.

"Caltrans improves mobility across California"
Caltrans initiated consultation with the SHPO for this project with the submittal of a Historic Property Survey Report on September 15, 2008; no comments from the SHPO were received. The Area of Potential Effects for the proposed project contains two historic properties: The Sixth Street Viaduct and prehistoric archaeological site Primary No. 19-003683. Caltrans is assuming archaeological site Primary No. 19-003683 to be eligible for the National Register of Historic Places (NRHP) for the purposes of the proposed undertaking contingent on the establishment of an environmentally sensitive area that will protect the site from all project effects.

The Sixth Street Viaduct, completed in 1933, was determined eligible for the NRHP in 1985 under Criterion A and C as one of 12 significant viaducts that cross the Los Angeles River. In addition, the Sixth Street Viaduct was determined to be individually NRHP-eligible in 1986, and a City of Los Angeles Historic-Cultural Monument in January 2008.

In applying the Criteria of Adverse Effect pursuant to Stipulation X of the PA, Caltrans finds that the proposed undertaking would have an adverse effect on the Sixth Street Viaduct under all of the alternatives under consideration.

A copy of the FOE report supporting Caltrans’ finding is enclosed for your review and comment. We are consulting with you pursuant to stipulation X.C.1 of the PA and request your concurrence with Caltrans’ finding that the undertaking would have an adverse effect on historic properties. We look forward to receiving your response within 30 days of receipt of this submittal.

Thank you for your assistance with this undertaking. If you have any questions, please contact Jill Hupp at (916) 654-3567 or jill_hupp@dot.ca.gov.

Sincerely,

GREGORY P. KING
Chief
Cultural and Community Studies Office
Division of Environmental Analysis

Enclosure

c: G1verson – D7; CHarbert – D7; JHupp – CCSO

JH/jh

“Caltrans improves mobility across California”
March 16, 2009

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

Re: Finding of Effect for the Proposed Sixth Street Viaduct Seismic Improvement Project in the City of Los Angeles, CA

Dear Mr. King:

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

The Federal Highway Administration (FHWA) is requesting my concurrence that the proposed project will have an adverse effect on the Sixth Street Viaduct, a property previously determined eligible for the National Register of Historic Places. Based on my review of the submitted documentation I concur.

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

Sincerely,

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
January 12, 2010

Mr. Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
Office of Historic Preservation
P. O. Box 942896
Sacramento, CA 94296-0001

Dear Mr. Donaldson:

Subject: Draft Memorandum of Agreement for the Sixth Street Bridge Replacement Project in Los Angeles County, California - OHP Ref.FHWA080915X

The California Department of Transportation (Caltrans) is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the above referenced project. This consultation is undertaken in accordance with the January 2004 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation (PA). In accordance with Stipulation XI of the PA, Caltrans is pleased to submit the enclosed draft Memorandum of Agreement (MOA) for your review.

Caltrans is transmitting this as a federal agency, following the provisions of the Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation Concerning the State of California’s Participation in the Surface Transportation Project Delivery Pilot Program, which became effective on July 1, 2007. The MOU was signed pursuant to Section 6005 of the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) which allows the Secretary of Transportation to assign, and the State of California to assume, responsibility for FHWA's responsibilities under NEPA as well as consultation and coordination responsibilities under other federal environmental laws. In that this project is covered by the above referenced MOU, FHWA has assigned, and Caltrans has assumed, FHWA responsibility for environmental review, consultation, and coordination on this project. Please direct all future correspondence on this project to Caltrans.

In applying the Criteria of Adverse Effect pursuant to Stipulation X of the PA, Caltrans found that the proposed undertaking would have an adverse effect on Sixth Street Viaduct over the Los Angeles River (Bridge 53C-1880). Prehistoric archaeological site Primary No. 19-003683, which Caltrans is treating as a historic property for purposes of this undertaking, will be protected from all project effects by establishing it as an Environmentally Sensitive Area. Caltrans received your concurrence with our Adverse Effect finding on March 16, 2009.

"Caltrans improves mobility across California"
M. Wayne Donaldson, FAIA
January 12, 2010

Caltrans now proposes to resolve the adverse effect by entering into a Memorandum of Agreement (MOA), a draft of which is now enclosed for your review. Mitigation measures proposed in the draft MOA include producing a documentary that addresses the history of the Los Angeles River Monument bridges, and publishing a booklet on the Historic Los Angeles River Bridges that addresses the history of the monumental concrete bridges of Los Angeles and the Sixth Street Viaduct's place in that history.

We look forward to receiving your comments on the draft MOA. Thank you for your continued assistance with this undertaking. If you have any questions or, please contact Jill Hupp at (916) 654-3567.

Sincerely,

ANMARIE MEDIN
Chief
Cultural Studies Office
Division of Environmental Analysis

Enclosure

be:  Giverson – D7; CHarbert – D7; Jill Hupp – CSO

JH/jc

“Caltrans improves mobility across California”
Attachment B
Memorandum of Agreement
MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE 6TH STREET VIADUCT SEISMIC IMPROVEMENT
PROJECT
LOS ANGELES, LOS ANGELES COUNTY, CALIFORNIA

WHEREAS, the Federal Highways Administration (FHWA) has assigned and the
California Department of Transportation (Caltrans) has assumed FHWA responsibility
for environmental review, consultation, and coordination under the provisions of the
Memorandum of Understanding (MOU) between the Federal Highway Administration
and the California Department of Transportation Concerning the State of California’s
Participation in the Surface Transportation Project Delivery Pilot Program, which
became effective on July 1, 2007, and applies to this project; and

WHEREAS, Caltrans has determined that the proposed replacement of the 6th Street
Viaduct (Bridge No. 53C-1880 and 53-0595) crossing the Los Angeles River, will have
an adverse effect on the 6th Street Viaduct, a property determined to be eligible for the
National Register of Historic Places (NRHP); and

WHEREAS, Caltrans has consulted with the California State Historic Preservation Officer
(SHPO) pursuant to Stipulations X.C., and X.I. of the January 2004, Programmatic
Agreement among the Federal Highway Administration, the Advisory Council on
Historic Preservation, the California State Historic Preservation Officer, and the
California Department of Transportation Regarding Compliance with Section 106 of the
National Historic Preservation Act, as it pertains to the Administration of the Federal-
Aid Highway Program in California (PA), and where the PA so directs, in accordance
with 36 CFR Part 800, the regulations implementing Section 106 of the National Historic
Preservation Act (NHPA) (16 USC Section 470f), as amended, regarding the
Undertaking’s effects on historic properties and has notified the Advisory Council on
Historic Preservation (ACHP) of the adverse effect finding pursuant to pursuant to 36 CFR
§ 800.6(a)(1); and

WHEREAS, Caltrans has thoroughly considered alternatives to the Undertaking, has
determined that the statutory and regulatory constraints on the design of the Undertaking
preclude the possibility of avoiding adverse effects to the historic property during the
Undertaking’s implementation, and has further determined that it will resolve adverse
effects of the Undertaking on the subject historic property through the execution and
implementation of this Memorandum of Agreement (MOA); and

WHEREAS, Caltrans District 7 (District 7) and the City of Los Angeles (City), have
participated in the consultation process and have been invited to concur in this MOA; and

WHEREAS, Caltrans shall ensure that the following stipulations are implemented; and
NOW, THEREFORE, Caltrans and the SHPO agree that, upon Caltrans’ decision to proceed with the Undertaking, Caltrans shall ensure that the Undertaking is implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on the historic property, and further agrees that these stipulations shall govern the Undertaking and all of its parts until this MOA expires or is terminated.

STIPULATIONS

Caltrans shall ensure the following stipulations are implemented:

I. AREA OF POTENTIAL EFFECTS

A. The Area of Potential Effects (APE) for the Undertaking was established to include all areas within the vicinity of the Sixth Street Viaduct that may contain historic properties that would be directly or indirectly affected by the Undertaking. The APE included the maximum existing and proposed right-of-way, project construction easements, staging areas, and temporary or permanent changes in access. The APE is depicted as Exhibit 3 of Attachment A of this MOA.

B. If modification of the Undertaking, subsequent to the execution of this MOA, necessitates the revision of the APE, Caltrans will consult with the City and the SHPO to facilitate mutual agreement on the subject revisions. If Caltrans, the City, and the SHPO cannot reach such agreement, then the parties to this MOA shall resolve the dispute in accordance with stipulation III.D below. If Caltrans and the SHPO reach mutual agreement on the proposed revisions, the City and Caltrans will submit a final map of the revisions, consistent with attachment 3 of the PA, no later than 30 days following such agreement.

II. TREATMENT OF HISTORIC PROPERTIES

A. Prior to the start of any work that could adversely affect any characteristics that qualify the 6th Street Viaduct (Bridge No. 53C-1880 and 53-0595) as a historic property, the City shall contact the National Park Service Western Region Office (NPS) in Oakland, California, to determine if additional recordation is required for the historic property beyond that provided in “Historic American Engineering Record, 6th Street Bridge, HAER No. CA-176,” dated May 7, 1996. The City shall provide NPS 30 days to respond to their additional recordation determination request. If additional documentation is required, Caltrans shall ensure that the additional documentation is completed and accepted by NPS before the Viaduct is altered and/or demolished. The City shall prepare draft and final reports to be reviewed by Caltrans and NPS.

B. Upon completion, copies of the documentation prescribed in subsection A of this stipulation, consisting of an acid-free xerographic copy of the report, prepared on standard 8½ X 11 paper, shall be retained by District 7, deposited in the Caltrans Transportation History Library in Sacramento, and offered by the City to, at a
minimum, the Los Angeles Public Library, Los Angeles Conservancy, Los Angeles City Historical Society, Historical Society of Southern California, City of Los Angeles Office of Historical Resources, and the California Office of Historic Preservation.

C. The City shall work with the Los Angeles Public Library to place the historical information from the HABS/HAER report 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 will also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on their website.

D. The City shall 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.

E. The City shall 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. City shall post an electronic version of the booklet 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. City shall maintain the camera-ready master booklet and produce additional copies if there is demand.

F. The City shall install two new freestanding informative permanent metal plaques or signage at both ends of the bridge at public locations that provide a brief history of the bridge, its engineering features and characteristics, and the reasons it was replaced.

G. The City shall offer artifacts removed from the Viaduct during demolition to local museums, or other suitable facilities to be determined by the City. The accepting institutions shall arrange their own transportation to deliver the artifacts to designated locations.
III. PROJECT DOCUMENTS CRITERIA AND REVIEW

A. The City shall submit to the SHPO for review and comment Design Development Drawings, and 30%, 60%, and 90% Construction Documents for work on the 6th Street Viaduct.

B. SHPO will review the project documents included in each consultation package submitted by the City to determine whether the Project Documents conform to the criteria cited in paragraph A of this stipulation. SHPO will provide comments on each submittal to the City within 30 calendar days of receipt. If the SHPO does not comment within the time provided, the City may assume that the SHPO concurs that the package conforms with the criteria cited.

C. The City will incorporate SHPO comments into the Project Documents to the fullest extent. If the City revises the Project Documents in response to the SHPO comments, then no further review is required for that submittal. The City will promptly notify SHPO in writing that it has revised the Project Documents in accordance with SHPO comments.

D. Should the City object to incorporating any SHPO comments into the Project Documents, the City will provide SHPO with written explanation of its objection. Promptly after receiving a written objection from the City, the City and SHPO shall consult to resolve the objection. If the objection is not resolve, provision of stipulation IV.C. shall be implemented.

IV. ADMINISTRATIVE PROVISIONS

A. Definitions.

The definitions provided at 36 CFR § 800.16 are applicable throughout this MOA.

B. Professional Qualifications and Standards

Caltrans will ensure that only individuals meeting the Secretary of the Interior’s Professional Qualification Standards (48 FR 44738-39) in the relevant field of study carry out or review appropriateness and quality of the actions and products required by Stipulations II. A-F in this MOA.

C. Discoveries and Unanticipated Effects

If Caltrans determines after construction of the Undertaking has commenced, that the Undertaking will affect a previously unidentified property that may be eligible for listing in the National Register, or affect a known historic property in an unanticipated manner, Caltrans will address the discovery or unanticipated effect in accordance with 36 CFR § 800.13(b)(3). Caltrans at its discretion may hereunder
assume any discovered property to be eligible for inclusion in the National Register in accordance with 36 CFR § 800.13 (c).

D. Resolving Objections

1. Should any party to this MOA object at any time in writing to the manner in which the terms of this MOA are implemented, to any action carried out or proposed with respect to implementation of the MOA, or to any document prepared in accordance with and subject to the terms of the MOA, Caltrans shall immediately notify the other parties of the objection, request their comments on the objection within 15 days following receipt of Caltrans’ notification, and proceed to consult with the objecting party for no more than 30 days to resolve the objection. Caltrans will honor the request of the other parties to participate in the consultation and will take any comments provided by those parties into account.

2. If the objection is resolved during the 30-day consultation period, Caltrans may proceed with the disputed action in accordance with the terms of such resolution.

3. If at the end of the 30 day consultation period, Caltrans determines that the objection cannot be resolved through such consultation, then Caltrans shall forward all documentation relevant to the objection to the ACHP, including Caltrans’ proposed response to the objection, with the expectation that the ACHP will, within thirty (30) days after receipt of such documentation:
   a. Advise Caltrans that the ACHP concurs in Caltrans’ proposed response to the objection, whereupon Caltrans will respond to the objection accordingly. The objection shall thereby be resolved; or
   b. Provide Caltrans with recommendations, which Caltrans will take into account in reaching a final decision regarding its response to the objection. The objection shall thereby be resolved; or
   c. Notify Caltrans that the objection will be referred for comment pursuant to 36 CFR § 800.7(c), and proceed to refer the objection and comment. Caltrans shall take the resulting comments into account in accordance with 36 CFR § 800.7(c)(4) and Section 110(1) of the NHPA. The objection shall thereby be resolved.

4. Should the ACHP not exercise one of the above options within 30 days after receipt of all pertinent documentation, Caltrans may assume the ACHP’s concurrence in its proposed response to the objection and proceed to implement that response. The objection shall thereby be resolved.

5. Caltrans shall take into account any of the ACHP’s recommendations or comments provided in accordance with this stipulation with reference only to the subject of the objection. Caltrans’ responsibility to carry out all other
actions under this MOA that are not the subject of the objection shall remain unchanged.

6. At any time during implementation of the measures stipulated in this MOA, should a member of the public raise an objection in writing pertaining to such implementation to any signatory party to this MOA, that signatory party shall immediately notify Caltrans. Caltrans shall immediately notify the other signatory parties in writing of the objection. Any signatory party may choose to comment in writing on the objection to Caltrans. Caltrans shall establish a reasonable time frame for this comment period. Caltrans shall consider the objection, and in reaching its decision, Caltrans will take all comments from the other signatory parties into account. Within 15 days following closure of the comment period, Caltrans will render a decision regarding the objection and respond to the objecting party. Caltrans will promptly notify the other signatory parties of its decision in writing, including a copy of the response to the objecting party. Caltrans’ decision regarding resolution of the objection will be final. Following issuance of its final decision, Caltrans may authorize the action subject to dispute hereunder to proceed in accordance with the terms of that decision.

7. Caltrans shall provide all parties to this MOA, and the ACHP, if the ACHP has commented, and any parties that have objected pursuant to section D.6 of this stipulation, with a copy of its final written decision regarding any objection addressed pursuant to this stipulation.

8. Caltrans may authorize any action subject to objection under this stipulation to proceed after the objection has been resolved in accordance with the terms of this stipulation.

E. Amendments

Any signatory party to this MOA may propose that this MOA be amended, whereupon all signatory parties shall consult to consider such an amendment. The amendment will be effective on the date that a copy is signed by all of the original signatories. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation III.F, below.

F. Termination

1. If this MOA is not amended as provided for in Stipulation III.E, or if either signatory proposes termination of this MOA for other reasons, the signatory party proposing termination shall, in writing, notify the other MOA parties, explain the reasons for proposing termination, and consult with the other parties for at least 30 days to seek alternatives to termination. Such consultation shall not be required if Caltrans proposes termination because the Undertaking no longer meets the definition set forth in 36 CFR § 800.16(y).
SIGNATORY PARTIES

California Department of Transportation
By: ___________ Date: 5/6/10
Jay Norvell, Chief
Division of Environmental Analysis

California State Historic Preservation Officer
By: ___________ Date: 10 MAY 2010
Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

CONCURRING PARTIES

California Department of Transportation
By: ___________ Date: 5/25/2010
Michael Miles, District Director
District 7, Los Angeles

City of Los Angeles
By: ___________ Date: 8/19/10
Cynthia Ruiz, President
Board of Public Works
Attachment A: APE MAPPING

The APE Map is being kept on file with the City of Los Angeles and Caltrans.
Appendix C
Title VI Policy Statement
July 20, 2010

TITLE VI
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Charles Wahnon, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353 or toll free 1-866-810-6346 (voice), TTY 711, fax (916) 324-1869, or via email: charles_wahnon@dot.ca.gov.

CINDY MCKIM
Director

"Caltrans improves mobility across California"
This page intentionally left blank.
Appendix D
Summary of Relocation Benefits
California Department of Transportation Relocation Assistance Program

Relocation Assistance Advisory Services
The California Department of Transportation (Caltrans) would provide relocation advisory assistance to any person, business, farm, or nonprofit organization displaced as a result of Caltrans’ acquisition of real property for public use. Caltrans would assist residential displacees in obtaining comparable decent, safe, and sanitary replacement housing by providing current and continuing information on sales prices and rental rates of available housing. Nonresidential displacees would receive information on comparable properties for lease or purchase.

Residential replacement dwellings would be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, displacees would be offered comparable replacement dwellings that are open to all persons regardless of race, color, religion, sex, or national origin, and are consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance would also include supplying information concerning federal- and state-assisted housing programs, and any other known services being offered by public and private agencies in the area.

Additional Information
No relocation payment received would be considered as income for the purpose of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law (except for any federal law providing low-income housing assistance).

Persons who are eligible for relocation payments and who are legally occupying the property required for the project would not be asked to move without being given at least 90 days’ advance notice, in writing. Occupants of any type of dwelling eligible for relocation payments would not be required to move unless at least one comparable "decent, safe, and sanitary" replacement residence, open to all persons regardless of race, color, religion, sex, or national origin, is available or has been made available to them by the State.

Any person, business, farm, or nonprofit organization that has been refused a relocation payment by Caltrans, or believes that the payments are inadequate may appeal for a hearing before a hearing officer or the Caltrans’ Relocation Assistance Appeals Board. No legal assistance is required; however, the displacee may choose to obtain legal council at his/her expense. Information about the appeal procedure is available from Caltrans’ Relocation Advisors.

The information above is not intended to be a complete statement of all of Caltrans’ laws and regulations. At the time of the first written offer to purchase, owner/occupants are given a more-
detailed explanation of the State's relocation services. Tenant occupants of properties to be acquired are contacted immediately after the first written offer to purchase, and they are also given a more-detailed explanation of Caltrans’ relocation programs.

**Important Notice**
To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Department of Transportation relocation advisor at:

State of California  
Department of Transportation, District #07  
100 South Main Street  
Los Angeles, CA 90012
Appendix E
Glossary of Technical Terms
# Appendix E  Glossary of Technical Terms

## Environmental Technical Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>“Action,” a federal term, is the construction or reconstruction, including associated activities, of a transportation facility. For the purposes of this Environmental Impact Report (EIR)/Environmental Impact Statement (EIS), the terms “project,” “proposal,” and “action” are used interchangeably unless otherwise specified. An action may be categorized as a “categorical exclusion” or a “major federal action.”</td>
</tr>
<tr>
<td>Area of Potential Effects (APE)</td>
<td>A term used in Section 106 regulations (36 Code of Federal Regulations [CFR] 800) to describe the area in which historic and archaeological resources may be affected by a federal undertaking.</td>
</tr>
<tr>
<td>Beneficial Use</td>
<td>A use of a natural water resource that enhances the social, economic, and environmental well-being of the user. Twenty-one (21) beneficial uses are defined for the waters of California, ranging from municipal and domestic supply to fisheries and wildlife habitat.</td>
</tr>
<tr>
<td>Best Management Practice (BMP)</td>
<td>Methods that have been determined to be the most effective, practical means of preventing or reducing pollution from non-point sources.</td>
</tr>
<tr>
<td>Clean Air Act (CAA)</td>
<td>The Clean Air Act of 1970 and the subsequent amendments, including the Clean Air Act Amendments (CAAAs) of 1990 (42 United States Code [U.S.C.] 7401-7671g), is the primary federal law that protects the nation's air resources. This act establishes a comprehensive set of standards, planning processes, and requirements to address air pollution problems and reduce emissions from major sources of pollutants.</td>
</tr>
<tr>
<td>Council on Environmental Quality (CEQ)</td>
<td>The federal agency responsible for developing regulations and guidance for agencies implementing the National Environmental Policy Act (NEPA).</td>
</tr>
<tr>
<td>Cooperating Agency</td>
<td>“Cooperating Agency,” under NEPA, means any agency other than the lead agency that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal for any action significantly affecting the human environment. Under the California Environmental Quality Act (CEQA), the term “responsible agency” is used.</td>
</tr>
<tr>
<td>Cumulative Effects</td>
<td>An impact on the environment that results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts result from individually minor, but collectively significant, actions taking place over a period of time.</td>
</tr>
<tr>
<td>Decibel (dB)</td>
<td>A unit of noise measured on a logarithmic scale that compresses the range of sound pressures audible to the human ear over a range from zero to 140, where zero decibels represents sound pressure corresponding to the threshold of human hearing and 140 decibels corresponds to a pressure at which pain occurs. Noise analysts measure sound pressure levels that people hear in decibels, much like other analysts measure linear distances in yards or meters. A-weighted decibels (dBA) refer to a weighting that accounts for the various frequency components in a way that corresponds to human hearing.</td>
</tr>
<tr>
<td>Term</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Environmental Assessment</td>
<td>A concise public document for which a federal agency is responsible that serves to briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a Finding of No Significant Impact. It is the federal equivalent of the CEQA term “initial study.”</td>
</tr>
<tr>
<td>Environmental Document</td>
<td>A draft or final EIS or EIR, Finding of No Significant Impact, Environmental Assessment, or Negative Declaration. A Categorical Exclusion form is not considered an environmental document; it is rather the documentation that the project is exempt/excluded.</td>
</tr>
<tr>
<td>Environmental Justice</td>
<td>The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.</td>
</tr>
<tr>
<td>Environmental Protection Agency</td>
<td>An agency of the executive branch of the federal government charged with establishing and enforcing environmental regulations.</td>
</tr>
<tr>
<td>Floodplain</td>
<td>The lowlands adjoining inland and coastal waters and relatively flat areas and flood-prone offshore islands, including, at a minimum, those areas that have a 1 percent or greater chance of flood in any given year (also known as a 100-year or a Zone A floodplain).</td>
</tr>
<tr>
<td>Hazardous Materials</td>
<td>Substances or materials that the Secretary of Transportation has determined are capable of posing an unreasonable risk to human health, safety, and property when transported in commerce, as designated under 49 CFR Parts 172 and 173.</td>
</tr>
<tr>
<td>Hazardous Wastes</td>
<td>Waste materials that are, by their nature, inherently dangerous to handle or dispose of (e.g., old explosives, radioactive materials, some chemicals, some biological wastes). Usually, industrial operations produce these waste materials.</td>
</tr>
<tr>
<td>Historic Property</td>
<td>Any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP). The term “eligible for inclusion in the NRHP” pertains to both properties that the Secretary of the Interior has formally determined to be eligible and to all other properties that meet NRHP listing criteria.</td>
</tr>
<tr>
<td>Initial Study</td>
<td>Under CEQA, the Initial Study is prepared to determine whether there may be significant environmental effects resulting from a project. The Initial Study is attached to the Negative Declaration or Mitigated Negative Declaration. It can become the basis of an EIR if it concludes that the project may cause significant environmental effects that cannot be mitigated below the level of significance.</td>
</tr>
<tr>
<td>Lead Agency</td>
<td>The public agency that has primary responsibility for carrying out or approving a project that may have a significant effect on the environment and for preparing the environmental document.</td>
</tr>
<tr>
<td>Level of Service (LOS)</td>
<td>A term that denotes traffic operating conditions at a given intersection. There are six levels of service, A through F, which relate to traffic congestion from best to worst. In general, LOS A represents free-flow conditions with no congestion. Conversely, LOS F represents severe congestion with stop-and-go conditions.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Low-Income Population</td>
<td>A population composed of persons whose median household income is below the Department of Health and Human Services poverty guidelines.</td>
</tr>
<tr>
<td>Maintenance Area</td>
<td>A federal term to describe any geographic region of the United States designated nonattainment pursuant to the CAAAs and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under Section 175A of the CAAAs.</td>
</tr>
<tr>
<td>Metropolitan Planning Organization (MPO)</td>
<td>A federal designation for the agency responsible for cooperative transportation decision making for an urbanized area with a population of more than 50,000.</td>
</tr>
<tr>
<td>Metropolitan Transportation Plan</td>
<td>The official intermodal transportation plan that is developed and adopted through the metropolitan transportation planning process for the metropolitan planning area.</td>
</tr>
<tr>
<td>Minority Population</td>
<td>A population composed of persons who are Black (non-Hispanic), Hispanic, Asian American, American Indian, or Alaskan Native.</td>
</tr>
<tr>
<td>National Environmental Policy Act (NEPA)</td>
<td>The National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321-4347; P.L. 91-190) is the basic national charter for the protection of the environment. It establishes policy, sets goals, and provides means for carrying out the policy. Its purpose is to provide for the establishment of a CEQ and to instruct federal agencies on what they must do to comply with the procedures and achieve the goals of NEPA.</td>
</tr>
<tr>
<td>National Historic Preservation Act (NHPA)</td>
<td>The National Historic Preservation Act of 1966, as amended (16 U.S.C. 470-470 et seq.; P.L. 89-665), is the basic legislation of the nation's historic preservation program that established the Advisory Council on Historic Preservation and the Section 106 review process. Section 106 of the NHPA requires every federal agency to &quot;take into account&quot; the effects of its undertakings on historic properties.</td>
</tr>
<tr>
<td>National Pollutant Discharge Elimination System (NPDES) Permit</td>
<td>A permit that is required for facilities and activities that discharge waste into surface waters from a confined pipe or channel.</td>
</tr>
<tr>
<td>National Register of Historic Places (NRHP)</td>
<td>Administered by the National Park Service, the nation's master inventory of known historic properties, including buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archeological, or cultural significance at the federal, state, and local levels.</td>
</tr>
<tr>
<td>Nonattainment Area</td>
<td>Any geographic region of the United States that EPA has designated as a nonattainment area for a transportation-related pollutant(s) for which a National Ambient Air Quality Standard (NAAQS) exists.</td>
</tr>
<tr>
<td>Notice of Availability</td>
<td>A formal public notice under NEPA announcing the availability of a completed Environmental Assessment, Draft EIS, or Final EIS. Such notice is to be published in local newspapers. For EISs, publication of such notice in the Federal Register is also required.</td>
</tr>
<tr>
<td>Notice of Completion</td>
<td>The CEQA notice submitted to the State Clearinghouse when an EIR is completed. For Caltrans EIRs, the requirement for a Notice of Completion is satisfied by the cover sheet transmitting the EIR to the Clearinghouse.</td>
</tr>
<tr>
<td>Notice of Determination</td>
<td>A formal written notice under CEQA filed by a lead state agency when approving any project subject to the preparation of a Negative Declaration or an EIR.</td>
</tr>
<tr>
<td>Glossary Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Notice of Intent (NOI)</td>
<td>A notice that an EIS will be prepared and considered. The NOI is published in the Federal Register by the lead federal agency. The CEQA equivalent of this notice is called the Notice of Preparation (NOP).</td>
</tr>
<tr>
<td>Notice of Preparation (NOP)</td>
<td>The CEQA notice that an EIR will be prepared for a project.</td>
</tr>
</tbody>
</table>
| Project                       | CEQA (§21065) defines a “project” as an activity that may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and which is any of the following:  
  a) An activity directly undertaken by any public agency.  
  b) An activity undertaken by a person that is supported, in whole or in part, throughout contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.  
  c) An activity that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies. |
| Recognized Environmental       | The presence or likely presence of any hazardous substance or petroleum product on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property (Ref. American Society of Testing and Materials [ASTM] Standard E 1527-00). |
| Conditions (RECs)              |                                                                                                                                                                                                         |
| Record of Decision            | A formal written statement, required under NEPA, wherein a federal lead agency must present the basis for its decision to approve a selected project alternative, summarize mitigation measures incorporated into the project, and document any required Section 4(f) approval. |
| Regional Transportation Plan  | “…the official intermodal metropolitan transportation plan that is developed through the metropolitan planning process for the metropolitan planning area, developed pursuant to 23 CFR Part 450.” |
| (RTP)                         |                                                                                                                                                                                                         |
| Responsible Agency            | A “public agency, other than the lead agency that has responsibility for carrying out or approving a project” (Public Resources Code [PRC] 21069). The CEQA Guidelines further explain the statutory definition by stating that a “responsible agency” includes “all public agencies other than the Lead Agency that have discretionary approval power over the project” (14 CCR 15381). State and local public agencies that have discretionary authority to issue permits, for example, fall into this category. |
| SAFETEA LU                    | The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (commonly known by its acronym, SAFETEA-LU) is the most recent federal transportation bill authorizing funding for the nation’s surface transportation programs. Signed into law in August 2005, SAFETEA-LU replaced the expired Transportation Equity Act for the 21st Century (TEA-21). The law establishes funding levels and policies for the federal government’s highway, highway safety, transit, motor carrier, and some rail programs administered by the U.S. Department of Transportation. SAFETEA-LU expires September 30, 2009. |
| Scoping                       | A process for determining the scope of issues to be addressed in an Environmental Assessment and EIS and for identifying significant issues to be analyzed in depth in an EIS. |
CEQA defines a "Significant effect on the environment" as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant” (§15382).

CEQA requires that the lead agency identify each “significant effect on the environment” resulting from the project and avoid or mitigate it.

The CEQA Guidelines include mandatory findings of significance for certain effects, thus requiring the preparation of an EIR.

NEPA stipulates that an EIS is required when the proposed federal action has the potential to “significantly affect the quality of the human environment.” To determine that potential, one must consider both the context in which the action takes place and the intensity of its effect. Section 1508.27 of the CEQ regulations define the term “significantly” as:

Significantly, as used in NEPA, requires considerations of both context and intensity:

(a) Context. This means that the significance of an action must be analyzed in several contexts, such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short-term and long-term effects are relevant.

(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial.

(2) The degree to which the proposed action affects public health or safety.

(3) Unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

(10) Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment. [43 FR 56003, Nov. 29, 1978; 44 FR 874, Jan. 3, 1979]
| **State Implementation Plan (SIP)** | The portion (or portions) of an applicable air quality implementation plan approved or promulgated, or the most recent revision thereof, under sections 110, 301(d) and 175A of the CAA. |
| **Statewide Transportation Improvement Plan** | A staged, multiyear, statewide, intermodal program of transportation projects that is consistent with the statewide transportation plan and planning processes and metropolitan plans, Transportation Improvement Plans, and processes. |
| **Statewide Transportation Plan** | The official statewide, intermodal transportation plan that is developed through the statewide transportation planning process. |
| **Title VI of the Civil Rights Act of 1964** | A policy of the United States that prevents discrimination on the grounds of race, color, or national origin in connection with programs and activities receiving federal financial assistance. |
| **Transportation Control Measure** | Any measure that is specifically identified and committed to in the applicable implementation plan that is either one of the types listed in §108 of the CAA, or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions. Notwithstanding the above, vehicle technology-based, fuel-based, and maintenance-based measures that control the emissions from vehicles under fixed traffic conditions are not Transportation Control Measures for the purposes of project-level conformity. |
| **Transportation Improvement Plan** | A staged, multiyear, intermodal program of transportation projects that is consistent with the metropolitan transportation plan. It is a federal term. |
| **Trustee Agency** | A state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California. Trustee agencies include: (a) the California Department of Fish and Game (CDFG) with regard to the fish and wildlife of the state, to designated rare or endangered native plants, and to game refuges, ecological preserves, and other areas administered by the department; (b) the State Lands Commission with regard to state-owned “sovereign” lands such as the beds of navigable waters and state school lands; (c) the State Department of Parks and Recreation with regard to units of the State Park System; and (d) the University of California with regard to sites within the Natural Land and Water Reserves System” (14 CCR 15386). |
| **Volume to Capacity Ratio (V/C)** | The ratio of an intersection’s traffic volume (V) to its capacity (C), with capacity defined as the theoretical maximum number of vehicles that can pass through an intersection during a specified time period. When the V/C ratio is 1.0, traffic is considered to be “at capacity” and there is traffic congestion. A V/C ratio of 1.0 or more translates to an LOS F. |
| **Wetland** | Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. (United States Army Corps of Engineers [USACE] and EPA definition). |
**Engineering Terms**

**Abutment**
Part of a bridge substructure. Refers to the first and last supports of a bridge.

**Alkali-Silica Reaction**
A reaction between reactive (amorphous) silica (in concrete aggregates) and an alkali (usually present in the cement), which results in the formation of a gel. This gel increases in volume with water and exerts expansive pressure on the concrete, causing failure of the concrete. (from Wikipedia)

**Approaches**
Part of bridge or bridges leading up to the main span.

**Arch**
A structural form utilizing a semicircular substructure.

**Beam**
A horizontal structure member supporting vertical loads by resisting bending.

**Bent**
Part of a bridge substructure. A single or multi-column frame commonly made of reinforced concrete or steel that supports a vertical load and is placed transverse to the length of a structure. Bents are commonly used to support beams and girders.

**Bent cap**
Refers to the horizontal element of a bent.

**Cable-stayed**
A variation of suspension bridge in which the tension members extend from one or more towers at varying angles to carry the deck. Allowing much more freedom in design form, this type does not use cables draped over towers, nor the anchorages at each end, as in a traditional suspension bridge.

**Cast-in-place concrete girder**
A concrete girder poured in the field in its final position.

**Columns**
Vertical supporting elements of a bridge.

**Concrete box girder**
A hollow concrete girder.

**Deck**
The portion of the superstructure in contact with vehicle tires.

**Functionally obsolete**
A structure including substandard components, such as older railing or sidewalk and having a roadway geometry that does not meet today’s standards. A functionally obsolete bridge may be structurally sufficient, but unable to handle its current volume of traffic.

**Girder**
A girder is a larger beam.

**Main span**
Refers to the longest span of a bridge structure (usually significantly longer than other spans). Also refers to the portion of the structure spanning the longest distance.

**Pier**
A vertical support or substructure unit that supports the spans of a multi-span superstructure at an intermediate location between its abutments.

**Piles**
Long vertical steel or concrete elements drilled or driven deep into the ground to form part of a foundation. Piles are typically used in groups.

**Pile Caps**
A rectangular concrete element built on top of a group of piles. A column can be built above a pile cap.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Span</td>
<td>The distance between bents, piers, towers, or abutments.</td>
</tr>
<tr>
<td>Steel box girder</td>
<td>A hollow steel girder.</td>
</tr>
<tr>
<td>Steel casings</td>
<td>Steel pipe placed around another element for various applications.</td>
</tr>
<tr>
<td>Steel tied arch</td>
<td>Bridge built with a semicircular member over the deck, using the deck as a tie. This bridge usually involves cables connecting the deck to the arch.</td>
</tr>
<tr>
<td>Substructure</td>
<td>Any portion of a bridge structure below the superstructure, including abutments, columns, walls, and foundations that support the superstructure.</td>
</tr>
<tr>
<td>Superstructure</td>
<td>The portion of a bridge structure that carries the traffic load and transfers it to the substructure.</td>
</tr>
<tr>
<td>Tie-in</td>
<td>Location where approaches and main span meet.</td>
</tr>
<tr>
<td>Truss</td>
<td>A structural form that is used in the same way as a beam, but because it is made of a web-like assembly of smaller members, it can be made longer, deeper, and therefore, stronger than a beam or girder while being lighter than a beam of similar dimensions.</td>
</tr>
</tbody>
</table>
Appendix F
Mitigation Monitoring and Reporting Program
Appendix F  Mitigation Monitoring and Reporting Program

This mitigation monitoring and reporting program (MMRP) has been prepared pursuant to State of California Public Resources Code (PRC) Section 21081.6, which requires adoption of a reporting and monitoring program for projects in which the lead agency has required changes or adopted mitigation to avoid significant environmental effects. The MMRP is also a part of the fulfillment of Title 23, Code of Federal Regulations (CFR) Part 635.309(j). Specific reporting or monitoring requirements to be enforced during project implementation must be defined prior to final approval of the project proposal by the decision makers.

This MMRP identifies responsible parties and provides guidelines for implementation and reporting for all mitigation measures outlined in the joint Final Environmental Impact Report/Environmental Impact Statement and Section 4(f) Evaluation for 6th Street Viaduct Seismic Improvement Project, dated October 2011 (FEIR/EIS).

A. Responsible Party

The City of Los Angeles is the CEQA lead agency. The Department of Public Works, Bureau of Engineering (BOE) has responsibility for construction management and oversight, and the assurance that mitigation measures are implemented by designated and qualified personnel, which may include design and construction contractors. Therefore, BOE will also be responsible for monitoring and reporting on the mitigation measures in this MMRP. In addition, the California Department of Transportation (Caltrans), assuming responsibility as federal lead agency, will be responsible for oversight to ensure that the mitigation measures are implemented.

B. Mitigation Requirements

The analysis in the EIR/EIS assumes that, unless otherwise stated, the project will be designed, constructed and operated following all applicable laws, regulations, ordinances and formally adopted City standards (e.g., Los Angeles Municipal Code and Bureau of Engineering Standard Plans). Also, this analysis assumes that construction will follow the uniform practices established by the Southern California Chapter of the American Public Works Association (e.g., Standard Specifications for Public Works Construction and the Work Area Traffic Control Handbook) as specifically adapted by the City of Los Angeles (e.g., The City of Los Angeles Department of Public Works Additions and Amendments to the Standard Specifications For Public Works Construction (AKA "The Brown Book," formerly Standard Plan S-610)).

A total of 23 individual mitigation measures that are not part of applicable laws or City-adopted standards are required to be undertaken to mitigate the potentially significant impacts and
unavoidable adverse effects associated with this project. These mitigation measures are presented in Table 1.

C. Schedule and Reporting Frequency

Implementation and monitoring of mitigation tasks, as outlined in Table 1, will be documented in the Mitigation Monitoring Report form (see Exhibit A), which will be issued by LABOE Environmental Management Group (EMG) to the party responsible for task implementation. These forms will be used to demonstrate and document compliance with PRC Section 21081.6 and 23 CFR 635.309(j), and will be completed by those having designated responsibility for mitigation implementation and monitoring. Completed forms shall be submitted to EMG for verification and filing as soon as each mitigation task is completed, or reaches a designated completion milestone. Retained mitigation monitoring reports will be made available to the public for a period of five (5) years following completion of the project. Duplicate copies of certified forms will also be retained in the City’s archives together with the ‘as-built’ drawings for this project.
## Table 1. Mitigation Implementation, Scheduling, and Reporting

<table>
<thead>
<tr>
<th>No.</th>
<th>Mitigation Measure</th>
<th>Affected Resource(s)</th>
<th>Implementation Task(s)</th>
<th>Schedule of Implementation</th>
<th>Implementation Responsibility</th>
<th>Record of Implementation</th>
<th>Verification and Record Keeping</th>
</tr>
</thead>
</table>
| 1   | Conduct a public outreach program to keep residents, businesses, utility service providers, emergency service providers (including Fire and Police Departments) within the project area informed of the project construction schedule, demolition plan, material hauling plan, relocation plans and assistance programs, traffic-impacted areas, and the Traffic Management Plan (TMP) and other relevant project information. | Community Values Cumulative Effects (MM 3-1) | 1. Engage a public outreach consultant to develop a public outreach program for implementation during preconstruction and construction phases. The Plan may include, but not limited to, organization of community meetings, publication of newsletters, creation and maintenance of a public website, and establishment of telephone hotlines.  
2. Conduct periodic community meetings to provide project updates during final design phase.  
3. Notify affected property owners, area residents, emergency service providers, and public service providers of scheduled demolition and construction activities at least two weeks in advance.  
4. Make available the demolition plan and material hauling plan for public access and review.  
5. Post project information signage at the construction zone at least one month before scheduled demolition and construction dates.  
6. Issue quarterly project updates to affected property owners. | 1. Final Design  
2. Final Design  
3. Prior to demolition  
4. Prior to demolition  
5. Prior to demolition and construction  
6. During demolition and construction | 1. LABOE BIP  
2-4. Design Consultant, Public Outreach Consultant, LABOE Public Affairs Office  
5. LABOE Construction Manager  
6. Public Outreach Consultant, LABOE Public Affairs Office | 1-6. Records of compliance kept on file at LABOE BIP. | 1-6 LABOE EMG |

¹ Mitigation measures presented in the EIR/EIS is provided in the parenthesis for reference.
<table>
<thead>
<tr>
<th>No.</th>
<th>Mitigation Measure</th>
<th>Affected Resource(s)</th>
<th>Implementation Task(s)</th>
<th>Schedule of Implementation</th>
<th>Implementation Responsibility</th>
<th>Record of Implementation</th>
<th>Verification and Record Keeping</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Require the construction contractor to submit the means and methods for demolition for LABOE review and approval. During the demolition period, construction inspectors shall ensure the contractors adhere to the approved plan.</td>
<td>Community Values (MM 3-2)</td>
<td>1. Prepare general mean and method requirements for demolition work so as to minimize impacts to nearby businesses and include them in the bid &amp; specifications package. 2. Review and approve the plan submitted by construction contractor. 3. Ensure the construction contractor adheres to the approved demolition plan.</td>
<td>1. Final Design 2. Prior to demolition 3. During demolition</td>
<td>1. Design Consultant 2. LABOE BIP 3. LABOE Construction Manager</td>
<td>1. General requirements established and included in the bid package. 2. Approved plan kept at LABOE BIP 3. Record of compliance kept on file at LABOE BIP</td>
<td>1-3. LABOE EMG</td>
</tr>
<tr>
<td>3</td>
<td>Participate in ongoing meetings with the LABOE Los Angeles River Project Office (LARPO) to implement elements of the Los Angeles River Revitalization Master Plan (LARRMP) related to Greening Concept objectives to improve the area near the 6th Street Viaduct and provide potential future connections to the river corridor from the viaduct. In addition to LARPO, meetings will include, but are not limited to, the Planning Department, the Recreation and Parks Department, and the Community Redevelopment Agency.</td>
<td>Community Values Visual Resources Cumulative Effects (MM 3-3)</td>
<td>1. Designated staff of LABOE to attend appropriate planning meetings to provide input on possible design changes/ enhancement to the new viaduct and connecting roadway to accommodate desired features proposed by relevant planning agencies.</td>
<td>1. Throughout the design phase, construction, and post-construction as applicable</td>
<td>1. LABOE BIP</td>
<td>1. Minutes of meetings kept on file at LABOE.</td>
<td>1. LABOE EMG</td>
</tr>
<tr>
<td>4</td>
<td>Provide improvements to enhance the aesthetics and pedestrian safety of 11 out of 13 affected intersections along the proposed detour routes that could not be mitigated. Types of improvements would be developed with public input and using context sensitive design solutions, and may include but not be limited to the following: decorative crosswalk with community theme; raised</td>
<td>Community Values/ Environmental Justice Visual Resources (MM 3-4)</td>
<td>1. Include proposed improvements at the following intersections as part of the Traffic Detour Plan: • 3rd Street and Alameda Street • 7th Street and Alameda Street • Whittier Boulevard and</td>
<td>1. Final Design 2. Prior to the commencement of detour plan</td>
<td>1. Design Consultant 2. Construction contractor</td>
<td>1. Improvements to affected intersections approved by LADOT 2. Construction completed and accepted by LADOT</td>
<td>1. LABOE EMG 2. LADOT</td>
</tr>
<tr>
<td>No.</td>
<td>Mitigation Measure</td>
<td>Affected Resource(s)</td>
<td>Implementation Task(s)</td>
<td>Schedule of Implementation</td>
<td>Implementation Responsibility</td>
<td>Record of Implementation</td>
<td>Verification and Record Keeping</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>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 shall identify and provide alternate traffic detour routes, construction materials hauling routes, bus stops, shortest alternate transit routes and operation hours, alternative pedestrian routes, alternative bicycle routes, and residential and commercial access routes to be used during the Community Values Traffic and Transportation/Pedestrian Facilities Cumulative Effects (MM 3-5)</td>
<td>Soto Street • 7th Street and Santa Fe Avenue • 4th Street-Pecan Street and US 101 Southbound off-ramp • 4th Street and US 101 Southbound off-ramp • 4th Street and US 101 Northbound off-ramp • 7th Street and Soto Street • 4th Street and Boyle Avenue • 4th Street and I-5 NB On/Off-Ramps/Cumming Street • 7th Street and Boyle Avenue. 2. Construct street improvements per approved plan.</td>
<td>1. Prepare construction staging plan and TMP 2. Include requirements in bid &amp; contract specifications. 3. Implement the approved plan. 4. Provide a telephone hotline to receive comments and concerns from affected parties about construction activities.</td>
<td>1-2. Final Design 3. During demolition and construction activities 4. During demolition and construction</td>
<td>1-2. Design Consultant 3. LADOT 4. LABOE Construction Manager</td>
<td>1-4. Records of compliance kept on file at LABOE BIP and LADOT.</td>
<td>1-2. LABOE EMG 3. LADOT 4. LABOE EMG</td>
</tr>
<tr>
<td>No.</td>
<td>Mitigation Measure</td>
<td>Affected Resource(s)</td>
<td>Implementation Task(s)</td>
<td>Schedule of Implementation</td>
<td>Implementation Responsibility</td>
<td>Record of Implementation</td>
<td>Verification and Record Keeping</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>Inform event organizers in the Boyle Heights and Downtown Arts District communities of the construction schedule to avoid any conflicts in the use of areas near the 6th Street Viaduct for any festive events.</td>
<td>Community Values (MM 3-6)</td>
<td>1. Engage a public outreach consultant to develop a public outreach program for implementation during preconstruction and construction phases. The Plan may include, but not limited to, organization of community meetings, publication of newsletters, creation and maintenance of a public website, and establishment of telephone hotlines. 2. Conduct periodic community meetings to provide project updates during final design phase.</td>
<td>1. Final Design 2. Final Design</td>
<td>1. LABOE BIP 2. Design Consultant, Public Outreach Consultant, LABOE Public Affairs Office</td>
<td>1. Records of compliance kept on file at LABOE BIP.</td>
<td>1-2 LABOE EMG</td>
</tr>
<tr>
<td>7</td>
<td>If homeless people were found within the construction site, the Los Angeles Homeless Services Authority (LAHSA) would be contacted to provide services to those affected prior to construction.</td>
<td>Community Values/Environmental Justice (MM 3-7)</td>
<td>1. Survey the construction area. If homeless people are found within the area, then contact LAHSA to provide service to them.</td>
<td>1. Prior to demolition and construction</td>
<td>1. Construction Contractor</td>
<td>1. Records of compliance kept on file at LABOE BIP.</td>
<td>1-2 LABOE EMG</td>
</tr>
<tr>
<td>8</td>
<td>Require the construction contractor to install new traffic signals at the intersection of 4th Street and US 101 SB On- and Off-Ramps, and connect to Los Angeles City ATSAC system.</td>
<td>Traffic and Transportation/Pedestrian Facilities (MM 3-8)</td>
<td>1. Include the required traffic signal features into the roadway design 2. Install the traffic signal per the approved plan</td>
<td>1. Roadway Final Design 2. Construction phase</td>
<td>1. Design Consultant 2. Construction contractor</td>
<td>1. Design reviewed and approved by LADOT 2. Construction completed and accepted by LABOE</td>
<td>1. LABOE EMG 2. LABOE BIP</td>
</tr>
<tr>
<td>9</td>
<td>Require the construction contractor to restripe to add an eastbound right-turn lane at the intersection of 4th Street and Soto Street.</td>
<td>Traffic and Transportation/Pedestrian Facilities (MM 3-9)</td>
<td>1. Include the required intersection striping features into the roadway design 2. Restripe the roadway per the approved plan</td>
<td>1. Roadway Final Design 2. Construction Phase</td>
<td>1. Design Consultant 2. Construction Contractor</td>
<td>1. Design reviewed and approved by LADOT 2. Construction completed and accepted by LABOE</td>
<td>1. LABOE EMG 2. LABOE EMG</td>
</tr>
<tr>
<td>10</td>
<td>Establish an Aesthetics Advisory Committee (AAC) to provide input and advice throughout the design</td>
<td>Visual Resources</td>
<td>1. Formation of AAC 2. Conduct AAC meetings/</td>
<td>1-2 Final Design</td>
<td>1-2 Design Consultant</td>
<td>1-2. Minutes of workshops kept on file at LABOE BIP.</td>
<td>1-2. LABOE EMG</td>
</tr>
<tr>
<td>No.</td>
<td>Mitigation Measure</td>
<td>Affected Resource(s)</td>
<td>Implementation Task(s)</td>
<td>Schedule of Implementation</td>
<td>Implementation Responsibility</td>
<td>Record of Implementation</td>
<td>Verification and Record Keeping</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------</td>
<td>----------------------</td>
<td>------------------------</td>
<td>---------------------------</td>
<td>-----------------------------</td>
<td>--------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>workshops to solicit input on design elements</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(MM 3-10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Prior to the start of any work that could adversely affect any characteristics that qualify the 6th Street Viaduct (Bridge No. 53C-1880 and 53-0595) as a historic property, contact the National Park Service Western Region Office (NPS) in Oakland, California, to determine if additional recordation is required for the historic property beyond that provided in “Historic American Engineering Record, 6th Street Bridge, HAER No. CA-176,” dated May 7, 1996. The City shall provide NPS 30 days to respond to their additional recordation determination request. If additional documentation is required, Caltrans shall ensure that the additional documentation is completed and accepted by NPS before the Viaduct is altered and/or demolished. The City shall prepare draft and final reports to be reviewed by NPS.</td>
<td>Cultural Resources (MM 3-11)</td>
<td>1. Engage a qualified architectural historian consultant to coordinate with NPS and prepare required documents per NPS requirements.</td>
<td>1. Final Design 2. Construction Phase</td>
<td>1-2 LABOE BIP</td>
<td>1. HAER documentation reviewed and approved by NPS. 2. A copy of transmittal letter to SHPO kept on file at LABOE BIP and Caltrans.</td>
<td>1-2. LABOE EMG</td>
</tr>
<tr>
<td>12</td>
<td>Upon completion, copies of the HAER documentation prescribed in Mitigation Measure 3-9, consisting of an acid-free xerographic copy of the report, prepared on standard 8 ½ X 11 paper, shall be retained by</td>
<td>Cultural Resources (MM 3-12)</td>
<td>1. Reproduce and mail approved HAER documentation to designated recipients. 2. Submit activity completion report to SHPO.</td>
<td>1. After HAER documentation is approved by NPS. 2. Prior to viaduct demolition</td>
<td>1. Design Consultant 2. LABOE BIP</td>
<td>1. Transmittal letter kept on file at LABOE BIP. 2. A copy of progress report to SHPO kept on file at LABOE BIP and Caltrans.</td>
<td>1-2. LABOE EMG</td>
</tr>
<tr>
<td>No.</td>
<td>Mitigation Measure</td>
<td>Affected Resource(s)</td>
<td>Implementation Task(s)</td>
<td>Schedule of Implementation</td>
<td>Implementation Responsibility</td>
<td>Record of Implementation</td>
<td>Verification and Record Keeping</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------</td>
<td>----------------------</td>
<td>------------------------</td>
<td>---------------------------</td>
<td>-----------------------------</td>
<td>--------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td></td>
<td>Caltrans District 7, deposited in the Caltrans Transportation History Library in Sacramento, and offered by the City to, at a minimum, the Los Angeles Public Library, Los Angeles Conservancy, Los Angeles City Historical Society, Historical Society of Southern California, City of Los Angeles Office of Historical Resources, and the California Office of Historic Preservation.</td>
<td>Cultural Resources (MM 3-13)</td>
<td>1. Post an electronic copy of approved HABS/HAER documentation on the City website and provide the link to various designated libraries. 2. Submit activity completion report to SHPO.</td>
<td>1. After HABS/HAER documentation is approved by NPS. 2. Prior to viaduct demolition</td>
<td>1. LABOE Information System Department 2. LABOE BIP</td>
<td>1. A copy of transmittal letter kept on file at LABOE BIP. 2. A copy of progress report to SHPO kept on file at LABOE BIP and Caltrans.</td>
<td>1-2. LABOE EMG</td>
</tr>
<tr>
<td></td>
<td>13 Work with the Los Angeles Public Library to place the historical information from the HABS/HAER report 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 will also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on their website.</td>
<td>Cultural Resources (MM 3-13)</td>
<td>1. Engage a qualified consultant to prepare the documentary motion picture or video. 2. Submit a story board for review and approval by LABOE, Cultural Heritage Commission, City Cultural Affairs, Caltrans, and SHPO 3. Submit the draft documentary video for review and approval by Caltrans, City Board of Public Works, and SHPO 4. Distribute the approved documentary video to local broadcast stations and other</td>
<td>1-5. Final design (Note: Period of implementation may extend to cover demolition, construction, and opening ceremony activities, depending upon the approved story board for the documentary.)</td>
<td>1. LABOE BIP 2. Design Consultant 3. Design Consultant 4. LABOE BIP 5. LABOE BIP</td>
<td>1. Record of compliance kept on file at LABOE BIP. 2-4 A copy of transmittal letters and correspondence with relevant agencies kept on file at LABOE BIP. 5. A copy of progress report to SHPO kept on file at LABOE BIP and Caltrans.</td>
<td>1-5 LABOE EMG</td>
</tr>
<tr>
<td></td>
<td>14 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</td>
<td>Cultural Resources (MM 3-14)</td>
<td>1. Engage a qualified consultant to prepare the documentary motion picture or video. 2. Submit a story board for review and approval by LABOE, Cultural Heritage Commission, City Cultural Affairs, Caltrans, and SHPO 3. Submit the draft documentary video for review and approval by Caltrans, City Board of Public Works, and SHPO 4. Distribute the approved documentary video to local broadcast stations and other</td>
<td>1-5. Final design (Note: Period of implementation may extend to cover demolition, construction, and opening ceremony activities, depending upon the approved story board for the documentary.)</td>
<td>1. LABOE BIP 2. Design Consultant 3. Design Consultant 4. LABOE BIP 5. LABOE BIP</td>
<td>1. Record of compliance kept on file at LABOE BIP. 2-4 A copy of transmittal letters and correspondence with relevant agencies kept on file at LABOE BIP. 5. A copy of progress report to SHPO kept on file at LABOE BIP and Caltrans.</td>
<td>1-5 LABOE EMG</td>
</tr>
<tr>
<td>No.</td>
<td>Mitigation Measure</td>
<td>Affected Resource(s)</td>
<td>Implementation Task(s)</td>
<td>Schedule of Implementation</td>
<td>Implementation Responsibility</td>
<td>Record of Implementation</td>
<td>Verification and Record Keeping</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------</td>
<td>----------------------</td>
<td>------------------------</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td>--------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>15</td>
<td>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. City shall post an electronic version of the booklet 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. City shall maintain the camera-ready master booklet and produce additional copies if there is demand.</td>
<td>Cultural Resources (MM 3-15)</td>
<td>1. Engage a qualified consultant to prepare the historic monumental bridge booklet. 2. Submit an outline of the booklet for review and approval by LABOE, Cultural Heritage Commission, Cultural Affairs Department, Caltrans, and SHPO. 3. Submit the draft booklet for review and approval by Caltrans, City Board of Public Works, and SHPO. 4. Distribute the approved booklet to specified recipients. 5. Post an electronic version of the approved booklet on the City website and provide the link to various designated libraries. 6. Submit activity completion report to SHPO.</td>
<td>1-6. Final design through bridge opening day.</td>
<td>1. LABOE BIP 2. Design Consultant 3. Design Consultant 4. LABOE BIP 5. Information System Department 6. LABOE BIP</td>
<td>1. Record of compliance kept on file at LABOE BIP. 2-4 A copy of transmittal letters and correspondence with relevant agencies kept on file at LABOE BIP. 5. Electronic version of booklet posted on City website 6. A copy of progress report to SHPO kept on file at LABOE BIP and Caltrans.</td>
<td>1-6. LABOE EMG</td>
</tr>
<tr>
<td>16</td>
<td>Install two freestanding informative permanent metal plaques or signage at both ends of the viaduct, at public locations, that provide a brief history of the bridge, its engineering features and characteristics, and the reasons it was replaced.</td>
<td>Cultural Resources (MM 3-16)</td>
<td>1. Incorporate the required features in project design. 2. Submit the design for review and approval by LABOE, Cultural Heritage Commission, Cultural Affairs Department, Caltrans, and SHPO.</td>
<td>1-4. Final Design</td>
<td>1. Design Consultant 2. LABOE BIP 3. Design Consultant 4. LABOE BIP</td>
<td>1-3 Record of compliance kept on file at LABOE BIP. 4. A copy of progress report to SHPO kept on file at LABOE BIP and Caltrans.</td>
<td>1-4. LABOE EMG</td>
</tr>
<tr>
<td>No.</td>
<td>Mitigation Measure</td>
<td>Affected Resource(s)</td>
<td>Implementation Task(s)</td>
<td>Schedule of Implementation</td>
<td>Implementation Responsibility</td>
<td>Record of Implementation</td>
<td>Verification and Record Keeping</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------</td>
<td>----------------------</td>
<td>------------------------</td>
<td>----------------------------</td>
<td>------------------------------</td>
<td>--------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>17</td>
<td>Offer artifacts removed from the viaduct during demolition to local museums, or other suitable facilities to be determined by the City. The accepting institutions shall arrange their own transportation to deliver the artifacts to designated locations.</td>
<td>Cultural Resources (MM 3-17)</td>
<td>3. Include the approved design in bid &amp; specification package. 4. Submit activity completion report to SHPO.</td>
<td>1. Final Design 2. Prior to demolition of the viaduct 3-4. During demolition of the viaduct</td>
<td>1. Design Consultant 2. Design Consultant 3. LABOE Construction Manager 4. LABOE BIP</td>
<td>1-3. Record of compliance including a copy of offer letters kept on file at LABOE BIP. 4. A copy of progress report to SHPO kept on file at LABOE BIP and Caltrans.</td>
<td>1-4. LABOE EMG</td>
</tr>
<tr>
<td>19</td>
<td>Retain a qualified paleontologist to develop and implement a Paleontological Monitoring Plan (PMP). Conduct paleontological monitoring onsite to inspect new exposures created by earth-moving activities in areas underlain by the older alluvium (area east of US 101) and at depths greater than 5 ft below current grade for the younger alluvium.</td>
<td>Paleontology (MM 3-19)</td>
<td>1. Engage a qualified paleontologist to prepare a PMP for implementation during ground-disturbing activities. 2. Include specific requirements of the PMP in bid &amp; specification package. 3. Monitor the site during soil disturbing activities.</td>
<td>1-2. Final design 3. During ground-disturbing activities</td>
<td>1. LABOE BIP 2. Design Consultant 3. Paleontological Consultant</td>
<td>1. Record of compliance kept on file at LABOE BIP. 2. Specific requirements included in bid and specification package. 3. Monitoring report prepared and signed by a qualified paleontologist kept on file at LABOE BIP</td>
<td>1-3. LABOE EMG</td>
</tr>
<tr>
<td>No.</td>
<td>Mitigation Measure</td>
<td>Affected Resource(s)</td>
<td>Implementation Task(s)</td>
<td>Schedule of Implementation</td>
<td>Implementation Responsibility</td>
<td>Record of Implementation</td>
<td>Verification and Record Keeping</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------</td>
<td>----------------------</td>
<td>------------------------</td>
<td>---------------------------</td>
<td>-----------------------------</td>
<td>--------------------------</td>
<td>-----------------------------</td>
</tr>
</tbody>
</table>
| 20  | To the extent applicable, implement fugitive dust source controls by requiring the contractor to:  
- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to active and inactive sites during workdays, weekends, holidays, and windy conditions.  
- Install wind fencing and phase grading operations, where appropriate, and operate water trucks for stabilization of surfaces under windy conditions. | Air quality (MM 3-20) | 1. Include the requirements in bid and specification package.  
2. Monitor to ensure the contractor complies with the requirements. | 1. Final design.  
2. During demolition and construction | 1. Design Consultant  
2. LABOE Construction Manager | 1-2. Record of compliance kept on file at LABOE BIP. | 1-2. LABOE EMG |
| 21  | To the extent applicable, implement mobile and stationary source controls by requiring the contractor to:  
- Reduce use, trips, and unnecessary idling from heavy equipment.  
- Maintain and tune engines per manufacturer’s specifications to perform at EPA certification levels, where applicable, and at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.  
- Prohibit any tampering with engines and adhere to manufacturer’s recommendation.  
- Lease new and clean equipment | Air quality (MM 3-21) | 1. Include the requirements in bid and specification package.  
2. Monitor to ensure the contractor complies with the requirements. | 1. Final design  
2. During demolition and construction | 1. Design Consultant  
2. LABOE Construction Manager | 1-2. Record of compliance kept on file at LABOE BIP. | 1-2. LABOE EMG |
<table>
<thead>
<tr>
<th>No.</th>
<th>Mitigation Measure</th>
<th>Affected Resource(s)</th>
<th>Implementation Task(s)</th>
<th>Schedule of Implementation</th>
<th>Implementation Responsibility</th>
<th>Record of Implementation</th>
<th>Verification and Record Keeping</th>
</tr>
</thead>
</table>
| 22  | Meeting the most stringent of applicable federal and state standards, if practicable.  
    • Utilize EPA-registered particulate traps and other appropriate controls, where suitable, to reduce emissions of particulate matter and other pollutants at the construction site. | Air quality (MM 3-22) | 1. Include the requirements in bid and specification package.  
2. Monitor to ensure the contractor complies with the requirements. | 1. Final design.  
2. During demolition and construction | 1. Design Consultant  
2. LABOE Construction Manager | 1-2. Record of compliance kept on file at LABOE BIP. | 1-2. LABOE EMG |
| 23  | Prevent possible damage and injury to migratory birds by scheduling the removal of vegetation (whether | Biological Resources | 1. Schedule non-native ornamental vegetation removal between September  
2. Pre-construction period. | 1-4. Pre-construction period. | 1. LABOE Construction Manager | 1-2. Record of compliance kept on file at LABOE BIP. | 1-5. LABOE EMG |
<table>
<thead>
<tr>
<th>No.</th>
<th>Mitigation Measure</th>
<th>Affected Resource(s)</th>
<th>Implementation Task(s)</th>
<th>Schedule of Implementation</th>
<th>Implementation Responsibility</th>
<th>Record of Implementation</th>
<th>Verification and Record Keeping</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>native or horticultural landscaping) in the project area between September 1 and January 31. If initial vegetation removal and ground clearance cannot be avoided between February 1 and August 31, a qualified biologist shall conduct a preconstruction survey of trees and shrubbery for active nests. If active nests of migratory species occur within the construction area, then a temporary exclusion fence 50 feet in diameter shall be assembled around the nest. The biologist shall then monitor the site of active nests during the construction activities. Once the biologist determines chicks have fledged or parents have abandoned the nest, the temporary fence can be removed and construction in such area can proceed. If bats are found, bat proofing (exclusion) will occur outside of the breeding season (October 30 through March 1) after juvenile bats have learned to fly; exclusion will be staged to ensure that roosting sites in areas not currently under construction will be available at all times during the project to minimize the potential effects on bats.</td>
<td>(MM 3-23)</td>
<td>1 and January 31. 2. Engaged a qualified biologist to conduct a preconstruction survey 3. Conduct a preconstruction survey 4. If the active nest is found, direct the construction contractor to install an exclusion fence. 5. Monitor the active nest during construction activities until the chicks have fledged.</td>
<td>5. During construction activity that occurs near the active nest location.</td>
<td>2 LABOE BIP 3-5. Biological Consultant</td>
<td>3-5. A survey report kept on file at LABOE.</td>
<td></td>
</tr>
</tbody>
</table>
Exhibit A
Mitigation Monitoring Report Form
## Project

### 6th Street Viaduct Seismic Improvement Project

<table>
<thead>
<tr>
<th>Mitigation Description:</th>
<th>Implementation Responsibility:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation Task:</th>
<th>Implementation Schedule:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Record of Implementation:</th>
<th>Start Date</th>
<th>Complete Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

The information contained in this report is an independent evaluation based on my personal observations and information provided to me. In accordance with Section 21081.6 of the California Public Resources Code, I hereby certify under penalty of perjury that the information contained herein is true and correct to the best of my knowledge.

Name of Person Completing Form: __________________________ Title: __________________________

Signature: ___________________________________________ Date Signed: ______________________

**VERIFICATION:**

Form Received by: __________________________ Signature: __________________________

Title: __________________________ Department/Division: __________________________ Date Rec’d: __________________

Compliance Acceptance: [ ] Yes [ ] No  Mitigation Completed: [ ] Yes [ ] No

Attach additional sheets if necessary.
This page intentionally left blank.
Appendix G
List of Acronyms and Abbreviations
## Appendix G  List of Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AADT</td>
<td>average annual daily traffic</td>
</tr>
<tr>
<td>AAM</td>
<td>annual arithmetic mean</td>
</tr>
<tr>
<td>AASHTO</td>
<td>American Association of State Highway and Transportation Officials</td>
</tr>
<tr>
<td>AB</td>
<td>Assembly Bill</td>
</tr>
<tr>
<td>AC</td>
<td>Advanced Construction</td>
</tr>
<tr>
<td>ACHP</td>
<td>Advisory Council on Historic Preservation</td>
</tr>
<tr>
<td>ACMs</td>
<td>asbestos-containing materials</td>
</tr>
<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
</tr>
<tr>
<td>ADL</td>
<td>aerially deposited lead</td>
</tr>
<tr>
<td>ADT</td>
<td>average daily traffic</td>
</tr>
<tr>
<td>AEP</td>
<td>Association of Environmental Professionals</td>
</tr>
<tr>
<td>AIR</td>
<td>Artists-in-Residence</td>
</tr>
<tr>
<td>ARB</td>
<td>Air Resources Board</td>
</tr>
<tr>
<td>APE</td>
<td>area of potential effects</td>
</tr>
<tr>
<td>AQMP</td>
<td>Air Quality Management Plan</td>
</tr>
<tr>
<td>ASR</td>
<td>Alkali Silica Reaction</td>
</tr>
<tr>
<td>ASTM</td>
<td>American Society for Testing and Materials</td>
</tr>
<tr>
<td>ATSAC</td>
<td>Automated Traffic Surveillance and Control</td>
</tr>
<tr>
<td>bgs</td>
<td>below ground surface</td>
</tr>
<tr>
<td>BHNC</td>
<td>Boyle Heights Neighborhood Council</td>
</tr>
<tr>
<td>BID</td>
<td>Business Improvement District</td>
</tr>
<tr>
<td>BMPs</td>
<td>best management practices</td>
</tr>
<tr>
<td>BNSF</td>
<td>Burlington Northern Santa Fe</td>
</tr>
<tr>
<td>°C</td>
<td>degrees Celsius</td>
</tr>
<tr>
<td>CAA</td>
<td>Clean Air Act</td>
</tr>
<tr>
<td>CAAAs</td>
<td>Clean Air Act Amendments</td>
</tr>
<tr>
<td>CAAQS</td>
<td>California Ambient Air Quality Standards</td>
</tr>
<tr>
<td>CAC</td>
<td>Community Advisory Committee</td>
</tr>
<tr>
<td>Cal-IPC</td>
<td>California Invasive Plant Council</td>
</tr>
<tr>
<td>Acronym</td>
<td>Full Form</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>Caltrans</td>
<td>California Department of Transportation</td>
</tr>
<tr>
<td>CARB</td>
<td>California Air Resources Board</td>
</tr>
<tr>
<td>CCAA</td>
<td>California Clean Air Act</td>
</tr>
<tr>
<td>CCAR</td>
<td>California Climate Action Registry</td>
</tr>
<tr>
<td>CCR</td>
<td>California Code of Regulations</td>
</tr>
<tr>
<td>CDFG</td>
<td>California Department of Fish and Game</td>
</tr>
<tr>
<td>CDMG</td>
<td>California Division of Mines and Geology</td>
</tr>
<tr>
<td>CEQ</td>
<td>Council on Environmental Quality</td>
</tr>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</td>
</tr>
<tr>
<td>CERCLIS</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act of 1980 Information Systems</td>
</tr>
<tr>
<td>CESA</td>
<td>California Endangered Species Act</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>cfs</td>
<td>cubic feet per second</td>
</tr>
<tr>
<td>CGS</td>
<td>California Geological Survey</td>
</tr>
<tr>
<td>CHL</td>
<td>California Historical Landmarks</td>
</tr>
<tr>
<td>CHRI</td>
<td>California Historic Resources Inventory</td>
</tr>
<tr>
<td>CHRIS</td>
<td>California Historical Resources Information System</td>
</tr>
<tr>
<td>CIP</td>
<td>cast-in-place</td>
</tr>
<tr>
<td>City</td>
<td>City of Los Angeles</td>
</tr>
<tr>
<td>CNEL</td>
<td>community noise equivalent level</td>
</tr>
<tr>
<td>CNPS</td>
<td>California Native Plant Society</td>
</tr>
<tr>
<td>CO</td>
<td>carbon monoxide</td>
</tr>
<tr>
<td>CO₂</td>
<td>carbon dioxide</td>
</tr>
<tr>
<td>COM</td>
<td>commercial</td>
</tr>
<tr>
<td>CPHI</td>
<td>California Points of Historical Interest</td>
</tr>
<tr>
<td>CRA/LA</td>
<td>Community Redevelopment Agency of the City of Los Angeles</td>
</tr>
<tr>
<td>CRHR</td>
<td>California Register of Historical Resources</td>
</tr>
<tr>
<td>CTC</td>
<td>California Transportation Commission</td>
</tr>
<tr>
<td>CWA</td>
<td>Clean Water Act</td>
</tr>
<tr>
<td>dB</td>
<td>decibel</td>
</tr>
<tr>
<td>Acronym</td>
<td>Definition</td>
</tr>
<tr>
<td>---------</td>
<td>------------</td>
</tr>
<tr>
<td>dBA</td>
<td>A-weighted decibel</td>
</tr>
<tr>
<td>D/C</td>
<td>demand-to-capacity (ratio)</td>
</tr>
<tr>
<td>DE</td>
<td>diesel exhaust</td>
</tr>
<tr>
<td>DLANC</td>
<td>Downtown Los Angeles Neighborhood Council</td>
</tr>
<tr>
<td>DOT</td>
<td>United States Department of Transportation</td>
</tr>
<tr>
<td>DPM</td>
<td>diesel particulate matter</td>
</tr>
<tr>
<td>DRIR</td>
<td>Draft Relocation Impact Report</td>
</tr>
<tr>
<td>EB</td>
<td>eastbound</td>
</tr>
<tr>
<td>EBL</td>
<td>Eligible Bridge List</td>
</tr>
<tr>
<td>EFS</td>
<td>Environmental FirstSearch</td>
</tr>
<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
</tr>
<tr>
<td>EIS</td>
<td>Environmental Impact Statement</td>
</tr>
<tr>
<td>EPA</td>
<td>United States Environmental Protection Agency</td>
</tr>
<tr>
<td>ERNS</td>
<td>Emergency Response and Notification System</td>
</tr>
<tr>
<td>ESA</td>
<td>environmentally sensitive area</td>
</tr>
<tr>
<td>°F</td>
<td>degrees Fahrenheit</td>
</tr>
<tr>
<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
</tr>
<tr>
<td>FESA</td>
<td>Federal Endangered Species Act</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>FIMAP</td>
<td>Fire Insurance Map</td>
</tr>
<tr>
<td>FINDS</td>
<td>Facility Index System</td>
</tr>
<tr>
<td>FOE</td>
<td>Finding of Effect</td>
</tr>
<tr>
<td>FRA</td>
<td>Federal Railroad Administration</td>
</tr>
<tr>
<td>ft</td>
<td>feet/foot</td>
</tr>
<tr>
<td>FTA</td>
<td>Federal Transit Administration</td>
</tr>
<tr>
<td>GHG</td>
<td>greenhouse gas</td>
</tr>
<tr>
<td>GIS</td>
<td>geographic information system</td>
</tr>
<tr>
<td>GWP</td>
<td>global warming potential</td>
</tr>
<tr>
<td>HABS</td>
<td>Historic American Building Survey</td>
</tr>
<tr>
<td>HAER</td>
<td>Historic American Engineering Record</td>
</tr>
<tr>
<td>HAPs</td>
<td>hazardous air pollutants</td>
</tr>
<tr>
<td>HBP</td>
<td>Highway Bridge Program</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>HCM</td>
<td>Historic-Cultural Monument</td>
</tr>
<tr>
<td>HHS</td>
<td>U.S. Department of Health and Human Services</td>
</tr>
<tr>
<td>HMIRS</td>
<td>Hazardous Material Incident Report System</td>
</tr>
<tr>
<td>HPSR</td>
<td>Historic Property Survey Report</td>
</tr>
<tr>
<td>HRER</td>
<td>Historical Resources Evaluation Report</td>
</tr>
<tr>
<td>HSSC</td>
<td>Historical Society of Southern California</td>
</tr>
<tr>
<td>Hz</td>
<td>hertz</td>
</tr>
<tr>
<td>I-5</td>
<td>Interstate 5</td>
</tr>
<tr>
<td>I-10</td>
<td>Interstate 10</td>
</tr>
<tr>
<td>IGR</td>
<td>Intergovernmental Review</td>
</tr>
<tr>
<td>ILUP</td>
<td>Industrial Land Use Policy</td>
</tr>
<tr>
<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
</tr>
<tr>
<td>IRIS</td>
<td>Integrated Risk Information System</td>
</tr>
<tr>
<td>ISA</td>
<td>Initial Site Assessment</td>
</tr>
<tr>
<td>ISTEIA</td>
<td>Intermodal Surface Transportation Efficiency Act</td>
</tr>
<tr>
<td>kV</td>
<td>kilovolt</td>
</tr>
<tr>
<td>LAANE</td>
<td>Los Angeles Alliance for a New Economy</td>
</tr>
<tr>
<td>LABOE</td>
<td>City of Los Angeles Bureau of Engineering</td>
</tr>
<tr>
<td>LAC</td>
<td>Los Angeles Conservancy</td>
</tr>
<tr>
<td>LACDA</td>
<td>Los Angeles County Drainage Analysis</td>
</tr>
<tr>
<td>LACDPW</td>
<td>Los Angeles County Department of Public Works</td>
</tr>
<tr>
<td>LADOT</td>
<td>Los Angeles Department of Transportation</td>
</tr>
<tr>
<td>LADWP</td>
<td>Los Angeles Department of Water and Power</td>
</tr>
<tr>
<td>LAFD</td>
<td>Los Angeles Fire Department</td>
</tr>
<tr>
<td>LAPD</td>
<td>Los Angeles Police Department</td>
</tr>
<tr>
<td>LARRMP</td>
<td>Los Angeles River Revitalization Master Plan</td>
</tr>
<tr>
<td>LBP</td>
<td>lead-based paint</td>
</tr>
<tr>
<td>lbs/day</td>
<td>pounds per day</td>
</tr>
<tr>
<td>LBSRA</td>
<td>Local Bridge Seismic Retrofit Account</td>
</tr>
<tr>
<td>L_{eq}</td>
<td>equivalent sound level</td>
</tr>
<tr>
<td>L_{max}</td>
<td>maximum sound level</td>
</tr>
<tr>
<td>LOS</td>
<td>level of service</td>
</tr>
<tr>
<td>Acronym</td>
<td>Definition</td>
</tr>
<tr>
<td>---------</td>
<td>------------</td>
</tr>
<tr>
<td>LP</td>
<td>sound pressure level</td>
</tr>
<tr>
<td>LST</td>
<td>localized significance threshold</td>
</tr>
<tr>
<td>LT</td>
<td>long-term</td>
</tr>
<tr>
<td>Lx</td>
<td>percentile exceeded sound level</td>
</tr>
<tr>
<td>MCE</td>
<td>maximum credible earthquake</td>
</tr>
<tr>
<td>MFR</td>
<td>multiple-family residential</td>
</tr>
<tr>
<td>mg/kg</td>
<td>milligrams per kilogram</td>
</tr>
<tr>
<td>mg/L</td>
<td>milligrams per liter</td>
</tr>
<tr>
<td>μg/L</td>
<td>micrograms per liter</td>
</tr>
<tr>
<td>mg/m³</td>
<td>milligrams per cubic meter</td>
</tr>
<tr>
<td>μg/m³</td>
<td>micrograms per cubic meter</td>
</tr>
<tr>
<td>MIBK</td>
<td>4-methyl-2-pentanone</td>
</tr>
<tr>
<td>MLD</td>
<td>most likely descendent</td>
</tr>
<tr>
<td>MOA</td>
<td>Memorandum of Agreement</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>mph</td>
<td>miles per hour</td>
</tr>
<tr>
<td>MPO</td>
<td>Metropolitan Planning Organization</td>
</tr>
<tr>
<td>MSATs</td>
<td>mobile source air toxics</td>
</tr>
<tr>
<td>msl</td>
<td>mean sea level</td>
</tr>
<tr>
<td>MTA</td>
<td>Metropolitan Transportation Authority</td>
</tr>
<tr>
<td>NAAQS</td>
<td>National Ambient Air Quality Standards</td>
</tr>
<tr>
<td>NAC</td>
<td>noise abatement criteria</td>
</tr>
<tr>
<td>NAHC</td>
<td>Native American Heritage Commission</td>
</tr>
<tr>
<td>NATA</td>
<td>National Air Toxics Assessment</td>
</tr>
<tr>
<td>NB</td>
<td>northbound</td>
</tr>
<tr>
<td>NCDB</td>
<td>National Compliance Database System</td>
</tr>
<tr>
<td>NCPP</td>
<td>New Community Plan Program</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Policy Act</td>
</tr>
<tr>
<td>NES</td>
<td>Natural Environment Study</td>
</tr>
<tr>
<td>NESHAP</td>
<td>National Emission Standards for Hazardous Air Pollutants</td>
</tr>
<tr>
<td>NFRAP</td>
<td>No Further Remedial Action Planned</td>
</tr>
<tr>
<td>NHPA</td>
<td>National Historic Preservation Act of 1966</td>
</tr>
<tr>
<td>Acronym</td>
<td>Definition</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>NO₂</td>
<td>nitrogen dioxide</td>
</tr>
<tr>
<td>NOA</td>
<td>naturally occurring asbestos</td>
</tr>
<tr>
<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
</tr>
<tr>
<td>NOC</td>
<td>Notice of Completion</td>
</tr>
<tr>
<td>NOI</td>
<td>Notice of Intent</td>
</tr>
<tr>
<td>NOP</td>
<td>Notice of Preparation</td>
</tr>
<tr>
<td>NOS</td>
<td>North Outfall Sewer</td>
</tr>
<tr>
<td>NOₓ</td>
<td>nitrogen oxides</td>
</tr>
<tr>
<td>NPDES</td>
<td>National Pollutant Discharge Elimination System</td>
</tr>
<tr>
<td>NPL</td>
<td>National Priorities List</td>
</tr>
<tr>
<td>NPS</td>
<td>National Park Service</td>
</tr>
<tr>
<td>NRHP</td>
<td>National Register of Historic Places</td>
</tr>
<tr>
<td>O₃</td>
<td>ozone</td>
</tr>
<tr>
<td>PA</td>
<td>Programmatic Agreement</td>
</tr>
<tr>
<td>PADS</td>
<td>Polychlorinated Biphenyls Activity Data System</td>
</tr>
<tr>
<td>Pb</td>
<td>lead</td>
</tr>
<tr>
<td>PBA</td>
<td>peak bedrock acceleration</td>
</tr>
<tr>
<td>PCBs</td>
<td>polychlorinated biphenyls</td>
</tr>
<tr>
<td>PDT</td>
<td>Project Development Team</td>
</tr>
<tr>
<td>PGA</td>
<td>peak ground acceleration</td>
</tr>
<tr>
<td>PM</td>
<td>particulate matter</td>
</tr>
<tr>
<td>PM₂₅</td>
<td>particulate matter less than 2.5 microns in diameter</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>particulate matter less than 10 microns in diameter</td>
</tr>
<tr>
<td>PMP</td>
<td>Paleontological Mitigation Plan</td>
</tr>
<tr>
<td>ppm</td>
<td>parts per million</td>
</tr>
<tr>
<td>POAQC</td>
<td>Projects of Air Quality Concern</td>
</tr>
<tr>
<td>PQS</td>
<td>professionally qualified staff</td>
</tr>
<tr>
<td>PPV</td>
<td>peak particle velocity</td>
</tr>
<tr>
<td>PRC</td>
<td>Public Resources Code</td>
</tr>
<tr>
<td>PRG</td>
<td>preliminary remediation goal</td>
</tr>
<tr>
<td>RAP</td>
<td>Relocation Assistance Program</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation and Recovery Act of 1976</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>RCRA COR</td>
<td>Resource Conservation and Recovery Correction Action Site</td>
</tr>
<tr>
<td>RCRA GEN</td>
<td>Resource Conservation and Recovery Generators</td>
</tr>
<tr>
<td>RCRA NLR</td>
<td>Resource Conservation and Recovery Sites</td>
</tr>
<tr>
<td>RCRA TSD</td>
<td>Resource Conservation and Recovery Treatment, Disposal, and Storage Site</td>
</tr>
<tr>
<td>REC</td>
<td>recognized environmental condition</td>
</tr>
<tr>
<td></td>
<td>recreational</td>
</tr>
<tr>
<td>REG UST/AST</td>
<td>Registered Underground Storage Tank/Aboveground Storage Tank</td>
</tr>
<tr>
<td>ROW</td>
<td>right-of-way</td>
</tr>
<tr>
<td>RTIP</td>
<td>Regional Transportation Improvement Program</td>
</tr>
<tr>
<td>RTP</td>
<td>Regional Transportation Plan</td>
</tr>
<tr>
<td>RWQCB</td>
<td>Regional Water Quality Control Board</td>
</tr>
<tr>
<td>SAFETEA-LU</td>
<td>Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users</td>
</tr>
<tr>
<td>SB</td>
<td>southbound</td>
</tr>
<tr>
<td>SCAB or Basin</td>
<td>South Coast Air Basin</td>
</tr>
<tr>
<td>SCAG</td>
<td>Southern California Association of Governments</td>
</tr>
<tr>
<td>SCAQMD</td>
<td>South Coast Air Quality Management District</td>
</tr>
<tr>
<td>SCCIC</td>
<td>South Central Coastal Information Center</td>
</tr>
<tr>
<td>SCH</td>
<td>school</td>
</tr>
<tr>
<td>SCRRA</td>
<td>Southern California Regional Rail Authority</td>
</tr>
<tr>
<td>SFR</td>
<td>single-family residential</td>
</tr>
<tr>
<td>SHPO</td>
<td>State Historic Preservation Officer</td>
</tr>
<tr>
<td>SIP</td>
<td>State Implementation Plan</td>
</tr>
<tr>
<td>SO₂</td>
<td>sulfur dioxide</td>
</tr>
<tr>
<td>SRA</td>
<td>source receptor area</td>
</tr>
<tr>
<td>ST</td>
<td>short-term</td>
</tr>
<tr>
<td>STIP</td>
<td>Statewide Transportation Improvement Program</td>
</tr>
<tr>
<td>SUSMP</td>
<td>Standard Urban Stormwater Mitigation Plan</td>
</tr>
<tr>
<td>SVOCs</td>
<td>semivolatile organic compounds</td>
</tr>
<tr>
<td>SWL</td>
<td>solid waste landfill</td>
</tr>
<tr>
<td>SWPPP</td>
<td>Storm Water Pollution Prevention Plan</td>
</tr>
<tr>
<td>SWRCB</td>
<td>State Water Resources Control Board</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>TACs</td>
<td>toxic air contaminants</td>
</tr>
<tr>
<td>TCMs</td>
<td>Transportation Control Measures</td>
</tr>
<tr>
<td>TCWG</td>
<td>Transportation Conformity Working Group</td>
</tr>
<tr>
<td>TDM</td>
<td>Transportation Demand Management</td>
</tr>
<tr>
<td>TDS</td>
<td>total dissolved solids</td>
</tr>
<tr>
<td>TMP</td>
<td>Traffic Management Plan</td>
</tr>
<tr>
<td>TOG</td>
<td>total organic gas</td>
</tr>
<tr>
<td>TPH</td>
<td>total petroleum hydrocarbon</td>
</tr>
<tr>
<td>TRIS</td>
<td>Toxic Release Inventory System</td>
</tr>
<tr>
<td>TSM</td>
<td>Transportation System Management</td>
</tr>
<tr>
<td>TTLC</td>
<td>total toxic limit concentration</td>
</tr>
<tr>
<td>UPRR</td>
<td>Union Pacific Railroad</td>
</tr>
<tr>
<td>US 101</td>
<td>Hollywood Freeway</td>
</tr>
<tr>
<td>USACE</td>
<td>United States Army Corps of Engineers</td>
</tr>
<tr>
<td>USFWS</td>
<td>United States Fish and Wildlife Service</td>
</tr>
<tr>
<td>USGS</td>
<td>United States Geological Survey</td>
</tr>
<tr>
<td>UST</td>
<td>underground storage tank</td>
</tr>
<tr>
<td>V/C</td>
<td>volume to capacity ratio</td>
</tr>
<tr>
<td>VMT</td>
<td>vehicle miles traveled</td>
</tr>
<tr>
<td>VOC</td>
<td>volatile organic compound</td>
</tr>
<tr>
<td>WATCP</td>
<td>Work Area Traffic Control Plan</td>
</tr>
<tr>
<td>WB</td>
<td>westbound</td>
</tr>
</tbody>
</table>
Appendix H
References
Appendix H  References


California Employment Development Department. 2007.


Appendix H References


CDFG. 2011. California Department of Fish and Game. California Natural Diversity Database.


City of Los Angeles, 2006. Los Angeles CEQA Thresholds Guide.


——. 2007, *Bridge Type Selection Structure Type Screening Phase*. October.

Dieselnet. 2007, United States Emission Standards. Web site:  
http://www.dieselnet.com/standards/us/


Appendix H References


USDOT. 1998.


Appendix I
List of Technical Studies
Appendix I  List of Technical Studies  (bound separately)

- Initial Site Assessment, 2008 and validated 2011.
- Paleontological Study, 2009 and validated 2011.
This page intentionally left blank.
Appendix J
Section 6002 Coordination Plan
SAFETEA-LU 6002 COORDINATION PLAN
6TH STREET VIADUCT IMPROVEMENT PROJECT
Contents

Section 1. Lead/Cooperating/Participating Agencies ........................................1
  1.1 Agency Definitions and List of Agencies .............................................1
  1.2 Agency Expectations ........................................................................3
Section 2. Agency Coordination .................................................................5
  2.1 Coordination Points, Information Requirements and Responsibilities5
  2.2 EIS Advisory Committee ....................................................................5
Section 3. Project Schedule .........................................................................6
Section 4. Issues Resolution Process .........................................................7
Section 5. Revision History .........................................................................8
Appendix A- Participating and Cooperating Agency Invitation Original Mailing List
Section 1. Lead/Cooperating/Participating Agencies

As one of the requirements under Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Act: a Legacy for Users (SAFETEA-LU), all transportation projects requiring an EIS, for which the original Notice of Intent was published in the Federal Register after August 10, 2005, must have a plan established for coordinating public and agency participation and comment during the environmental review process. It is the responsibility of the lead agencies to develop the coordination plan to facilitate and document the interaction between the lead agencies and participating and cooperating agencies and the public.

As of July 1, 2007, California Department of Transportation (Caltrans) has assumed Federal Highway Administration’s (FHWA) authority and responsibility for compliance with NEPA and other environmental laws. The Memorandum of Understanding (MOU) between the Federal Highway Administration and California Department of Transportation concerning the State of California’s Participation in the Surface Transportation Project Delivery Pilot Program allows Caltrans to serve as the Federal lead agency on this project.

Appendix A, the original list of the federal, state and local agencies that were invited to become Cooperating and Participating agencies, is attached at the end of the plan. On July 26, 2007, federal, state and local agencies were sent an invitation letter asking to become Cooperating and Participating agencies for this project.

In response to the invitation letter, no cooperating agencies were identified. In addition, below is a list of agencies that agreed to be participating agencies in the environmental review process.

1.1 Agency Definitions and List of Agencies

Federal Lead Agency: The agency conducting the NEPA analysis.

<table>
<thead>
<tr>
<th>Federal Lead Agency</th>
<th>Contact Person/Title</th>
<th>Phone/Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>California Department of Transportation</td>
<td>Carlos Montez</td>
<td>(213) 897-9116</td>
</tr>
<tr>
<td>(Caltrans)</td>
<td>Senior Environmental Planner</td>
<td><a href="mailto:Carlos_Montez@dot.ca.gov">Carlos_Montez@dot.ca.gov</a></td>
</tr>
<tr>
<td>100 South Main Street</td>
<td>David Lewis</td>
<td>(213) 897-2860</td>
</tr>
<tr>
<td>Mail Stop 16A</td>
<td>Environmental Planner</td>
<td><a href="mailto:David_Lewis@dot.ca.gov">David_Lewis@dot.ca.gov</a></td>
</tr>
<tr>
<td>Los Angeles, CA 90012</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cooperating Agencies: Federal agencies, other than the Federal Lead Agency, who have jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative. Cooperating agencies are also participating agencies.

No cooperating agencies were identified for this project.

Participating Agencies: Federal, state, regional or local agencies that have an interest in the project.

<table>
<thead>
<tr>
<th>Participating Agencies</th>
<th>Contact Person/Title</th>
<th>Phone/Email/Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States Army Corps of Engineers</td>
<td>Theodore Masigat</td>
<td>(213) 452-3393</td>
</tr>
<tr>
<td></td>
<td>Engineering Division, Operations,</td>
<td><a href="mailto:theodore.j.masigat@usace.army.mil">theodore.j.masigat@usace.army.mil</a></td>
</tr>
<tr>
<td></td>
<td>Los Angeles District</td>
<td>915 Wilshire Blvd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Los Angeles, CA 90017</td>
</tr>
<tr>
<td>Participating Agencies</td>
<td>Contact Person/Title</td>
<td>Phone/Email/Address</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>United States Army Corps of Engineers</td>
<td>Phuong Trinh Regulatory Division, Los Angeles District</td>
<td>(213) 452-3372 <a href="mailto:Phuong.h.trinh@usace.army.mil">Phuong.h.trinh@usace.army.mil</a> 915 Wilshire Blvd Los Angeles, CA 90017</td>
</tr>
<tr>
<td>United States Army Corps of Engineers</td>
<td>Gabe Brooks Right-of-Way Division, Los Angeles District</td>
<td>915 Wilshire Blvd Los Angeles, CA 90017</td>
</tr>
<tr>
<td>United States Army Corps of Engineers</td>
<td>Ken Wong Permits, Los Angeles District</td>
<td>915 Wilshire Blvd Los Angeles, CA 90017</td>
</tr>
<tr>
<td>United States Environmental Protection Agency</td>
<td>Susan Sturges Environmental Review Office Community and Ecosystems Division</td>
<td>(415) 947-4188 <a href="mailto:sturges.susan@epa.gov">sturges.susan@epa.gov</a> 75 Hawthorne Street San Francisco, CA 94105</td>
</tr>
<tr>
<td>Advisory Council on Historic Preservation</td>
<td>Carol Legard Federal Highway Liaison Office of Federal Agency Programs</td>
<td>(202) 606-8522 <a href="mailto:clegard@achp.gov">clegard@achp.gov</a> 1100 Pennsylvania Avenue NW Suite 805 Old Post Office Bldg Washington DC 20004</td>
</tr>
<tr>
<td>US Department of Housing and Urban Development Los Angeles Field Office</td>
<td>William Vasquez, CPD Field Office Director</td>
<td>611 West 6th Street, Suite 800 Los Angeles, CA 90017</td>
</tr>
<tr>
<td>US Department of Commerce</td>
<td>Environmental Review Section</td>
<td>14th and Constitution NW, Room 6800 Washington DC 20230</td>
</tr>
<tr>
<td>US Department of Energy Environmental Review Section</td>
<td>Environmental Review Section</td>
<td>1000 Independence Ave SW 4G-064 Washington DC 20585</td>
</tr>
<tr>
<td>Federal Railroad Administration Office of Railroad Development</td>
<td>David Valenstein</td>
<td>400 Seventh St SW MS20 Washington DC 20590</td>
</tr>
<tr>
<td>City of Los Angeles Department of Parks and Recreation</td>
<td>David Attaway, Environmental Supervisor</td>
<td>(213) 928-9130 4155 S. Saint Louis Street Los Angeles, CA 90033</td>
</tr>
<tr>
<td>City of Los Angeles Bureau of Engineering Real Estate Group</td>
<td>Frank Viramontes, Chief Real Estate Officer II</td>
<td>(213) 485-5447 <a href="mailto:frank.viramontes@la.city.gov">frank.viramontes@la.city.gov</a> Department of Public Works, Bureau of Engineering Real Estate Division 600 S. Spring Street, 7th Floor, Stop 515 Los Angeles, CA 90014</td>
</tr>
<tr>
<td>Los Angeles County Metropolitan Transportation Authority</td>
<td>John C. Miller, P.E. Engineering Project Manager</td>
<td>(213) 922-2000 <a href="mailto:millerjo@mta.net">millerjo@mta.net</a> 1 Gateway Plaza Mail Stop: 99-22-1 Los Angeles, CA 90012-2932</td>
</tr>
<tr>
<td>SCRRRA—Metrolink</td>
<td>Laurene Lopez Community Relations/ Environmental Review Administrator</td>
<td>(213) 452-0288 <a href="mailto:lopezl@scrra.net">lopezl@scrra.net</a> SCRRRA—Metrolink 700 South Flower Street, 26th Floor Los Angeles, CA 90017</td>
</tr>
</tbody>
</table>

* Federal agency did not respond to the letter of invitation to become a participating agency.
Per SAFETEA-LU, a Federal agency invited shall be designated as a participating agency unless the agency declines the invitation by the deadline specified, and states that the agency (1) has no jurisdiction or authority with respect to the project, (2) has no expertise or information relevant to the project, and (3) does not intend to submit comments on the project.

1.2 Agency Expectations

The expectations for the Lead Agency are:

- Prepare the EIS in accordance with 23 CFR 771, 40 CFR 1500-1508 and SAFETEA-LU.
- Take actions necessary to facilitate the expedited review of the environmental review process.
- Identify and involve cooperating and participating agencies.
- Develop a coordination plan and provide the plan to participating and cooperating agencies.
- Provide, as early as practicable but no later than the appropriate project milestone, project information on purpose and need, environmental resources, alternatives and proposed methodologies.
- Provide oversight in managing the process and resolving issues.
- The Lead Agency (Caltrans) will have ultimate responsibility for:
  1. Review and adoption of a NEPA document.
  2. Implementation of design and mitigation commitments.

The expectations for Cooperating Agencies are:

- Timely review and comment on the pre-draft or pre-final environmental documents to reflect the views and concerns of your agency on the adequacy of the document, purpose and need statements, alternatives considered, and the anticipated impacts and mitigation. Written comments by email or letter should be submitted to Caltrans Environmental within allocated time frame.
- Identify as early as practicable any issue of concern regarding the projects environmental or socioeconomic impacts.
- Identify as early as practicable any issues that could substantially delay or prevent the granting of a permit or other approval needed for the project.
- Share information that may be useful to the lead agency (Caltrans), cooperating and participating agencies.
- Participate in coordination meetings and joint field reviews as appropriate.
- Assume on request of the lead agency (Caltrans) responsibility for developing information and preparing environmental analysis including portions of the EIS over which that cooperating agency has special expertise.
- May adopt without recirculating the EIS of the lead agency (Caltrans) when, after an independent review of the statement, the cooperating agency concludes that its comments and suggestions have been satisfied.
- Make support staff available at the lead agency (Caltrans) request.
- Use own resources and funds.
The expectations for Participating Agencies are:

- Participation in the NEPA process starting at the earliest possible time, especially with regard to the development of the purpose and need statement, range of alternatives, methodologies, and the level of detail for the analysis of alternatives.
- Timely review and comment on the pre-draft or pre-final environmental documents to reflect the views and concerns of your agency on the adequacy of the document, purpose and need statements, alternatives considered, and the anticipated impacts and mitigation. Written comments by email or letter should be submitted to Caltrans Environmental within allocated time frame.
- Identify as early as practicable any issue of concern regarding the project's environmental or socioeconomic impacts.
- Identify as early as practicable any issues that could substantially delay or prevent the granting of a permit, delay completion of the environmental process, or other approval needed for the project.
- Share information that may be useful to the lead agency (Caltrans), cooperating and participating agencies.
- Provide input on purpose and need, methodologies, alternatives within 15 days of receipt thereof.
- Respond affirmatively in writing to the letter of invitation (for non-federal agencies) within 30 days of receipt.
- Respond in writing to the letter of invitation if you wish to decline the invitation (for federal agencies) within 30 days of receipt.
- Participate in coordination meetings and joint field reviews as appropriate.
- Participate as needed in Issues Resolution Process.
- Use own resources and funds.
Section 2. Agency Coordination

2.1 Coordination Points, Information Requirements and Responsibilities

Caltrans, as the lead agency, will adhere to the following coordination with Participating and Cooperating Agencies:

- Request for review of the project purpose and need (Response by the agencies to be provided within 15 days of receipt of project materials).

- Provide pertinent information about environmental and socioeconomic resources in the area. This information includes identification of resources located within project area and general location of alternatives, and will be provided by written correspondence or in a meeting. Agencies will identify any issues that could substantially delay permit or other approval needed for the project, and respond to the lead agency within 15 days of receipt of project materials.

- Review of the following information related to alternatives:
  1. Proposed range of alternatives
  2. Proposed methodologies for screening of alternatives
  3. Proposed Draft EIS alternatives
  4. Proposed Recommended Preferred Alternative

  This information will be provided in meetings and/or by written correspondence. Responses will be provided to the lead agency about each of these within 15 days of receipt of project materials.

- Provide Pre-Draft EIS (Response to be provided within 30 days of receipt of project materials).

2.2 EIS Advisory Committee

A project EIS Advisory Committee, consisting of representatives from each of the Cooperating and Participating Agencies, will be formed to guide and oversee the process. The EIS Advisory Committee will make recommendations to the Lead Agency based on their roles and responsibilities as outlined above. The EIS Advisory Committee will be moderated by the lead agency. Participation in the committee will consist of attending relevant meetings and providing timely review and comment of the proposed project documentation and methodologies.
# Section 3. Project Schedule

The following schedule is proposed:

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Initiation Date</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose and Need</td>
<td>November 2007</td>
<td>EIS Coordinating/Participating Agency Meeting #1 (October 31(^{st}), 2007): Caltrans provided the EIS Advisory Committee with draft purpose and need statement. Meeting also included discussion on the following topics: Description of roles and responsibilities of EIS Advisory Committee members, Coordination Plan, description of project and schedule, and discussion of purpose and need.</td>
</tr>
<tr>
<td>Range of Alternatives</td>
<td>November 2007</td>
<td>EIS Advisory Committee Meeting #1 (October 31(^{st}), 2007): Caltrans provided the EIS Advisory Committee with information regarding alternatives being considered. Additionally, a description of the process and outcome of alignment and design alternatives proposed by the Project Development Team for further study including input from an expert panel and Community Advisory Committee (CAC).</td>
</tr>
<tr>
<td>Collaboration on impact assessment methodologies</td>
<td>February 2008</td>
<td>EIS Advisory Committee Meeting #2 (February 4, 2008): Caltrans discussed the technical studies being conducted and the level of detail required in the analysis of the alternatives.</td>
</tr>
<tr>
<td>Socioeconomic and environmental impacts</td>
<td>February 2008</td>
<td>EIS Advisory Committee Meeting #2 (February 4, 2008): Caltrans identified the resources located within project area and the general location of alternatives. EIS Advisory Committee will be asked to identify any issues that could substantially delay the project.</td>
</tr>
<tr>
<td>Alkali Silica Reaction Workshop and Project Alternative Analysis</td>
<td>October 2008</td>
<td>EIS Advisory Committee Meeting #3 (October 20, 2008): Caltrans discussed the project alternatives, ASR workshop and the environmental analysis results. Only one participating agency attended this meeting.</td>
</tr>
<tr>
<td>Circulation of DEIS</td>
<td>June 2009</td>
<td>Caltrans will provide the Draft EIS for review by written correspondence. The comment period is 60 days.</td>
</tr>
<tr>
<td>Agency Public Hearing</td>
<td>July 2009</td>
<td>Caltrans held an Agency Public Meeting on July 14, 2009 to discuss the release of the Draft EIS</td>
</tr>
<tr>
<td>2 Community Public Hearings</td>
<td>July 2009</td>
<td>Caltrans and the City of Los Angeles held 2 Public Meetings on July 14(^{th}) and July 21(^{st}) to discuss the release of the Draft EIS.</td>
</tr>
<tr>
<td>Selection of Preferred Alternative</td>
<td>October 2009</td>
<td>The PDT held a workshop after the close of the Draft EIR/EIS public comment period to identify a preferred alternative. Four alignments and seven bridge designs were considered. The evaluation for selecting the Bridge Structure and Alignment included criteria based on several factors. Sensitivity tests were then performed by weighting the scoring criteria from different perspectives, based on the anticipated interests of various groups of stakeholders. The PDT members concluded that Bridge Concept 4A on Alignment 3B is the preferred alternative. This is discussed in more detail in Chapter 2 of Final EIS.</td>
</tr>
<tr>
<td>Final EIS</td>
<td>Spring/Summer</td>
<td>Anticipated approval of the Final EIS is in Spring/Summer 2010</td>
</tr>
<tr>
<td>Record of Decision</td>
<td>Summer/Fall</td>
<td>Anticipated approval of the ROD is Summer/Fall 2010</td>
</tr>
</tbody>
</table>
Section 4. Issues Resolution Process

SAFETEA-LU provides a formal process for resolving serious issues that may delay the project or result in a denial of a required approval for the project. An issue of concern is any issue that could delay the project or could prevent an agency from granting a permit or other approval that is needed for the project. Resolution of the issue of concern means that the agencies involved agree on how to proceed so that they are able to reach decisions on matters within their authority.

The Lead Agency and the EIS Advisory Committee shall work cooperatively in accordance with this section to identify, as early as possible, any issues of concern. The following process will be followed:

- Meetings will be held as needed during the environmental review process to discuss and resolve issues notably during the scoping process, technical report review, and prior to the circulation of the Draft EIS.

- Initial correspondence and relevant comments and information on the purpose and need and alternatives analysis will be included in the 6th Street Viaduct Improvement Project Scoping Report.

- If issues are not resolved in a timely manner:
  1. The Federal Lead Agency (Caltrans) will contact relevant participating agencies to determine if any information necessary to resolve issue is lacking and obtain all the necessary information.
  2. Caltrans will schedule an official issues resolution meeting.
  3. If no resolution can be achieved within 30 days of the meeting, then
  4. Caltrans will draft notification including: project description, details of issue(s) that could not be resolved, names of agencies invited and that actually participated in meeting, date of meeting, and determination that resolution could not be reached.
  5. Caltrans will send notification to the heads of all Participating and Cooperating Agencies, the Governor, appropriate Senate and House Committees, and the Council of Environmental Quality.
  6. Caltrans will publish such notice in the Federal Register.
Section 5. Revision History

This section is reserved for changes to the Coordination Plan.

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd</td>
<td>1-29-08</td>
<td>Section 1.1 Agency Definitions and List of Agencies</td>
<td>Per response letter dated January 14, 2008 from the Army Corps of Engineers Regulatory Division, the Corps has declined the offer to become a participating/cooperating agency but has accepted to become a participating agency for this project. This supercedes the previous classification for the Corps' operations and regulatory sections as participating and cooperating agencies.</td>
</tr>
<tr>
<td>2nd</td>
<td>1-29-08</td>
<td>Section 3 Project Schedule</td>
<td>The coordination plan meeting has been scheduled for February 4, 2008 at Caltrans, instead of January 2008 as was originally noted.</td>
</tr>
<tr>
<td>3rd</td>
<td>2/23/09</td>
<td>Appendix A</td>
<td>We only list the participating agencies that accepted our invitation. In Appendix A, we are including a list of all the federal, state and local agencies that were originally invited to become a cooperating or participating agency.</td>
</tr>
<tr>
<td>3rd</td>
<td>2/23/09</td>
<td>Project Schedule</td>
<td>Updated the target date for Draft EIR/EIS release to agencies and public for review and comment. Also changed the comment period to 60 days per Caltrans management decision.</td>
</tr>
<tr>
<td>4th</td>
<td>July 2009</td>
<td>Project Schedule</td>
<td>Updated Project Schedule. Caltrans held 3 Public Hearings for the Draft EIR/EIS</td>
</tr>
<tr>
<td>5th</td>
<td>October 2009</td>
<td>Project Schedule</td>
<td>The PDT held a workshop after the close of the Draft EIR/EIS public comment period to select a preferred alternative.</td>
</tr>
<tr>
<td>6th</td>
<td>March 2010</td>
<td>Project Schedule</td>
<td>Anticipated approval for Final EIS and ROD.</td>
</tr>
</tbody>
</table>
Appendix A

Participating and Cooperating Agency Invitation Mailing List
6th Street Viaduct Seismic Improvement Project
Cooperating and Participating Agency Mailing List

Native American Tribal Councils
Mr. Martin Alcala
P.O. Box 9090
Marina Del Rey, CA 90292

California Air Resources Board
Environmental Review Section
1001 "T" Street
P.O. Box 2815
Sacramento, CA 95812

State Clearinghouse Office of Planning & Research
Director
P.O. Box 3044
Sacramento, CA 95812-3044

California Highway Patrol
Commissioner D.O. Helmik
P.O. Box 942898
Sacramento, CA 95814

California Regional Water Quality Control Board-
Los Angeles Region
Environmental Review Unit
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

State of California Resources Agency
Environmental Review Section
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

California Integrated Waste Management Board
Executive Director
P.O. Box 4025
Sacramento, CA 95812-4025

California Department of Fish and Game
Habitat Conservation Planning
4949 View Ridge Avenue
San Diego, CA 92123

California Transportation Commission
Dianne Eidam, Executive Director
1120 N Street
Room 2221 (MS-52)
Sacramento, CA 95814

California Native American Heritage Commission
Executive Secretary Larry Myers
915 Capitol Mall, Room 364
Sacramento, CA 95814

California State Department of Parks and Recreation
Office of Historic Preservation
Environmental Review Section
P.O. Box 942896
Sacramento, CA 94296-0001

California Department of Parks and Recreation
Attn: Environmental Review
1416 Ninth Street, 9th Floor
Sacramento, CA 95814

Los Angeles County Board of Supervisors
Susan Nissman Policy Deputy
500 W. Temple Street, #821
Los Angeles, CA 90012

County of Los Angeles
Department of Public Works
James Noyes, Director
900 S. Fremont Ave.
Alhambra, CA 91803-1331
6th Street Viaduct Seismic Improvement Project
Cooperating and Participating Agency Mailing List

County of Los Angeles Fire Department
P. Michele Freeman, Chief
1320 N. Eastern Avenue
Los Angeles CA 90063

Southern California Associations of Government
Environmental Document Review Section
818 West Seventh Street 12th Floor
Los Angeles, CA 90017-3435

South Coast Air Quality Management District
Steve Smith, Program Supervisor, CEQA Section
21855 E. Copley Drive
Diamond Bar, CA 91765-4182

County of Los Angeles Metropolitan Transportation Authority
Chief Planning Officer
1 Gateway Plaza Mail Stop: 99-22-1
Los Angeles, CA 90012-2932

County of Los Angeles
Community Development Commission
Executive Director
2 Coral Circle
Monterey Park, CA 91755

County of Los Angeles Dept of Regional Planning
Planning Director James Hartl
Rm. 1390, Hall of Records
320 W. Temple St.,
Los Angeles, CA 90012

County of Los Angeles Sheriff's Department
Sheriff Lee Baca
4700 Ramona Blvd.
Monterey Park, CA 91754-2169

Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, CA 90012
Attn: John Miller

County of Los Angeles Department of Regional Planning
Bruce McClendon, Planning Director
Hall of Records (13th Floor)
320 West Temple Street
Los Angeles, CA 90012

City of Los Angeles Dept. of Public Works-Bureau of Street
Services – Eng. Division
1149 South Broadway, Suite 400
Los Angeles, CA 90015
Attn: Mr. Chang Lin

County of Los Angeles Dept of Public Works
Water Resources Division
900 South Freemont Avenue, 6th Floor
Alhambra, CA 91803

City of Los Angeles
Planning Department
S. Gail Goldberg, Planning Director
200 North Main Street
Los Angeles, CA 90012

Los Angeles Police Department
William Fierro
2111 East 1st St.
Los Angeles, CA 90033

City of Los Angeles Parks and Recreation
Gale Minifieield
4155 S. Saint Louis ST.
Los Angeles, CA 90033
6th Street Viaduct Seismic Improvement Project
Cooperating and Participating Agency Mailing List

Los Angeles Fire Department
Attn: Captain
1962 E. Cesar Chavez Ave,
Los Angeles, CA 90033

City of Los Angeles
Department of Public Works, Bureau of Engineering
City Engineer
650 S. Spring St., Suite 200
Los Angeles, CA 90014-1911

City of Los Angeles Environment Affairs Department
Asia Palmer
200 N. Spring St.
Los Angeles, CA 90012

Ara J. Kasprian, Manager
City of Los Angeles
Department of Public Works, Bureau of Engineering
Environmental Management Group
650 S. Spring St., Suite 572, Stop 939
Los Angeles, CA 90014-1911

Linda Moore, Environmental Supervisor II
City of Los Angeles
Department of Public Works, Bureau of Engineering
Environmental Management Group
650 S. Spring St., Suite 572, Stop 939
Los Angeles, CA 90014-1911

Mr. Frank Viramontes
City of Los Angeles
Department of Public Works, Bureau of Engineering
Real Estate Division
600 S. Spring Street, 7th Floor, Stop 515

City of Los Angeles
Department of Building & Safety
General Manager
201 N. Figueroa Street
Los Angeles, CA 90012

City of Los Angeles
Community Development Department
Environmental Review Section
215 W. 6th Street
Los Angeles, CA 90014

City of Los Angeles
Department of Public Works, Bureau of Engineering
Real Estate Division
600 S. Spring Street, 7th Floor, Stop 515

City of Los Angeles
Cultural Affairs Department
Jay M. Oren, Architect-Historic Preservation Officer
433 S. Spring Street, Suite 1000
Los Angeles, CA, 90013

City of Los Angeles
City Attorney
1800 City Hall East
200 Main Street
Los Angeles, CA 90012

City of Los Angeles
Department of Recreation & Parks
General Manager
200 N. Main Street, Room 1330
Los Angeles, CA, 90012

City of Los Angeles
Housing Authority
Executive Director Donald Smith
2600 Wilshire Boulevard
Los Angeles, CA 90057

City of Los Angeles
Department of Water and Power
Environmental Review Section
111 N. Hope Street
Los Angeles, CA, 90012

City of Los Angeles
Planning Department
200 North Spring Street
Los Angeles, CA 90012-2601
6th Street Viaduct Seismic Improvement Project
Cooperating and Participating Agency Mailing List

City of Los Angeles
Cultural Heritage Commission
Commission Members
433 South Spring Street, 10th Floor
Los Angeles, CA 90013

City of Los Angeles
Hollenbeck Police Station
Captain Paul Pesqueira
2111 E. First St.
Los Angeles, CA 90033

City of Los Angeles
General Services Department
City Hall South, Room 701
Los Angeles, CA 90012

Community Redevelopment Agency
Of the City of Los Angeles
354 South Spring Street, Suite 800
Los Angeles, CA 90013-1258

Los Angeles Unified School District
Office of Environmental Health and Safety
Angello Bellomo, Director
355 South Grand Avenue
Los Angeles, CA 90071

METROLINK
Southern California Regional Rail Authority
700 South Flower Street, 26th Floor
Los Angeles, CA 90017-4101
Attn: David Quirk [or designate]

Deadra Knox
Strategic Development Planner
SCRRA - Metrolink
700 S. Flower Street, 26th Floor
Los Angeles, CA 90017-4101

Naresh Patel
Public Projects
SCRRA - Metrolink
700 S. Flower Street, 26th Floor
Los Angeles, CA 90017-4101

AMTRAK
National Railroad Passenger Corporation
810 North Alameda Street
Los Angeles, CA 90012
Attn: Harry Steelman [or designate]

U.S. Army Corps of Engineers
915 Wilshire Blvd.
Los Angeles, CA 90017

AMTRAK
National Railroad Passenger Corporation
810 North Alameda Street
Los Angeles, CA 90012
Attn: Harry Steelman [or designate]

U.S. Environmental Protection Agency
District IX
Susan Sturges
Environmental Review Office
Community and Ecosystems Division
75 Hawthorne Street
San Francisco, CA 94105

Advisory Council on Historic Preservation
Carol Legard
Federal Highway Liaison
Office of Federal Agency Programs
1100 Pennsylvania Avenue NW
Suite 809 Old Post Office Bldg
Washington DC 20004

Management Agency
1111 Broadway, Suite 1200
Oakland, CA 94607-4052
Appendix K
Letter from United States Fish and Wildlife Service
In Reply Refer To:
FWS-LA-08B0291-09SL1013

Carlos Montez
Branch Chief
California Department of Transportation
District 7, Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, California 90012-3606

Subject: Request for a List of Proposed, Threatened, and Endangered Species, and Critical Habitats Occurring in the vicinity of the 6th Street Viaduct and Overcrossing Project in Los Angeles County, California

Dear Mr. Montez:

This letter is in response to your request, received June 19, 2009, for a list of federally endangered, threatened, and proposed species and critical habitats occurring in the vicinity of the 6th Street Viaduct and Overcrossing Project in Los Angeles County, California. The project is receiving Federal funding through the Federal Highway Administration (FHWA), and Caltrans has assumed FHWA’s responsibilities under the Act for this consultation in accordance with Section 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) 2005, as described in the National Environmental Policy Act (NEPA) Delegation Pilot Program Memorandum of Understanding between FHWA and Caltrans (effective July 1, 2007) and codified in 23USC327(a)(2)(A).

We commented previously on the project in letter FWS-WRIV-5477.1, in which we declined to become a participating agency as defined under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) due to the heavily urbanized project environment with no natural habitat. We have reviewed the project information provided by your agency and we are unaware of any federally listed species in the vicinity of the proposed project. There is no critical habitat in the vicinity of the proposed project.

Because we do not have site-specific information for the proposed project, we recommend that you seek assistance from a biologist familiar with the habitat conditions and associated species in and around the project site to assess the actual potential for direct, indirect, and cumulative impacts likely to result from the proposed activity. We also suggest that you contact the California Department of Fish and Game regarding State-listed and sensitive species that may
Carlos Montez (FWS-LA-08B0291-09SL1013)

occur within the project area. Please note that State-listed species are protected under the provisions of the California Endangered Species Act.

Should you have any questions regarding this letter, please contact Sally Brown of this office at (760) 431-9440, extension 278.

Sincerely,

Sally Brown

Karen A. Goebel
Assistant Field Supervisor
August 26, 2011

Ms. Sally Brown
U.S. Fish and Wildlife Service
Ecological Services
Carlsbad Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Service letter to Caltrans, FWS-LA-08B0291-09SL1013

Dear Ms. Brown:

The California Department of Transportation (Caltrans) has previously corresponded with the U.S. Fish and Wildlife Service (the Service) concerning possible effects stemming from work on a structure over the Los Angeles River. Caltrans has partial federal funding for the 6th Street Viaduct Seismic Improvement Project, and thus must ensure its implementation would not adversely affect federally listed species.

Caltrans has asked for a complete revalidation of the proposed project because of unavoidable delays in project implementation. The proposed project itself has not changed in any way from that originally described. That revalidation would also entail a reply from the Service within the last 180 days. Perhaps the most convenient form of concurrence would be a brief letter in reply stating the Service is still unaware of any federally protected species, or critical habitat, “in the vicinity of the proposed project”. If necessary, Caltrans would ask otherwise for a current list of species known to inhabit the generally vicinity of the 6th Street Viaduct.

Thank you for your assistance in this procedural request.

Sincerely yours,

Paul A. Caron
Senior Biologist, Caltrans
Paul D
Caltrans/DOT
cc Jeff Johnson/DOT/Caltrans/CAGov@DOT
9/29/2011 11:05 AM
Subject: Fw: 6th Street Viaduct Seismic Improvement Project

Minn,

Assuming no change in scope related to location, the original Species List, 2009, still remains valid
thanks.

Paul Caron
Senior District Biologist
District 7 (LA/Ventura Counties)
ph: 213 897-0610
ttfax 213 897-0685

-----Forwarded by Paul D. Caron/DOT/Caltrans/CAGov on 09/29/2011 11:04 AM-----

Sally_Brown@ews.gov

To: paul_caron@dot.ca.gov

cc: <redacted>

09/29/2011 10:57 AM
Subject: 6th Street Viaduct Seismic Improvement Project

Paul,

I've received your request for a species list for the 6th Street Viaduct Seismic Improvement Project. The most recent map I have is from March of 2009 and shows the project location along 6th Street between Vista Street and the 101. If the project location information remains correct, then our July 22, 2009 species list and Sept 14, 2007 SAFEEX-10 response also remain correct (both attached).

(See attached file: 09S0291-09SL1013 6th Street Viaduct.pdf)

(See attached file: 5477.1 6th Street Viaduct.pdf)

Thank you,

Sally Brown
U. S. Fish and Wildlife Service
6010 Hidden Valley Road, Suite 101
Carlsbad, CA 92001
(760) 431-9440 voicemail
(760) 919-0638 fax

Sally_Brown@ews.gov 09S0291-09SL1013 6th Street Viaduct.pdf 5477.1 6th Street Viaduct.pdf
Appendix L
Notices of Availability of Draft EIR/EIS
June 12, 2009

The Honorable Barbara Boxer
U.S. Senator
United States Senate
312 N. Spring St., Suite 1748
Los Angeles, CA 90012

Notice of Public Hearing and Availability of Environmental Impact Report/Statement

The California Department of Transportation (Caltrans) and the City of Los Angeles have completed the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the 6th Street Viaduct Seismic Improvement Project. The proposed project would either retrofit the existing structure or replace it with a new structure.

Your choice of two public hearings will be held to provide you an opportunity to obtain first-hand project information and to express your comments and concerns about the proposed project. The public hearings are scheduled on Tuesday July 14, 2009 at Boyle Heights Senior Citizen Center, 2839 E 3rd St., Los Angeles, CA 90033 at 6 p.m. to 8 p.m., and Tuesday July 21, 2009 at Inner City Arts, 720 Kohler St., Los Angeles, CA 90021 at 5 p.m. to 7 p.m. The meeting will start with an open house for review of project exhibits, followed by a presentation and questions and comments. Caltrans, and the City of Los Angeles staff, will be available to discuss the project and to answer any questions about the proposed project.

If an effort to save paper, the enclosed Draft EIR/EIS is being sent on CD along with an Executive Summary. A hard copy of the document may also be viewed at the following locations:

- Caltrans, District 7, 100 S. Main Street, Los Angeles, CA 90012
- City of Los Angeles Department of Public Works Bureau of Engineering, Bridge Improvement Program, 221 N. Figueroa Street, Suite 350, Los Angeles, CA 90012
- City of Los Angeles Department of Public Works Bureau of Engineering, Environmental Management Group, 1149 South Broadway, Suite 600, Los Angeles, CA 90015
- Benjamin Franklin City Library, 2200 E. 1st Street, Los Angeles, CA 90033
- Little Tokyo Branch City Library, 203 S. Los Angeles Street, Los Angeles, CA 90012
- Council District 14 Information Desk, 200 N. Spring Street, RM 465, Los Angeles, CA 90012

The Draft EIR/EIS may also be viewed on the following websites:
http://www.dot.ca.gov/dist07/resources/envdocs/
http://eng.lacity.org/techdocs/eng/Environmental_Review_Documents.htm

We will be pleased to answer any questions you may have with regards to this project. It may be to your advantage to view the project plans at the Public Hearing, to clarify any questions you may have about the proposals. Written comments on the Draft EIR/EIS must be submitted by **August 17, 2009.**
June 12, 2009

Individuals interested in the 6th Street Viaduct Seismic Improvement Project

File: 07-LA-101.20
6th Street Viaduct Seismic Improvement Project
EA 251200

Notice of Public Hearing and Availability of Environmental Impact Report/Statement

The California Department of Transportation (Caltrans) and the City of Los Angeles have completed the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the 6th Street Viaduct Seismic Improvement Project. The proposed project would either retrofit the existing structure or replace it with a new structure.

Your choice of two public hearings will be held to provide you an opportunity to obtain first-hand project information and to express your comments and concerns about the proposed project. The public hearings are scheduled on Tuesday July 14, 2009 at Boyle Heights Senior Citizen Center, 2839 E 3rd St., Los Angeles, CA 90033 at 6 p.m. to 8 p.m., and Tuesday July 21, 2009 at Inner City Arts, 720 Kohler St., Los Angeles, CA 90021 at 5 p.m. to 7 p.m. The meeting will start with an open house for review of project exhibits, followed by a presentation and questions and comments. Caltrans, and the City of Los Angeles staff, will be available to discuss the project and to answer any questions about the proposed project.

If an effort to save paper, the enclosed Draft EIR/EIS is being sent on CD along with an Executive Summary. A hard copy of the document may also be viewed at the following locations:

- Caltrans, District 7, 100 S. Main Street, Los Angeles, CA 90012
- City of Los Angeles Department of Public Works Bureau of Engineering, Bridge Improvement Program, 221 N. Figueroa Street, Suite 350, Los Angeles, CA 90012
- City of Los Angeles Department of Public Works Bureau of Engineering, Environmental Management Group, 1149 South Broadway, Suite 600, Los Angeles, CA 90015
- Benjamin Franklin City Library, 2200 E. 1st Street, Los Angeles, CA 90033
- Little Tokyo Branch City Library, 203 S. Los Angeles Street, Los Angeles, CA 90012
- Council District 14 Information Desk, 200 N. Spring Street, RM 465, Los Angeles, CA 90012

The Draft EIR/EIS may also be viewed on the following websites:
- http://www.dot.ca.gov/dist07/resources/envdocs/
- http://eng.lacity.org/techdocs/emg/Environmental_Review_Documents.htm

We will be pleased to answer any questions you may have with regards to this project. It may be to your advantage to view the project plans at the Public Hearing, to clarify any questions you may have about the proposals. Written comments on the Draft EIR/EIS must be submitted by August 17, 2009.
Please send your comments to:

Ronald J. Kosinski, Deputy District Director
Division of Environmental Planning
Department of Transportation, District 7
100 S. Main Street MS-16A
Los Angeles, CA 90012

If you have any questions, please contact Carlos Montez, (213) 897-9116. Thank you for your interest in this important transportation study.

Sincerely,

Ron Kosinski

RON KOSINSKI
Deputy District Director, Caltrans District 7

Enclosure

"Caltrans improves mobility across California"
June 12, 2009

Responsible Agencies, Review Agencies,
Cooperating Agencies interested in the 6th Street Viaduct Seismic Improvement Project

Notice of Public Hearing and Availability of Environmental Impact Report/Statement

The California Department of Transportation (Caltrans) and the City of Los Angeles have completed the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the 6th Street Viaduct Seismic Improvement Project. The proposed project would either retrofit the existing structure or replace it with a new structure.

A Public Hearing for agencies will be held on July 14, 2009 at Caltrans District 7 Building, 100 S Main St, Los Angeles CA 90012, at 2 p.m. to 4 p.m. The meeting will start with an open house for review of project exhibits, followed by a presentation and questions and comments. Caltrans and the City of Los Angeles staff will be available to discuss the project and to answer any questions about the proposed project.

If an effort to save paper, the enclosed Draft EIR/EIS is being sent on CD along with an Executive Summary. A hard copy of the document may also be viewed at the following locations:

- Caltrans, District 7, 100 S. Main Street, Los Angeles, CA 90012
- City of Los Angeles Department of Public Works Bureau of Engineering, Bridge Improvement Program, 221 N. Figueroa Street, Suite 350, Los Angeles, CA 90012
- City of Los Angeles Department of Public Works Bureau of Engineering, Environmental Management Group, 1149 South Broadway, Suite 600, Los Angeles, CA 90015
- Benjamin Franklin City Library, 2200 E. 1st Street, Los Angeles, CA 90033
- Little Tokyo Branch City Library, 203 S. Los Angeles Street, Los Angeles, CA 90012
- Council District 14 Information Desk, 200 N. Spring Street, RM 465, Los Angeles, CA 90012

The Draft EIR/EIS may also be viewed on the following websites:
http://www.dot.ca.gov/dist07/resources/envdocs/
http://eng.lacity.org/techdocs/emg/Environmental_Review_Documents.htm

We will be pleased to answer any questions you may have with regards to this project. It may be to your advantage to view the project plans at the Public Hearing to clarify any questions you may have about the proposals. Written comments on the Draft EIR/EIS must be submitted by August 17, 2009.
Please send your comments to:

**Ronald J. Kosinski, Deputy District Director**
Division of Environmental Planning
Department of Transportation, District 7
100 S. Main Street MS-16A
Los Angeles, CA 90012

If you have any questions, please contact Carlos Montez, (213) 897-9116. Thank you for your interest in this important transportation study.

Sincerely,

Ron Kosinski

**Enclosure**

"Caltrans improves mobility across California"
June 12, 2009

Individuals interested in the 6th Street Viaduct Seismic Improvement Project

File: 07-LA-101.20
6th Street Viaduct Seismic Improvement Project
EA 251200

Notice of Public Hearing and Availability of Environmental Impact Report/Statement

The California Department of Transportation (Caltrans) and the City of Los Angeles have completed the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the 6th Street Viaduct Seismic Improvement Project. The proposed project would either retrofit the existing structure or replace it with a new structure.

Your choice of two public hearings will be held to provide you an opportunity to obtain first-hand project information and to express your comments and concerns about the proposed project. The public hearings are scheduled on Tuesday July 14, 2009 at Boyle Heights Senior Citizen Center, 2839 E 3rd St., Los Angeles, CA 90033 at 6 p.m. to 8 p.m., and Tuesday July 21, 2009 at Inner City Arts, 720 Kohler St., Los Angeles, CA 90021 at 5 p.m. to 7 p.m. The meeting will start with an open house for review of project exhibits, followed by a presentation and questions and comments. Caltrans, and the City of Los Angeles staff, will be available to discuss the project and to answer any questions about the proposed project.

If an effort to save paper, the enclosed Draft EIR/EIS is being sent on CD along with an Executive Summary. A hard copy of the document may also be viewed at the following locations:

- Caltrans, District 7, 100 S. Main Street, Los Angeles, CA 90012
- City of Los Angeles Department of Public Works Bureau of Engineering, Bridge Improvement Program, 221 N. Figueroa Street, Suite 350, Los Angeles, CA 90012
- City of Los Angeles Department of Public Works Bureau of Engineering, Environmental Management Group, 1149 South Broadway, Suite 600, Los Angeles, CA 90015
- Benjamin Franklin City Library, 2200 E. 1st Street, Los Angeles, CA 90033
- Little Tokyo Branch City Library, 203 S. Los Angeles Street, Los Angeles, CA 90012
- Council District 14 Information Desk, 200 N. Spring Street, RM 465, Los Angeles, CA 90012

The Draft EIR/EIS may also be viewed on the following websites:
http://www.dot.ca.gov/dist07/resources/envdocs/
http://eng.lacity.org/techdocs/emg/Environmental_Review_Documents.htm

We will be pleased to answer any questions you may have with regards to this project. It may be to your advantage to view the project plans at the Public Hearing, to clarify any questions you may have about the proposals. Written comments on the Draft EIR/EIS must be submitted by August 17, 2009.

"Caltrans improves mobility across California"
Please send your comments to:

**Ronald J. Kosinski**, Deputy District Director  
Division of Environmental Planning  
Department of Transportation, District 7  
100 S. Main Street MS-16A  
Los Angeles, CA 90012

If you have any questions, please contact Carlos Montez, (213) 897-9116. Thank you for your interest in this important transportation study.

Sincerely,

[Ron Kosinski’s signature]

RON KOSINSKI  
Deputy District Director, Caltrans District 7

Enclosure
EIS No. 20090225, Draft EIS, AFS, ND, North Billings County Allotment Management Plan Revisions, Proposes to Continue to Permit Livestock Grazing on 43 Allotments, Medora Ranger District, Dakota Prairie Grassland, Billings County, ND, Comment Period Ends: 08/24/2009, Contact: Jeff Adams 701–227–7800.


EIS No. 20090228, Final EIS, CGD, FL, Port Dolphin LLC Liquefied Natural Gas Deepwater Port License Application, Proposes to Own, Construct and Operate a Deepwater Port, Outer Continental Shelf, Manatee County, FL, Wait Period Ends: 08/10/2009, Contact: Raymond Martin 202–372–1449.


EIS No. 20090231, Draft EIS, BIA, CA, Point Molate Mixed-Use Tribal Destination Resort and Casino, Proposed Project is to Strengthen the Tribal Government and Improve the Socioeconomic Status, Guidiville Band of Pomo Indian of the Guidiville Rancheria (Tribe), City of Richmond, Contra Costa County, CA, Comment Period Ends: 09/23/2009, Contact: Larry Blevin 916–978–6037.


Robert W. Hargrove,
Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. E9–16353 Filed 7–9–09; 8:45 am]

BILLING CODE 6550–50–P

ENVIRONMENTAL PROTECTION AGENCY
[ER–FRL–8595–3]

Environmental Impact Statements and Regulations; Availability of EPA Comments

Availability of EPA comments prepared pursuant to the Environmental Review Process (ERP), under section 309 of the Clean Air Act and Section 102(2)(c) of the National Environmental Policy Act as amended. Requests for copies of EPA comments can be directed to the Office of Federal Activities at 202–564–7146.

An explanation of the ratings assigned to draft environmental impact statements (EISs) was published in FR dated April 17, 2009 (74 FR 17860).

Draft EISs

Summary: EPA expressed concerns because it appears that the proposed operations plan may not include sufficient peak flows to maintain high quality fish habitat. EPA also requested additional information on how the plan would meet the federal reserved water rights for the Black Canyon of the Gunnison National Park. Rating EC2.

EIS No. 20090115, ERP No. D–SFW–L65571–00, Western Snowy Plover Habitat Conservation Plan, Proposed Issuance of an Incidental Take Permit, Oregon Parks and Recreation Department, Oregon Coast, OR, CA, WA.

Summary: EPA has no objection to the proposed action. Rating LO.


Summary: EPA expressed concerns regarding potential impacts to noise, aquatic habitats, water resources, and wetlands, and made recommendations for mitigation measures. Rating EC2.


Summary: EPA expressed concerns about mobile source air toxics and environmental justice. Rating EC3.

EIS No. 20090132, ERP No. D–NPS–D61063–00, Harpers Ferry National Historical Park, General Management Plan, Implementation, Harpers Ferry, Jefferson County, WV; Loudoun County, VA; and Washington County, MD.

Summary: EPA does not object to the proposed action. However, EPA requested clarifying information on a proposed pedestrian bridge and vegetation removal/manipulation in relation to rewatering the canal and as well as maintaining historic or scenic vistas in specified areas. Rating LO.

Final EISs
EIS No. 20090172, ERP No. F–NOA–K80052–CA, Southwest Fisheries Science Center Replacement, Construction and Operation, located on University of California, La Jolla, CA.

Summary: EPA does not object to the proposed action.

EIS No. 20090148, ERP No. FS–COE–E01013–FL, Rock Mining in the Lake Belt Region Plan, Continuance of Limestone Mining Construction, Section 404 Permit, Miami-Dade County, FL.

Summary: EPA expressed objections to impacts to wetlands from the
Appendix M
Written Comments and Responses on Draft EIR/EIS
Written Comments and Responses on DEIR/EIS

During the Draft EIR/EIS public review period, 26 emails and letters were received. Responses to all written comments are presented in the order the comment letter was received following this table. Note that Letter No. 26 was received in July 2010 during the Community Advisory Committee meeting No. 10.

<table>
<thead>
<tr>
<th>Comment Letter No.</th>
<th>Name</th>
<th>Date Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hill, Farrer &amp; Burrill LLP (representing Spilo Worldwide)</td>
<td>June 29, 2009</td>
</tr>
<tr>
<td>2</td>
<td>Federal Emergency Management Agency (FEMA)</td>
<td>July 13, 2009</td>
</tr>
<tr>
<td>3</td>
<td>Martha Cisneros</td>
<td>July 14, 2009</td>
</tr>
<tr>
<td>4</td>
<td>Juaquin Castellanos</td>
<td>July 14, 2009</td>
</tr>
<tr>
<td>5</td>
<td>Victoria Torres</td>
<td>July 14, 2009</td>
</tr>
<tr>
<td>6</td>
<td>Kevin Break</td>
<td>July 14, 2009</td>
</tr>
<tr>
<td>7</td>
<td>Art Herrera</td>
<td>July 14, 2009</td>
</tr>
<tr>
<td>8</td>
<td>Tiffany Sum</td>
<td>July 14, 2009</td>
</tr>
<tr>
<td>9</td>
<td>John Fisher</td>
<td>July 14, 2009</td>
</tr>
<tr>
<td>10</td>
<td>Cal Hono Freight</td>
<td>July 15, 2009</td>
</tr>
<tr>
<td>11</td>
<td>City of Los Angeles Cultural Heritage Commission</td>
<td>July 30, 2009</td>
</tr>
<tr>
<td>12</td>
<td>City of Los Angeles Bureau of Street Lighting (BSL)</td>
<td>July 28, 2009</td>
</tr>
<tr>
<td>13</td>
<td>Glacier Cold Storage</td>
<td>July 29, 2009</td>
</tr>
<tr>
<td>14</td>
<td>County of Los Angeles Department of Public Works</td>
<td>August 6, 2009</td>
</tr>
<tr>
<td>15</td>
<td>State of California Public Utilities Commission</td>
<td>August 13, 2009</td>
</tr>
<tr>
<td>16</td>
<td>Central City East Association</td>
<td>August 14, 2009</td>
</tr>
<tr>
<td>17</td>
<td>Stover Seed Company</td>
<td>August 14, 2009</td>
</tr>
<tr>
<td>18</td>
<td>Hill, Farrar &amp; Burrill LLP (representing Spilo Worldwide)</td>
<td>August 14, 2009</td>
</tr>
<tr>
<td>19</td>
<td>Hager Pacific Properties</td>
<td>August 17, 2009</td>
</tr>
<tr>
<td>20</td>
<td>Friends of the Los Angeles River</td>
<td>August 17, 2009</td>
</tr>
<tr>
<td>21</td>
<td>California Archives</td>
<td>August 19, 2009</td>
</tr>
<tr>
<td>22</td>
<td>United States Environmental Protection Agency (EPA)</td>
<td>August 24, 2009</td>
</tr>
<tr>
<td>23</td>
<td>Department of Interior</td>
<td>September 3, 2009</td>
</tr>
<tr>
<td>24</td>
<td>Office of Planning and Research</td>
<td>September 18, 2009</td>
</tr>
<tr>
<td>25</td>
<td>Gabrieleno Band of Mission Indians</td>
<td>October 30, 2009</td>
</tr>
<tr>
<td>26</td>
<td>CRA/LA</td>
<td>July 29, 2010</td>
</tr>
</tbody>
</table>
June 29, 2009

By E-mail and U.S. Mail

Carlos Montez
Senior Environmental Planner
California Department of Transportation
100 S. Main Street
Los Angeles, CA 90012
Carlos.montez@dot.ca.gov

Wallace E. Stokes III
Bureau of Engineering
Bridge Improvement Project
City of Los Angeles
221 N. Figueroa Street, Suite 350
Los Angeles, CA 90012
wally.stokes@eng.lacity.org

Jim Wu, P.E., Project Manager
City of Los Angeles
Bridge Improvement Program
221 N. Figueroa St., Suite 350
Los Angeles, CA 90012
jim.wu@lacity.org

Re: 6th Street Viaduct Seismic Improvement Project
Our client: Spilo Worldwide, 585 and 589 S. Santa Fe Ave.

Gentlemen:

This firm represents Spilo Worldwide which operates its business at 585 S. Santa Fe Avenue, 589 S. Santa Fe Avenue, and 1435 East Sixth Street (the north side frontage road). Spilo owns the property on Santa Fe and leases the Sixth Street parcel. The City of Los Angeles has told Spilo that of the various alternatives under consideration, the City and/or State may take Spilo’s property as part of the 6th Street Viaduct Improvement Project. This letter sets forth Spilo’s concerns with respect to the impact of the proposed project on its business and Spilo requests that the City and State respond to these issues in the Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS).

Spilo is a distributor of beauty products and has operated just northerly of the Sixth Street Viaduct since 1982. Spilo’s facilities include its main office at 589 S. Santa Fe Avenue, the 585 S. Santa Fe parcel, where it has additional offices, its receiving area and parking lot with access to Willow Street, and its shipping and loading area at 1435 East Sixth Street, just northerly of the westerly portion of the Sixth Street Viaduct.

We understand that under some of the scenarios being contemplated, the City and/or State would close the East Sixth Street frontage road adjacent to the viaduct. That closure would
prevent access to Spilo’s facility at 1435 East Sixth Street, and prevent Spilo from shipping its products. It is critical to Spilo’s operations that its shipping operations have access to city streets so that it can distribute its goods. Without such access, the business could not exist.

The City’s representatives have presented a conceptual mitigation measure which would provide access from the 1435 East Sixth Street parcel to Willow Street. It is critical to Spilo’s operations that if the City/State intends to proceed with creating alternative access to those buildings fronting on East Sixth Street, East of Mateo, that such access be secured and completed prior to any impact on access to the northerly frontage road.

During the period the Viaduct is being constructed, Spilo is concerned that the construction noise and vibrations will interfere with its operations, and that large amounts of dirt and debris will find its way onto Spilo’s property.

Spilo recognizes the importance of this project, but requests that the City and State fully consider the impacts of the project on local businesses, and completely mitigate those impacts, so that private citizens and businesses are not damaged by this public project.

Please make this letter part of the record of the draft EIR/EIS. Feel free to contact me if you need additional information. Thank you.

Very truly yours,

KEVIN H. BROGAN
OF
HILL, FARRER & BURRILL LLP

cc: Spilo Worldwide

KHB:hjp

HFEI 882676.1 5G816902
Response to Comment Letter No. 1 – Hill, Farrer & Burrill LLP (representing Spilo Worldwide)

1. As indicated in the EIR/EIS (Section 3.4.3.1), the one-way service/frontage road north of the viaduct between Mateo Street and Mesquit Street would be removed and relocated for the Replacement Alternative, which would require acquisition/relocation of several businesses along this road. Since preliminary discussions between representatives of the City Real Estate Group and Spilo Worldwide, it has been determined that it will not likely be feasible to provide alternative access to the property at 1435 East Sixth Street from Willow Street. The City is committed to working and resolving the right-of-way issue with affected property owners during the right-of-way acquisition process and final design.

2. **Concerns about noise, vibration, and dust during construction.** During the construction period, the contractor would be required to ensure dust control measures are in place. Construction methods would be considered to minimize vibration.

3. **Request the City to consider impacts to local business and mitigate them.** The City will continue to work with the businesses within the project area to try and to resolve any remaining issues.
Appendix M  Written Comments and Responses on DEIR/EIS

July 13, 2009

Ronald J. Kosinski  
Deputy District Director  
Division of Environmental Planning  
Department of Transportation, District 7  
100 South Main Street, MS-16A  
Los Angeles, California 90012

Dear Mr. Kosinski:

This is in response to your request for comments on the Notice of Public Hearing and Availability of Environmental Impact Report/Statement for 07-LA-101.20 6th Street Viaduct Seismic Improvement Project EA 251200.

Please review the current effective countywide Flood Insurance Rate Maps (FIRMs) for the City of Los Angeles (Community Number 060137) and County of Los Angeles (Community Number 065043), Maps revised September 6, 2008. Please note that the City and County of Los Angeles are participants in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.

- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any development must not increase base flood elevation levels. The term development means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials. A hydrologic and hydraulic analysis must be performed prior to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.
Ronald J. Kosinski, Deputy District Director  
Page 2  
July 13, 2009

- All buildings constructed within a coastal high hazard area, (any of the “V” Flood Zones as delineated on the FIRM), must be elevated on pilings and columns, so that the lowest horizontal structural member, (excluding the pilings and columns), is elevated to or above the base flood elevation level. In addition, the posts and pilings foundation and the structure attached thereto, is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.

- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA’s Flood Map Revision Application Packages, please refer to the FEMA website at http://www.fema.gov/business/nfip/forms.shtm.

Please Note:

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community’s floodplain manager for more information on local floodplain management building requirements. The City of Los Angeles floodplain manager can be reached by calling Susan Shu at (213) 485-4493. The Los Angeles County floodplain manager can be reached by calling George De La O, Senior Civil Engineer, Department of Public Works, at (626) 458-7155.

If you have any questions or concerns, please do not hesitate to call Cynthia McKenzie of the Mitigation staff at (510) 627-7190.

Sincerely,

Gregor Blackburn, CFM, Branch Chief  
Floodplain Management and Insurance Branch

cc:
Susan Shu, Floodplain Administrator, City of Los Angeles  
George De La O, Senior Civil Engineer, Los Angeles County Department of Public Works  
Garret Tam Sing/Salomon Miranda, State of California, Department of Water Resources, Southern District  
Cynthia McKenzie, Senior Floodplain Administrator, CFM, DHS/FEMA Region IX  
Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX

www.fema.gov
Response to Comment Letter No. 2 – Federal Emergency Management Agency (FEMA)

1. **The project should comply with the National Flood Insurance Program (NFIP) floodplain management building requirements.** A hydrologic and hydraulic analysis was prepared to analyze potential impacts to the river due to construction of a new bridge. The study concluded that construction of a new bridge will not raise the base flood levels as documented in Section 3.10.3 of the FEIR/EIS. Based on the result of the study, construction of Bridge Concept 1 would adversely affect the river hydraulics upstream of the viaduct due to the larger pier size. Construction of other bridge types (2, 3, 4, 4A, 5) would have either negligible or beneficial impacts to the river hydraulics. Alternative 3 with the principle of Bridge Concept 4 has been identified as the preferred alternative, and it would not affect the river flow.

The 6th Street Viaduct Seismic Improvement Project does not propose to construct any buildings.
Comment Letter #3

City of Los Angeles Department of Public Works Bureau of Engineering and Caltrans
6th St Bridge Viaduct Seismic Improvement Project Comment Form
Public Hearing
Tuesday, July 14, 2009
6:00 pm – 8:00 pm
Boyle Heights Senior Center

Your name: MARTHA MENESES
Affiliation: 3H RESIDENT
Business/Residence Address: 1151 SPENCE ST, L.A. 90023
Street City Zip Code
Telephone 323-268-3800 Email martha.meneses2003@yahoo.com

☐ Yes, I would like to provide oral public comment
☐ No, I would like to provide only written comment

Please use this space for your questions and comments

I AM IN FAVOR OF REPLICA BRIDGE 1A

I OPPOSE ALL OTHER CONCEPTS

I COMMUTE TO DOWNTOWN EVERYDAY ON 6TH ST. BRIDGE.

Thank You for your input!
Response to Comment Letter No. 3 – Martha Cisneros

1. **In support of the Replica.** After comparing and weighing the benefits and impacts of all of the feasible alternatives, as summarized in Summary Table ES-1 and described in detail in Chapter 3, the Project Development Team (PDT) has identified the Replacement Alternative (Alternative 3) with Alignment 3B and the principle of Bridge Concept 4 as the Preferred Alternative for the 6th Street Viaduct Seismic Improvement Project (see Section 2.4 of the FEIR/EIS). The City and Caltrans have made the final determination of the project’s impact on the environment based on the comments and concerns expressed during the public review period and the results of the engineering and environmental technical analysis. The Preferred Alternative would attain the purpose of the project.

The City will go through a process to refine the final design for the bridge replacement to ensure that both an architecturally distinctive and cost-effective design is selected for construction. Design details of the preferred cable-supported bridge type (the principle of Bridge Concept 4) could evolve into different engineering and architectural expressions of this concept, in terms of tower and cable connection form for example, in addition to aesthetic elements of colors, textures, lighting, railings, and gateway elements.

Note that during construction, 6th Street Viaduct will be closed and detours will be in place.
City of Los Angeles Department of Public Works Bureau of Engineering and Caltrans
6th St Bridge Viaduct Seismic Improvement Project Comment Form

Public Hearing
Tuesday, July 14, 2009
6:00 pm – 8:00 pm
Boyle Heights Senior Center

Your name: Juanquid Castellanos  Affiliation:

Business / Residence Address:
528 N. Commerce St LA CA 90033
Street City Zip Code

Telephone (312) 309-892 Email castellanosjuanquid@yahoo.com

☐ Yes, I would like to provide oral public comment
☐ No, I would like to provide only written comment

Please use this space for your questions and comments

I like the replica of the 6th St Bridge because it will keep the sense of this community. This community has history and these Bridge is part of it. I like also the color is on right now. Also, the lighting is important because it will bring safety to it. We need to bring antique lights, to make it more beautiful and more peaceful place to do a nice walk.

Sincerely,

Juanquid Castellanos.

Also, the Bridge should be call the same name, we don’t want to dedicate or rename it to anyone.

Thank you for your input!

on the back
Response to Comment Letter No. 4 – Juaquin Castellanos

1. **In support of the Replica.** The preferred alternative is the principle of Bridge Concept 4 and Alignment 3B (see Response to Comments 4-1 above).

2. **The same name should be used for the new bridge.** Currently there is no consideration of changing the name of the 6th Street Viaduct.
City of Los Angeles Department of Public Works Bureau of Engineering and Caltrans 6th St Bridge Viaduct Seismic Improvement Project Comment Form

Public Hearing
Tuesday, July 14, 2009
6:00 pm – 8:00 pm
Boyle Heights Senior Center

Your name: Victoria Torres  Affiliation: Boyle Heights Historical Society
Business/Residence Address:
116 1/2 Miraleal Street  Los Angeles  90023
Street City Zip Code

Telephone: 323/269-2668  Email: 

☐ Yes, I would like to provide oral public comment
☐ No, I would like to provide only written comment

Please use this space for your questions and comments

In the last two years I like that you have taken our concern’s into consideration on keeping the 6th Street Bridge as close to you can to blend in with the other historical bridges. I like the concept of LA Bridge. It has that historical look and does keep in concept with the Bridge as it looks today with the pillars under the Bridge with the arches.

Thank You for your input!
Response to Comment Letter No. 5 – Victoria Torres

1. **In support of Concept 1A.** The preferred alternative is Bridge Concept 4A and Alignment 3B (see Response to Comments 4-1 above).
Appendix M  Written Comments and Responses on DEIR/EIS

City of Los Angeles Department of Public Works Bureau of Engineering and Caltrans
6th St Bridge Viaduct Seismic Improvement Project Comment Form
Public Hearing
Tuesday, July 14, 2009
6:00 pm – 8:00 pm
Boyle Heights Senior Center

Your name: Kevin Breal
Affiliation: photographer 1st St project

Business / Residence Address:
600 Moulton Dr
LA, CA 90031

Telephone 323.721.5129
Email: KBreal@gmail.com

☐ Yes, I would like to provide oral public comment
☐ No, I would like to provide only written comment

Please use this space for your questions and comments:

It sounds murder, however it would be a great idea to make the new bridge "pigeon-proof" as there is a recurring infestation right at the arches.

Secondly, there is so much filming at the bridge, why not put outlets for 120/220VAC so that film crews could forego the stinking diesel generators?

Thank You for your input!
Response to Comment Letter No. 6 – Kevin Break

1. **Suggested “pigeon-proof” be considered in the new bridge design.** The suggested feature will be considered during the final design phase.

2. **Suggested electrical outlets be furnished on the bridge to facilitate filming activities.** The suggested feature will be considered during the final design phase.
City of Los Angeles Department of Public Works Bureau of Engineering and Caltrans
6th St Bridge Viaduct Seismic Improvement Project Comment Form

Public Hearing
Tuesday, July 14, 2009
6:00 pm – 8:00 pm
Boyle Heights Senior Center

Your name: Art Herrera
Affiliation: Boyle Heights Resident Homeowner

Business / Residence Address:
3438 6th St
LA 90023

Street
City
Zip Code

Telephone: (323) 268-4643
Email: 

Yes, I would like to provide oral public comment

No, I would like to provide only written comment

Please use this space for your questions and comments

I support the monel type bridge. 4 4 A

Thank You for your input!
Response to Comment Letter No. 7 – Art Herrera

1. **In support of Concept 4A.** The preferred alternative is the principle of Bridge Concept 4 and Alignment 3B (see Response to Comments 4-1 above).
City of Los Angeles Department of Public Works Bureau of Engineering and Caltrans
6th St Bridge Viaduct Seismic Improvement Project Comment Form
Public Hearing
Tuesday, July 21, 2009
5:00 pm – 7:00 pm
Inner City Arts

Your name: Tiffani Sum
Affiliation: Cal State University Long Beach

Business/Residence Address:
1308 Factory Place #515
Los Angeles CA 90013

Street: 1308 Factory Place
City: Los Angeles
Zip Code: 90013
Telephone: 415 623 4113
Email: tsum@csulb.edu

☐ Yes, I would like to provide oral public comment
☐ No, I would like to provide only written comment

Please use this space for your questions and comments

1. I'd vote for proposal 4A.
   The modest design that can compare with London's Millennium Bridge to London Bridge
   and other older infrastructure.

2. There needs to align cultural communities and events to expand the use of the bridge: greener, more human activities involved.
Response to Comment Letter No. 8 – Tiffany Sum

1. **In support of Concept 4A.** The preferred alternative is the principle of Bridge Concept 4 and Alignment 3B (see Response to Comments 4-1 above).

2. **Support more cultural activities on bridge.** Once the bridge is replaced, it could be available for events.
City of Los Angeles Department of Public Works Bureau of Engineering and Caltrans
6th St Bridge Viaduct Seismic Improvement Project Comment Form

Public Hearing

Responsible Agencies, Review Agencies, Cooperating Agencies
Tuesday, July 14, 2009
2:00 pm – 4:00 pm
Caltrans

Your name: John Fisher
Affiliation: LADOT, Asst. GM

Business/Residence Address:

Telephone: __________________________ Email: __________________________

Street: __________________________ City: __________________________ Zip Code: __________________________

☑ Yes, I would like to provide oral public comment
☐ No, I would like to provide only written comment

Please use this space for your questions and comments

I would like to incorporate some of the original design elements from the existing bridge, such as the pyramid shape on the pylons, art deco light standards, and flower design. See pictures attached.
Response to Comment Letter No. 9 – John Fisher

1. **Some original design elements should be incorporated into new bridge design.** The preliminary bridge concepts incorporate the architectural vocabulary derived from the massing of the existing river bridges. During the final design phase, an aesthetic advisory committee will be formed and will provide input on architectural features to be included in the design.
First of the e-mail comments.

wally

From: Wally Stokes
Sent: Wednesday, July 15, 2009 1:19 PM
To: "Jim Zant"
Cc: glaciervp; Diane Carletello; Sergio Ibarra
Subject: RE: Comments

Thank you Mr. Zant, your comment has been passed to the project team for further analysis. A member of the team may contact you in the future to gather additional site-specific information. Please be assured that your concern will receive the team's full attention.

wally

From: "Jim Zant" [mailto:Jim@calhono.com]
Sent: Wednesday, July 15, 2009 11:34 AM
To: <wally.stokes@lacity.org>
Cc: <glaciervp@aol.com>, "Diane Carletello" <Diane@calhono.com>, "Sergio Ibarra" <Sergio@calhono.com>
Subject: Comments

Mr. Stokes:

I attended the meeting last night & made a public comment about our particular concern but I also wanted to put it in writing. We sublease part of a building from Glacier Cold Storage – our portion of the building is located at 634 S. Mission Rd. We ship ocean containers to Hawaii & Guam so we unload a lot of truck & containers every day. Since our fence that marks the end of our truck / container maneuvering area abuts the bridge pillars, we would like to get an answer as to whether we will lose any of this area when this segment of the old bridge is demolished. We would like to know exactly how we will be affected & for how long. For instance, during the demolition of the bridge sections that abut this property, will the crane be stationed to the north or south of the bridge & how long will it take to complete the demolition of this span(s)?

If we will lose any of our truck maneuvering space, we will need to relocate our facility to another building with sufficient space in front of a dock to maneuver trucks. This would be quite a hardship for us as we would need to find a building with sufficient dock space AND with freezer space.
After the meeting last night, Mr. Viramontes approached me & offered to meet with us at our facility. I have emailed him this morning & asked him to meet with us during the week of August 3rd.

Regards,

Jim Zart
Cal Hono Freight
Phone: 323-318-9468
Hawaii Only: 800-500-0225 ext. 103
Fax: 323-981-6851 or 323-315-7144

Response to Comment Letter No. 10 – Cal Hono Freight

1. **Impacts on business operations from project construction.** Special provisions to protect properties located adjacent to the bridge will be included in the project specifications. Prior to demolition, the contractor will be required to submit the means and methods for demolition for City review and approval. During the demolition period, construction inspectors will ensure that the contractors adhere to the approved plan.

As described in the EIR/EIS, demolition and construction of Alternative 2 would take approximately 2.5 years and Alternative 3 would require approximately 4 years. The actual construction schedule cannot be accurately predicted until the final design phase is completed.
Wallace E. Stokes III  
Environmental Coordinator  
City of Los Angeles  
221 N. Figueroa Street, Suite 350  
Los Angeles, CA 90012

July 30, 2009

Dear Mr. Stokes:

On behalf of the Cultural Heritage Commission and the Office of Historic Resources, thank you for the opportunity to formally comment on the Draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS) for the 6th Street Viaduct Seismic Improvement Project. As you know, the 6th Street Viaduct has been determined eligible for the National Register of Historic Places and is designated as Historic-Cultural Monument (HCM) #910 under the City’s Cultural Heritage Ordinance.

One of the Cultural Heritage Commission’s primary responsibilities in its capacity as a Mayor-appointed decision-making body is overseeing the preservation and safeguarding of the City of Los Angeles’ nearly 1000 Historic-Cultural Monuments (HCMs). Since the designation of the Sixth Street Bridge as an HCM, the Cultural Heritage Commission has expressed concern over the potential demolition of this iconic landmark as part of its seismic improvement project. Cultural Heritage Commissioners have worked closely with the Bureau of Engineering, particularly in studying options to address the bridge’s Alkali-Silica Reaction (ASR) condition.

Based on an agreement signed on January 29, 2008, the Department of City Planning and Bureau of Engineering formalized a review process that allowed the Cultural Heritage Commission to provide input at appropriate milestones in the CEQA and Section 106 processes. After careful review of the DEIR, the Cultural Heritage Commission submits the following substantive comments:

**Cultural Heritage Commission Comments**

1) The DEIR neglects to cite the 6th Street Bridge’s designation as Historic-Cultural Monument #905 in the Executive Summary. The Introduction and Background section of the DEIR omit any reference to the subject bridge’s Historic-Cultural Monument designation or its inclusion in the California Register of Historical Resources and eligibility for placement in the National Register of Historic Places.
2) The DEIR should evaluate which alternatives would allow for the 6th Street Bridge to retain Historic-Cultural Monument (HCM) status. As part of its CEQA evaluation, the DEIR does not evaluate the alternatives to address the local designation of the subject bridge as a Historic-Cultural Monument. Demolition of the 6th Street Bridge under a replacement alternative would result in a loss of its HCM designation. A full replication/reconstruction alternative and/or sufficient retention of existing character-defining features may allow for the proposed project to retain its HCM designation.

3) The DEIR does not provide a full replication/reconstruction alternative. Of the bridge concepts for the replacement alternative presented in Chapter 2 of the DEIR, "Bridge Concept 1-Main Span Replication" offers only a partial replication of the existing bridge. The reconstruction component would be limited to the span of the new bridge that crosses the Los Angeles River. It must be noted that many historic character-defining design elements within this section in the "Main Span Replication" will in fact not be replicated:

   a) the bridge railing will be a new design with an 8-foot stainless steel wire projectile barrier.
   b) the two main center pylons will be a new "Deco" design not based on the original landmark 1932 pylons.
   c) original light fixtures will not be reproduced.
   d) the two iconic double-arched steel will not be entirely replicated, utilizing a different number of steel columns and not reproducing the steel latticework located between each paired archway.

The discussion of this alternative in the Bridge Type Selection-Advance Planning Study Phase describes this alternative as "taking cues from the original bridge [that] pays homage to the original landmark bridge design" and "capturing the essence of the old landmark bridge." As described, the replacement bridge's span replication is not in fact a replication, but rather a new design taking some architectural and design cues from the historic 6th Street Bridge and reinterpreting them.

Lacking in the DEIR is a full replication/reconstruction alternative that would attempt to the greatest extent possible, using original architectural plans and archival material, to reconstruct the existing subject bridge. For this type of alternative, the Secretary of the Interior's Standards for Reconstruction would apply in developing a proposed project that would comply with preservation guidelines. As a case study, the City of Pasadena successfully reconstructed the 1913 Colorado Street Bridge in the early 1990s to successfully correct structural and safety deficiencies.

4) The DEIR relies upon artificial constraints on the proposed bridge's width, which have significantly driven the analysis of project alternatives. A wider bridge could result in significant impacts on communities on both sides. While it is well known that additional street capacity quickly fills up when it becomes available, in this case the wider footprint of the new bridge will immediately become constricted into narrower arterial streets on either side of the proposed project. Furthermore, Federal standards regarding bridge width appear to be artificially constraining alternatives and limiting preservation options. The Final EIR should explore successful approaches nationally to preserving historic bridges, including possible opportunities to work with Federal officials to maintain existing widths for historic bridges.

The Final EIR should also consider the extent to which the bridge's overall footprint itself may be considered a character-defining feature of the existing Monument. Additionally, the Final EIR should evaluate the cost-savings of maintaining the scope of the project within the footprint of the current bridge, thereby eliminating the need to acquire private property as necessitated by a bridge widening.
5) The DEIR should include study of an additional partial preservation alternative. The replacement alternative in the DEIR preserves none (0%) of the existing historic bridge; the retrofit alternative retains 95% of the viaduct. Somewhere between 0% and 95% may be a project alternative that retains the eligibility of the bridge as a Historic-Cultural Monument and/or as a contributor to the National Register-eligible district of bridges while addressing the ASR-related issues.

The DEIR does acknowledge that the bridge contributes to a CRHR-eligible district, thereby finding that Alternative 2 would have a less than significant impact to the district. The partial preservation alternative selected should retain the bridge as a contributor to this ensemble of historic bridges.

6) The potential mitigation measures under Alternative 3-Replacement in Chapter 3.9 (Cultural Resources) are inadequate. [3-148-149] The mitigation measures listed for a possible replacement project are inappropriate:

a) The first mitigation measure states that "the City would install two Cultural Heritage Commission plaques" at each end of the new replacement bridge. Since the new replacement bridge would most likely have lost its Historic-Cultural Monument designation, it would be inappropriate to use the Cultural Heritage Commission's Plaque Program for an HCM that would no longer be extant.

b) There is no stated mitigation measure that involves physical retention of some character defining features of the existing historic bridge. Under the replacement alternative, a new replacement bridge could potentially incorporate architectural elements of the existing bridge. Another possibility is to relocate architectural elements to a new location in a public setting.

Mitigation measures that include an educational component should target schools located in Boyle Heights and the Downtown area.

7) The proposed location for the retention and reuse of the historic bridge's original steel arches in the replacement alternatives may be inappropriate. All replacement alternatives in the DEIR propose recycling the iconic original steel arches and relocating them to the two entrances at the abutments. The Bridge Type Selection-Advance Planning Study Phases states:

In respect to the historical land marking of the existing bridge, the original steel arches that will be removed from their central location will be re-used as gateway monuments at the abutments. This will honor the original landmark by keeping it on site. This monumental gateway entry, at both ends of the viaduct, marks a beginning and an endpoint for the traveler along this long span, also acting as an homage to this popular historical structure. [Page 30]

Although the effort to conserve the original steel arches on site is applauded, their new location is not ideal and presents some contextual design issues.

8) The DEIR is silent on the effects of the proposed alternatives on architectural elements of the subject bridge that are not structurally linked to the 6th Street Bridge. During the HCM designation of the 6th Street Bridge, the staff of the Office of Historic Resources (OHR) identified two architectural elements that are not structurally linked to the actual bridge but are nonetheless important character-defining features of the bridge that were constructed alongside the bridge itself.

a) On the southwest corner of Boyle Avenue and Whittier Boulevard in the Boyle Heights side of the 6th Street Bridge is a decorative pylon and semi-circular railing matching the
design and material of the 6th Street Bridge. A matching decorative feature appears to have once existed on the opposite side of the street. Located several hundred feet from the actual structure of the 6th Street Bridge, this architectural element appears to be an original 1932 feature and has served as a gateway feature to the subject bridge for the Boyle Heights community.

b) Directly beneath the 6th Street Bridge as it crosses Santa Fe Avenue on the western section of the bridge is a separate substructure consisting of a tunnel entrance leading to the Los Angeles River. The tunnel entrance as it descends below grade is surrounded by a decorative Art Deco-style railing, surrounding the opening on three sides. Low-height pylons with geometric and floral designs support pairs of octagonal light fixtures matching those on the subject bridge's deck.

The DEIR does not identify these two features and therefore does not explain whether these features would be demolished or retained in the alternatives. OHR staff has identified these as historic character-defining features of the 6th Street Bridge.

9) The DEIR fails to cite the Guidelines for Historic Bridge Rehabilitation and Replacement by the American Association of State Highway and Transportation Officials (AASHTO). Conducted as part of the National Cooperative Highway Research Program (NCHRPR) and requested by the American Association of State Highway and Transportation Officials (AASHTO) in 2007, the report sought to establish guidance for balanced and consistent decision making in “rehabilitation versus replacement” bridge projects. As a pertinent project dealing with these same issues, the report should be addressed as part of the DEIR.

10) Mitigation measures MM-4 and MM-15 in Section 4.9 of CEQA Evaluation appear to imply that an MOA has already been executed between SHPO, City of LA, and Caltrans. [4-31, 4-33] Proposed mitigation measures MM-4 and MM-15 state, “Implement all stipulations of the executed Memorandum of Agreement (MOA) between the State Historic Preservation Officer (SHPO), City of Los Angeles, and Caltrans.” The public and interested parties have not had the opportunity to review the DEIR and analysis the range of alternatives. It would therefore be inappropriate to bypass this discussion and skip directly to the selection of final mitigation measures that assume adoption of the preferred alternative identified in the FOE and DEIR. The Cultural Heritage Commission has not yet reviewed this MOA language. If the MOA is not yet executed, its inclusion in the DEIR would constitute deferred mitigation, which is impermissible under CEQA.

11) SHPO’s role in concurrence with a finding of eligibility and with the HPSR is very unclear. [3-137] If the subject bridge was formally determined eligible for the National Register, then SHPO concurrence should have occurred. It is also unclear why and whether there was no response from SHPO, since the State Historic Preservation Officer has participated in meetings on this proposal.

12) Chapter 2 of the DEIR acknowledges the vote taken by the Community Advisory Committee (CAC) in selecting the “Through Arches Category” replacement bridge type, but does not clarify that this is support for a full replication alternative. [2-49] The Public Input section of the Proposed Project Alternatives mentions the CAC’s majority vote for the “Through Arches Category” replacement bridge type (1-R). The summary text does not acknowledge that this is support for the existing historic bridge design. In the illustrated section for the alternative, Figure 2-17 states “This is the existing bridge” in describing the 1R alternative. This CAC supported alternative is also titled “Alternative 1R-Replication” in Figure 2-18.

13) The DEIR’s account of the Community Advisory Committee (CAC) actions and comments do not reflect the meeting minutes and the discussion by community members. [5-3] The summary of the CAC’s activities are vague and misleading:
a) The DEIR neglects to mention the CAC's vote on bridge alternatives that took place on August 28, 2007 (CAC Meeting #4). As stated in Comment 9, this vote for the replication/reconstruction alternative received the overwhelming majority of votes.

b) CAC Meeting #7 states “most CAC members present at the meeting were in support of the replacement alternative with the modern bridge type.” The meeting minutes do not indicate this assertion.

c) The description of discussions that took place on February 12, 2009 (CAC Meeting #8) is misleading, stating “a few CAC members were vocal about the bridge type (cable-supported concept) recommended by PDT.” This exchange was in fact opposition to the cable-supported alternative and concern that their vote in support for the replication/reconstruction alternative was disregarded.

14) The DEIR's Cooperating and Participating Agency Mailing List has incorrect contact information for the Office of Historic Resource, Department of City Planning. [Appendix J] The DEIR mailing lists Mr. Jay M. Oren, Historic Preservation Officer, with the Cultural Affairs Department. Mr. Oren has been retired from this position since 2006. The list also provides a mailing address at the Cultural Affairs Department for the Cultural Heritage Commission. The CHC has been under the auspices of the Department of City Planning since 2004. The mailing addresses should be corrected to ensure proper notification procedures.

As one of the most iconic and recognized bridges in Los Angeles, the 6th Street Bridge demands utmost care and dedication in developing a seismic improvement project that will ensure its continued legacy as a beloved landmark. The Cultural Heritage Commission trusts that these comments will be pertinent in addressing the concerns and issues regarding the potential loss of the 6th Street Bridge and in developing EIR alternatives that should allow for the maximum retention of the existing bridge and/or a Standards-compliant reconstruction option.

To ensure the Cultural Heritage Commission's continued input on this project, I formally request a future presentation at a scheduled public hearing upon the release of the Final Environmental Impact Report (FEIR). Your continued dialogue with the Office of Historic Resources and our Commission is greatly appreciated.

Thank you for this opportunity.

Sincerely,

RICHARD BARRON, President
Cultural Heritage Commission
Response to Comment Letter No. 11 – Cultural Heritage Commission

Commission

0. **Correction is made to CHC letter first paragraph, last sentence:** The 6th Street Viaduct is designated as Historic-Cultural Monument (HCM) #905.

1. **The Draft EIR neglects to cite the 6th Street Bridge’s designation as Historic-Cultural Monument #905 in the Executive Summary.** The Draft EIR/EIS (June 2009) included statements that the viaduct was designated as a City of Los Angeles Historic-Cultural Monument in January 2008 (see Section 3.9.2.5, Historic Architectural Resource Findings and Section 3.2., Section 4(f) Evaluation [Appendix B]). A statement is added to the introduction of the summary of the Final EIR/EIS indicating that the viaduct is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR), and that it is designated as Historic-Cultural Monument (HCM) #905.

2. **The DEIR should evaluate which alternatives would allow for the 6th Street Bridge to retain HCM status.** Several retrofit schemes were studied and evaluated in the DEIR/EIS; most of them could allow for retention of City of Los Angeles HCM status, depending on a determination by the Cultural Heritage Commission (CHC) and the city council. Most of them would maintain the integrity of the historic property (the 6th Street Viaduct) to convey its significance (based on maintaining its current location [alignment], use of the same materials [concrete], workmanship of concrete finishes) and minimize effects on the feeling and association below the deck level of the viaduct (use of infill walls between selected columns). Several historic bridges, including the 6th Street Viaduct, were seismically retrofitted in the past and were subsequently designated as City of Los Angeles HCM bridges. Section 4.4.1 (Cultural Resources) of the FEIR/EIS documented that the HCM status of the 6th Street Viaduct would likely be maintained under the retrofit alternative.

One of those schemes evaluated in the EIR/EIS included the full reconstruction/replication of the viaduct by replacing the ASR-damaged concrete within the existing viaduct while maintaining structural steel arch-spans, alignment, and width (see Section 2.4.1.8, page 2-39 of the Draft EIR/EIS). It was determined that there was no practical way to replace the bad concrete with new material without replacing all of the concrete. Implementation of this scheme would essentially require replacement of the entire viaduct. This alternative was withdrawn from further evaluation in the EIR/EIS because it does not meet the purpose of the project, nor would it remove the viaduct from the EBL list due to functionally deficient geometrics that would remain (see FEIR/EIS Section 2.5).

Another retrofit alternative, the Infill Walls/Heavy Steel Casing scheme, evaluated in the Draft EIR/EIS would retrofit the viaduct’s columns by encasing them with steel, and reinforced concrete infill walls would be constructed between selected columns. A 6-inch layer of architectural mortar would conceal exposed plates, channels and bars to maintain the visual look of concrete and texture. Exterior columns would be encased using steel plates, high strength pre-stressing bars and surface architectural mortar to hide the steel plates and maintain the concrete finish. Encasing all exterior columns with concrete mortar would also maintain visual balance and consistency for the retrofitted structure. 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 (maximum credible earthquake). This alternative would have a lower initial construction cost and may be desirable from a historic preservation point of view. However, retrofit is not preferred because it does not repair the existing condition or stop the ASR deterioration; it has high life-cycle cost; it does not correct the geometric design deficiencies of the existing viaduct; it would require reduction of the railroad horizontal clearances; and it would only meet a “no collapse” standard and significant damage could occur in a major earthquake, resulting in the need for viaduct replacement (see FEIR/EIS Section 2.5).

In addition to the retrofit alternative described above, a Substructure Replacement Alternative was developed to resolve the ASR deterioration within the substructure and to strengthen the lateral support system (seismic). If implemented, this retrofit scheme could allow for retention of City of Los Angeles HCM status, depending on a determination by the CHC. This alternative would replace all substructure (below deck) elements, including piles, footings, grade beams, columns and bent caps, to accommodate the anticipated seismic demands. The design would include substructure replacement for the length of the entire structure. In addition, this retrofit scheme would replace the existing substandard concrete barrier; the new barrier would be similar to the aesthetics of the existing barrier. By replacing the substructure elements rather than using traditional strengthening retrofit solutions, as in the Infill Wall/Heavy Steel Casing Alternative, the viaduct’s aesthetics and historic nature could be retained by utilizing architectural features that are compatible with the existing members. This alternative was withdrawn from full environmental evaluation due to major constructability problems, much higher cost (see FEIR/EIS Section 2.5), and significant superstructure damage could occur in a major earthquake, resulting in the need for viaduct replacement.

In addition to the retrofit schemes mentioned above, Bridge Concept 1A – Replication from Abutment to Abutment with a wider structure was evaluated during the preparation of the FEIR/EIS, in response to Community Advisory Committee (CAC) requests. (Replication was used here to mean that the structure would have a similar architectural look, but would meet current design standards, such as width, alignment, safety barriers and structural detailing.) Bridge Concept 1A would be identical to Concept 1 (Main Span Replication) between the riverbanks. The design would be similar to the original design with complimentary dual arches and main center pylon with belvederes providing pedestrian viewing areas as in the original 1932 design. Unlike Concept 1, which employs long span box girders with fewer columns east and west of the river similar to the other replacement concepts, refinement Concept 1A would repeat the short span haunched girders with numerous support columns of the original structure from the riverbanks to the ends of the viaduct. While this alternative would maintain the integrity of the property to convey its significance, based on use of the same materials (concrete and structural steel arch spans), workmanship of concrete finishes, architectural style, and feeling associated above and below the deck level, the viaduct alignment and width would be designed to current standards. This alternative may allow for retention of City of Los Angeles HCM status, depending on a determination by the CHC regarding the alignment shift and wider deck. Due to construction constraints and relatively high cost associated with the
construction of this bridge concept, it was not advanced for detailed impact analysis in the Final EIR/EIS.

3. **The DEIR does not provide a full replication/reconstruction alternative.**

3.1 As discussed in Response No. 2 above, several retrofit schemes were studied and evaluated in the Draft EIR/EIS, one of those schemes included the preserving the general appearance of the viaduct by replacing the ASR-damaged concrete within the existing viaduct while maintaining structural steel arch-spans, alignment, and width (see Section 2.4.1.8, page 2-39 of the Draft EIR/EIS). In addition, Bridge Concept 1A – Replication from Abutment to Abutment was developed, as discussed in Response No. 2 above. Bridge Concept 1A would be similar to the original architecture with complimentary dual arches and main center pylon with belvederes providing pedestrian viewing areas as in the original 1932 design. Concept 1A would replicate the short span haunched girders with numerous support columns of the original structure from the riverbanks to the ends of the viaduct, columns having the architectural style of the existing viaduct. Concept 1A would maintain the integrity of the property to convey its significance from abutment to abutment (based on use of the same materials (concrete and structural steel arch spans), workmanship of concrete finishes, architectural style) and minimize affects on the feeling and association below the deck level, the viaduct alignment and width would be designed to current safety standards. However, the deck width and resulting association between the arch ribs and overhead latticework bracing (feeling/association), and alignment (location) would be designed to current standards; thereby not fully replicating the existing viaduct historic character-defining elements.

3.2 The materials, seismic, and functional deficiencies of the 6th Street Viaduct are different from the Colorado Street Bridge, each with unique issues and solutions. The paragraphs that follow describe why 6th Street Viaduct cannot be reconstructed the same way as the Colorado Street Bridge.

Figure 1 compares 6th Street Replacement to the Colorado Street Bridge Rehabilitation Project in Pasadena. Retrofit alternatives Infill Walls/Heavy Steel Casing and Substructure Replacement are rehabilitation strategies similar to that used at the Colorado Street Bridge. While there are similar issues, there are major differences.

1) The structural strength at Colorado Street Bridge could be restored where as the concrete at 6th Street Viaduct has the ongoing chemical reaction ASR, and is not repairable. At Colorado Street Bridge, the concrete had high levels of carbonation that caused reinforcing steel corrosion and sequential concrete cracking. However, the damage could be repaired by removing concrete around the reinforcing steel with high level of carbonation and replacing the steel with epoxy coated steel. In the case of 6th Street Viaduct, the steel is not attacked, rather the concrete itself deteriorates.

2) The geometric and alignment deficiencies cannot be remedied at 6th Street Viaduct due to the roadway width (no shoulders or median), alignment (kink), and existing arches (sight distance). The Colorado Street Bridge does not have these deficiencies.

3) The design life that would result by rehabilitation of 6th Street Viaduct using substructure replacement is less than 30 years, due to continuation of ASR
deterioration, resulting in very high life cycle cost. The 1993 construction cost of the Colorado Street Bridge rehabilitation was $27M, providing a new design life of 75 years.

Figure 1 – Comparison Between 6th Street Viaduct and the Colorado Street Bridge (Substructure Replacement Retrofit Alternative)

<table>
<thead>
<tr>
<th></th>
<th>6th Street</th>
<th>Colorado Street</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete Condition</td>
<td>Not Repairable (ASR)</td>
<td>Repairable (Carbonation)</td>
</tr>
<tr>
<td>Sight Distance Deficiencies</td>
<td>Not Correctable</td>
<td>None</td>
</tr>
<tr>
<td>Design Life (after rehabilitation)</td>
<td>Less than 30 years</td>
<td>75 years</td>
</tr>
</tbody>
</table>

- Replace - Foundations Columns Piers Bent Caps Barrier Rails
- Replace - Deck & Spandrel Columns
- Repair - Piers and arches

4. **The DEIR relies upon artificial constraints on the proposed bridge’s width, which have significantly driven the analysis of project alternatives.**

4.1 The City of Los Angeles Department of Transportation (LADOT) recommends the standard width for the 6th Street Viaduct based on the following reasons:

1. 6th Street is classified as a secondary highway in the City’s General Plan. The City standards for highways and streets that are approved by the City Engineer and the City Council and used as a basis for all developer land dedications call for 70 feet curb-to-curb width for a 4-lane highway and 10-foot sidewalks.

2. Currently the roads at either end of the viaduct are not built per secondary highway standards, but this does not justify building a new facility to a substandard cross section. Eventually when developers propose projects at both ends of the viaduct, the City will require land dedication to build the roadway per City standards. The ultimate goal is to have the entire 6th Street width comply with the City’s General Plan.

3. The recommendation to construct the viaduct per City’s standards was not based on "artificial" constraints. It was based on a number of factors, including accidents data, lack of separation between opposing traffic lanes, lack of shoulders, current deficient geometry including horizontal and vertical alignments; the lack of shoulders does not allow room to add bike lanes to be consistent with the 2010 Bicycle Plan.
4. The viaduct needs to be wider at both east and west terminal points to conform to existing conditions. At the east end of the project, the City shares this facility with the State (Caltrans). The 6th Street Viaduct extends over the US 101 freeway and joins the State overcrossing structures across the I-5 freeway. Currently the State’s structure is over 70-foot wide. A portion of the 6th Street viaduct is located within State right-of-way and provides access to US 101. In order to meet the State’s standards the width needs to be a minimum of 70 feet. At the west end of the project, 6th Street transitions from a 4-lane roadway to a 5-lane to allow for the westbound 10-foot left turn lane onto Mateo Street. A uniform curb-to-curb width is recommended to enhance safety, geometry and meet driver expectations.

4.2 The 6th Street Viaduct is designated as a secondary highway. The existing viaduct’s roadway configuration does not meet the City’s design standards for a secondary highway because there is no safety median, no outside shoulders to accommodate vehicle breakdowns, as well as bicycles, and inadequate sidewalk width. The roadway width and alignment configurations under the Replacement Alternative are designed to current safety standards to meet the requirements of local/state/federal codes and funding sources.

The guidelines for Historic Bridge Rehabilitation and Replacement by the American Association of State Highway and Transportation Officials (AASHTO) note that substandard roadway geometry may be acceptable for those structures (bridges/viaducts) with average day traffic (ADT) less than about 400. The ADT for the 6th Street Viaduct is approximately 13,000; therefore, under the Replacement Alternative, the viaduct roadway is designed to provide for 4 lanes of traffic, the same as the existing facility, but is wider to meet current standards.

4.3 Based on the reasons explained under 4.1 and 4.2, the FEIR/EIS did not evaluate the alternative to replace the viaduct without upgrading it to meet the current standards.

The Historic Resources Evaluation Report (HRER) prepared for this project as part of the Section 106 consultation did not identify the 6th Street Viaduct footprint as a character defining feature. For the reasons discussed under 4.1 and 4.2, the scope of the project cannot be accomplished with in the footprint of the current bridge because 70 feet curb-to-curb is needed to meet City standards and the bridge only has 46 feet curb-to-curb.

5. The DEIR should include study of an additional partial preservation alternative.

5.1 The DEIR did study several partial preservation alternatives including a number of retrofit schemes such as Substructure Replacement. A total of 10 retrofit schemes, which included structure retrofit, replacement of damaged concrete, reconstruction with replication and partial reservation, were evaluated as part of the Alternative Development Process, as documented in Appendix N of the FEIR/EIS. Based on the results of the evaluation, only the Infill Wall and Heavy Steel Casing scheme was found to be a reasonable alternative to be analyzed in the environmental document. The rest of the retrofit schemes were dismissed for not meeting the purpose and need of the project, having major constructability problems, or having unreasonably high cost. For all practicable retrofit alternatives considered, the completed project would provide a limited additional design.
life of approximately 30 years (due to continuing ASR damage), and a design seismic event (maximum credible earthquake) within the design life period would likely damage the structure so heavily that replacement would be required.

5.2 The DEIR/EIS erroneously stated that the 6th Street Viaduct contributed to a NRHP- and CRHR-eligible district. The 6th Street Viaduct was found to be individually eligible for listing in the NRHP and CRHR. It was also determined eligible as one of a thematic group (erroneously called a district in the DEIR/EIS) of 118 “Historic Highway Arch and other bridges in California” as part of the Caltrans Statewide Bridge inventory in 1987. The information was corrected accordingly in the FEIR/EIS.

6. **The potential mitigation measures under Alternative 3-Replacement in Chapter 3.9 (Cultural Resources) are inadequate.**

6.1 The proposed mitigation measure to install two Cultural Heritage Commission plaques at each end of the replacement bridge has been eliminated in the Final EIR/EIS and Section 4(f) Evaluation in response to this CHC comment, and it was not incorporated as a preservation stipulation in the Memorandum of Agreement (MOA) with the State Historic Preservation Officer (SHPO) nor is it included in the CEQA mitigation measures.

6.2 The City will consider potential architectural enhancements in the replacement viaduct that will be similar to the existing bridge, and under the MOA and CEQA mitigation measures the design drawings will be submitted to the SHPO for review and comment.

Under MOA Stipulation G, the City is also receptive to relocating architectural elements of the existing bridge, such as the iconic steel arches, to a new location in a public setting. This will be stipulated in the Record of Decision (ROD) approved by Caltrans as a designee of the Federal Highway Administration (FHWA), and in the CEQA mitigation measures approved by the City Council with the Final EIR.

6.3 Several stipulations under the MOA are education-related. The City of Los Angeles will include schools in Boyle heights and Downtown Los Angeles on the list of recipients for educational materials produced as part of the relevant mitigation measures under this project.

7. **The proposed location for the retention and reuse of the historic bridge’s original steel arches in the replacement alternatives may be inappropriate.** The existing steel arches cannot be reused as structural load-carrying members for any of the replacement concepts under Alternative 3. The appropriateness of potential re-use or design expressions will be evaluated during the final design phases with input from key stakeholder groups.

One of the stipulations in the MOA states that “the City shall offer artifacts removed from the Viaduct during demolition to local museums, or other suitable facilities to be determined by the City. The accepting institutions shall arrange their own transportation to deliver the artifacts to designated locations.” The City will work with any interested local museums or other entities with suitable facilities to identify an appropriate reuse/preservation strategy and location for the steel arches, if that is requested, in consultation with local preservationists.
8. The DEIR is silent on the effects of the proposed alternatives on architectural elements of the subject bridge that are not structurally linked to the 6th Street Bridge.

8.1 The decorative pylon on the southwest corner of Boyle Avenue and Whittier Boulevard will not be demolished or removed. It is located outside of the project limits.

8.2 The EIR/EIS identifies the tunnel features as part of the historic 6th Street Viaduct property. As Section 3.9.2.5 states, “The boundaries of the historic property include the entire bridge: its abutments, bents and piers, all approaches, the deck, all handrails, streetlight standards and luminaires, the river access tunnel, the steel and concrete arches, the spandrels, and the areas below the decks that contain bridge-related structures.” The FEIR/EIS describes the components of the river access tunnel (Section 3.6.1.2) and the potential impacts to it under Retrofit Alternative and Replacement Alternative (Section 3.6.2.1). Under the Replacement Alternative, the river access ramp, tunnel, and portals could require reconstruction to accommodate the construction of new columns and foundation. The tunnel may be impacted under any of the replacement alternatives depending on how the new west main span abutment/bent is configured. If the selected bridge type requires the tunnel and access ramp to be reconstructed, it could be designed to match the architectural style and theme of the new viaduct, including both the entry access point and the portal at the river bank. The components of the tunnel that would be subject to demolition, if required, would be treated under the same mitigation measures stipulated in the MOA.

9. The DEIR neglects to cite the Guidelines for Historic Bridge Rehabilitation and Replacement by AASHTO. The PDT did consider and apply the principles of the AASHTO guidelines, as documented in Section 2.3.2 of the FEIR/EIS for clarity. The guidelines provide a methodology to determine the potential for rehabilitation or replacement of a historic bridge, as outlined in Figure 2.

The 6th Street Viaduct falls into Group VI (Superstructure/ Substructure Condition, Geometry, and Load-Carrying Capacity Are Inadequate, see Figure 3) – “Bridges in this group are severely deteriorated and severely deficient. When a bridge is deficient in all categories and those deficiencies cannot be corrected in a feasible and prudent manner, it is very unlikely to have rehabilitation potential.”

Based upon the AASHTO guidelines, it is very unlikely that the 6th Street Viaduct has rehabilitation potential. The primary reasons are:

1. The load carrying capacity of the structure for seismic loading is doubtful considering existing concrete is damaged and continues to be attacked by ASR. Seismic retrofit schemes for concrete structures use drill and bonding techniques into existing concrete to add structural elements to resist seismic demands. However, the existing concrete at 6th Street Viaduct is not dependable.

2. The live and dead load carrying capacity of the structural system will continue to decrease as the concrete ASR continues with time.
3. The horizontal, vertical alignments along with the arch ribs create a safety issue related to sight distance near the ‘kink’ in the alignment. On such long viaducts, speed control devices and patrolling are not likely to prevent future accidents.
4. Barrier rails are under strength for vehicle impact loads and the shape will not deflect vehicles in a controlled fashion.

5. Roadway width is substandard with no median or shoulders.

6. The concrete within the substructure and superstructure is in very poor condition.

7. Major maintenance work will be required in the future as the ASR will continue.

8. The retrofit cost is more than 50 percent of the replacement cost.

9. The life cycle cost of the retrofit is approximately double the replacement life cycle cost.

10. The seismic criterion for the retrofit is “no collapse.” It is likely that after a design seismic event, the retrofitted structure could be so severely damaged, that it would need replacement at that time.

10. **Mitigation measures MM-4 to MM-15 in Section 4.9 of CEQA Evaluation (MM3-11 to MM3-18 in FEIR/EIS) appear to imply that an MOA has already been executed between SHPO, City of LA, and Caltrans.** The MOA had not been executed by SHPO, the City of Los Angeles, and Caltrans at the time of circulation of the Draft EIR/EIS. As stated in the Draft EIR/EIS mitigation measures pertaining to Cultural Resources (Section 3.9), Caltrans “would consult” with the SHPO regarding a MOA for this proposed project. The Draft EIR/EIS went on to say “the MOA would address the preferred alternative, which has not been determined at this time” (see Section 3.9.4). The “potential mitigation measures” presented in the Draft EIR/EIS (in Chapters 3 and 4, and in the Draft Section 4(f) Evaluation) were offered as “anticipated” measures to be incorporated in an MOA addressing the preferred alternative, which had not been determined at that time. As stated in the Draft Section 4(f) Evaluation (Draft EIR/EIS, Appendix B, Section 4.9.1), “A Memorandum of Agreement (MOA) will be prepared by Caltrans and submitted to FHWA and the SHPO for comment. … Once FHWA and SHPO agree on the terms and conditions of the MOA, it will be executed and Caltrans will concur. The conclusions of this analysis will be presented in the Final Section 4(f) Evaluation that will be circulated with the Final EIR/EIS.”

The MOA was subsequently approved by all parties in May 2010, and its stipulations are included in the Final EIR/EIS and will be incorporated in the ROD as well as in the CEQA mitigation measures. It should be noted that even if the MOA has been signed, it does not preclude the City of Los Angeles (as the CEQA lead agency) from adopting additional measures to mitigate impacts. The MOA is an agreement document between Caltrans (on behalf of FHWA), the ACHP and SHPO for Section 106 compliance and therefore may be resolved prior to completion of the CEQA process. Section 106 is a federal law and is not tied to the CEQA process. 36 CFR 800.2 allows for integrating Section 106 review into other processes (such as NEPA); although Section 106 documentation may be used to support CEQA studies, it does not replace CEQA. Therefore findings may be different for the two separate laws as well as mitigation measures to resolve adverse effects or mitigate significant impacts. Mitigation MM-17 which is one of the stipulations in the MOA (“Offer artifacts removed from the viaduct during demolition to local museums, or other suitable facilities to be determined by the City. The accepting institutions shall arrange their own transportation to deliver the artifacts to designated locations”) provides an
opportunity for the City to work with CHC staff and any other interested parties to
determine the appropriate way to reuse any requested artifact(s) from the viaduct.

11. **SHPO's role in concurrence with a finding of eligibility and with the HPSR is very unclear.** Per stipulation VIII.C.5.a of the January 1, 2004 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding compliance with Section 106 of the National Historic Preservation Act, Caltrans must submit the Historic Property Survey Report (HPSR) to the SHPO for concurrence with the eligibility findings. The SHPO has 30 days to respond to the findings of the HPSR. When the 30-day period elapsed after submittal of the 6th Street Viaduct HPSR to SHPO, Caltrans assumed concurrence and proceeded with the project.

12. **Chapter 2 of the DEIR acknowledges the vote taken by the Community Advisory Committee (CAC) in selecting the “Through Arches Category” replacement bridge type, but does not clarify that this is support for a full replication alternative.** The text in the Final EIR/EIS has been clarified to say that the highest number of CAC votes was for the existing bridge type (Through Arches Category), a bridge type with a design that is similar to the existing viaduct from abutment to abutment (see Final EIR/EIS, Appendix N, Section 3.2.3, Public Input).

13. **The DEIR’s account of the Community Advisory Committee (CAC) actions and comments do not reflect the meeting minutes and the discussion by community members.**

13.1 Section 2.4.2.2, Public Input Subsection of the DEIR, referred to the number of votes received for each bridge type. This information is clarified relative to the CAC vote on the abutment to abutment replication in the FEIR/EIS, as described in response to comment 12.

13.2 The text was revised in the FEIR/EIS to reflect the minutes.

14. **The DEIR’s Cooperating and Participating Agency Mailing List has incorrect contact information for the Office of Historic Resource, Department of City Planning.** The information was corrected in the FEIR/EIS.
July 28, 2009

Ronald J. Kosinski, Deputy District Director
Division of Environmental Planning
Department of Transportation, District 7
100 S. Main Street MS-16A
Los Angeles, CA 90012

SUBJECT: 6th STREET VIADUCT SEISMIC IMPROVEMENT PROJECT – STREET LIGHTING COMMENTS TO DRAFT EIR/EIS OF JUNE 2009

The City of Los Angeles, Bureau of Street Lighting (BSL) has had contact with the author of this Draft EIR/EIS regarding the street lighting design concept for the subject project. However, BSL does have the following comments to the Draft EIR/EIS:

1. You did not address nighttime glare and light pollution from both permanent and temporary lighting systems. Except for fixtures that are fabricated to replicate the historical bridge lighting in the 1930s, all new and temporary lighting fixtures should be cutoff and directed away from private property.

2. On Page 16, 1st Paragraph, Last Sentence, it states, “As part of the barrier replacement, the existing luminaires would be replaced with light standards replicating 1930s design.” BSL would like to make that sentence clearer by saying, “As part of the barrier replacement, all existing cobra-head luminaires and arms would be replaced with new fabricated ornamental lanterns and standards replicating the original 1930s design.” In addition, BSL would like to insert this new sentence: “BSL is not required to meet current City adopted lighting standards because the Sixth Street Viaduct is protected by the State Historical Building Codes. BSL will, however, provide the best feasible illumination levels and uniformity ratios for both roadway and sidewalks.”

3. On Page 25, Design Standards Section (for a total bridge replacement alternative), 1st Sentence states, “...designed to meet the City’s street design standards.” BSL would like to modify it: “...designed to meet the City’s current street and street lighting design standards.”

If you have any questions or require any additional information, please contact Silva Batikian at (213) 847-1524 and silva.batikian@lacity.org.

Sincerely,

Ed Ebrahimian
Director

L:\$TRANSIT\BIP\6th St. bridge/Comments to EIR.doc
Appendix M  Written Comments and Responses on DEIR/EIS

Response to Comment Letter No. 12 – City of Los Angeles Bureau of Street Lighting (BSL)

1. **Nighttime glare and light impacts.** Alternative 3, replacement, could likely include accent lighting. The architecture of the electroliers and fixtures will be determined during the final design phase. Final design of accent lighting will need to address nighttime glare and light effects. Discussion of potential nighttime glare impacts from accent lighting has been added in the Final EIR/EIS (see Sections 3.8.3.1 and 3.8.3.2).

2. **Add language to clarify the lighting requirement.** The paragraph under Section 2.5, Substructure Replacement, of the FEIR/EIS was revised with the wording requested by BSL.

3. **Add language to clarify standard requirement.** This wording change was made in Section 2.3.3.4 of the FEIR/EIS, under Design Standards.
Thank you Mr. McCutcheon. Your comment has been received and will be given consideration in the preparation of the final version of the EIR/EIS.

wally

From: <glaciervp@aol.com> [mailto:glaciervp@aol.com]
Sent: Wednesday, July 29, 2009 6:08 PM
To: <wally.stokes@lacity.org>
Subject: 6th Street Viaduct

Mr. Stokes,

My name is Richard McCutcheon and I am the general manager of Glacier Cold Storage located at 2233 Jesse Street. The property line at the back of the property I operate borders the bridge property. We also currently utilize the property directly under the bridge as a subtenant of a lease from the city.

My concerns after attending the meeting on Tuesday, July 21, are that our property will be infringed upon during the demolition phase or during the renovation phase (should that option be chosen). This will hamper the operation of my tenant and force him to move to a different facility. This would cause my business great financial harm.

I was told there are technologies available that would allow demolition without such an infringement. I am asking for such technologies to be seriously considered when this project moves forward.

I have made provisions already for a contingency plan to divert our "under the bridge" requirements to another piece of property we have.

I hope this comment goes on record and that it is taken into consideration.

Sincerely,
Richard McCutcheon
Glacier Cold Storage
2233 Jesse Street
Los Angeles, CA 90023
(323) 526-3623
Cell (818) 825-9914
Sent via BlackBerry by AT&T
Response to Comment Letter No. 13 – Glacier Cold Storage

1. **Impacts on business operations from project construction.** Special provisions to protect properties located adjacent to the bridge will be included in the project specifications. Prior to demolition, the contractor will be required to submit the means and methods for demolition for City review and approval. During the demolition period, construction inspectors will ensure that the contractors adhere to the approved plan.

2. **Concern about impacts from demolition.** Special provisions to protect properties located adjacent to the bridge will be included in the project specifications. Prior to demolition, the contractor will be required to submit the means and methods for demolition for City review and approval. During the demolition period, construction inspectors will require the contractors to adhere to the approved plan.

3. **Owner has arranged its own contingency plan to minimize impacts from the project.** Comment noted.
August 6, 2009

Mr. Ronald J. Kosinski, Deputy District Director
Division of Environmental Planning
Department of Transportation, District 7
100 South Main Street MS-16A
Los Angeles, CA 90012

Dear Mr. Kosinski:

NOTICE OF PUBLIC HEARING AND AVAILABILITY OF
DRAFT ENVIRONMENTAL IMPACT REPORT
ENVIRONMENTAL IMPACT STATEMENT
6TH STREET VIADUCT SEISMIC IMPROVEMENT PROJECT

We reviewed the Draft Environmental Impact Report for subject projects. The proposed 3,500-foot-long 6th Street improvement project is needed to safeguard the critical Los Angeles River crossing from failure in a major earthquake by either retrofitting the existing structure or replacing it entirely.

The following comments are for your consideration and relate to the environmental document only:

Hazards–Flood/Water Quality

1. The proposed project may impact some of the proposed improvements outlined in the Los Angeles River Master Plan (LARMP). The LARMP is available at http://dpw.lacounty.gov/wmd/watershed/LA/LARMP for reference. Impacts to the proposed improvements in this area should be minimized.

2. The pollutants of concern listed on page 3-162 are for the Los Angeles River, Reach 1. The proposed project is located in the Los Angeles River, Reach 3. Therefore, this document should list pollutants of concern and appropriate mitigation for the Los Angeles River, Reach 3.
Mr. Ronald Kosinski  
August 6, 2009  
Page 2

If you have any questions regarding flood/water quality comments above, please contact Mr. Diego Rivera at (626) 458-3978.

If you have any other questions or require additional information, please contact Mr. Toan Duong at (626) 458-4945.

Very truly yours,

GAIL FARBER  
Director of Public Works

DENNIS HUNTER, PLS PE  
Assistant Deputy Director  
Land Development Division

MA:ca  
P:\dpub\CEQA\CDM\Caltrans - 6th STREET VIADUCT SEISMIC IMPROVEMENT PROJECT_NOP\DEIR.doc
1. **Impact to Los Angeles River Master Plan (LARMP).** The EIR/EIS analyzed potential impacts to the Los Angeles River (See Sections 3.10 and 3.11). With the exception of Bridge Concept 1, implementation of any alternative alignment and bridge concept would not affect river hydraulics and designated beneficial uses of any range of the Los Angeles River. Since bridge Concept 1 is not the preferred alternative, no impact to the LARMP is anticipated. In addition, the various bridge replacement concepts have been developed keeping in mind compatibility with the Los Angeles River Revitalization Master Plan (LARRMP) which was developed to be consistent with the LARMP. Issues, such as river access, structural impediments, and aesthetics, were part of the screening criteria of the proposed options.

2. **Incorrect information about pollutants of concern.** The text in Section 3.11.2 of the FEIR/EIS regarding the pollutants of concern has been revised.
August 13, 2009

Wally Stokes
City of Los Angeles-Dept. of Public Works
221 N. Figueroa, Suite 350
Los Angeles, CA 90012

Dear Mr. Stokes:

Re: SCH# 2007041015: 6th Street Viaduct Seismic Improvement Project

The California Public Utilities Commission’s (Commission) Rail Crossings Engineering Section (RCES) is in receipt of the Notice of Completion & Environmental Document Transmittal- Draft EIR from the State Clearinghouse for the City’s proposed 6th Street improvement project that includes possibly retrofitting the existing structure or replacing the existing grade separation over the BNSF, Union Pacific Railroad Company, Metrolink and Los Angeles County Metropolitan Transportation Authority tracks.

The California Public Utilities Code requires Commission approval for the construction or alteration of crossings and grants the Commission exclusive power on the design, alteration, and closure of crossings. A request for authorization must be submitted to RCES. The design criteria of the proposed project must comply with Commission General Orders (GOs), such as, GO 26-D: “Clearances on railroads and street railroads as to side and overhead structures, parallel tracks and crossings.”

City should arrange a meeting with RCES staff to discuss relevant safety issues and requirements of for authority to modify the existing 6th Street overpass (CPUC crossing number 101 RI-483.65-A, U.S. DOT number 811256T).

Thank you for your consideration of these comments and we look forward to working with the City on this project. If you have any questions in this matter, please contact Sergio Licon, Utilities Engineer at 213-576-7085, sal@cpuc.ca.gov, or me at rxm@cpuc.ca.gov, 213-576-7078.

Sincerely,

Raúl Muñoz, PE
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection & Safety Division
Response to Comment Letter No. 15 – State of California Public Utilities Commission

1. **Project construction requires Commission approval.** A request for authorization will be submitted to the Rail Crossing Engineering Section (RCES) during the final design phase. The design criteria of the project will be in compliance with the General Orders (GOs), including GO 26-D. The required approval from the California Public Utilities Commission has been added to Section 3.6.2 of the FEIR/EIS.

2. **A meeting with RCES is suggested.** A mitigation measure requiring the City to meet with RCES staff during the final design phase to discuss safety issues and rail crossing replacement permit requirements was added to Section 3.6.3 of the FEIR/EIS.
August 14, 2009

Department of Transportation – District 7
State of California
100 S. Main Street
Los Angeles, CA 90012-3606

RE: 6th Street Viaduct Seismic Improvement Project
Draft EIR/EIS

For the last 23 years, the Central City East Association has served as the principal voice and advocate of eastern Downtown Los Angeles. We are a 501(c)(6) not-for-profit organization that administers the Arts District, Toy District and Downtown Industrial Business Improvement Districts (BIDs). Through these three BIDs, we represent 1,100 property owners, 1,600 businesses, and 15,000 employees. Our BID districts span 110 blocks of Downtown L.A.

The Arts District BID spans the area roughly bounded by the 101 freeway, Alameda, 7th Place and the Los Angeles River. The Arts District community is evolving from a traditional manufacturing base with a vibrant artistic community to an increasingly 24-hour live/work neighborhood with new and varied amenities that include fine dining and after-hours establishments. The heavy industrial and more modern uses are thriving successfully side-by-side, placing increasing demands on mobility within and into the district.

Our members have been closely following the 6th Street Viaduct Seismic Improvement Project. We have attended meetings, hosted briefings, and communicated regularly with representatives of both City and State agencies. We understand the importance and significance of this project, but we must take this moment to underscore the potential for serious impacts to the economic vibrancy of the Arts District.

During the period the Viaduct will be under construction, our members will not only be inconvenienced due to the required detours. Their businesses will suffer economic hardships. The Arts District is home to large national distribution warehouses and food processing centers. Both rely on the local streets for goods

723 South Crocker Street Los Angeles CA 90021-1411 213.228.8484 fx 213.228.8488 www.centralcityeast.org
Appendix M  Written Comments and Responses on DEIR/EIS

movement and connections to freeways and highways en route to the ports, the airports, and for ground routes. Some businesses here today will survive the Viaduct project; others may not. These business stakeholders require considerable lead time to prepare for a change in how they do business. Some of these businesses cannot relocate; for others, relocation would require months of pre-planning, if not longer, due to the logistical requirements of their distribution commitments.

These types of businesses are not sure what to anticipate. They understand that the final design decisions have yet to be made. Nevertheless, they are facing an uncertainty that could cost them their future. Therefore, we urge you to give the highest priority to a business information campaign and the hiring of a business impact specialist whose only responsibility would be to resolve the challenges this project will impose on businesses in the project zone.

Potential impacts to business will go beyond those posed by street closures and detours, of course. Dirt and debris, the environmental hazards in the materials, soil, groundwater and air, will all contribute to an unhealthy working and living environment for Arts District stakeholders. Fortunately, Arts District business and live-work stakeholders are a highly connected population, presenting you with an opportunity to use a message distribution network that communicates with stakeholders directly using the latest technology. It will be incumbent on you to maintain on-going dialogue with our stakeholders informing them of the environmental impacts on a day-to-day basis.

Finally, considering the replacement of the historic 6th Street bridge and the loss of the historical elements on the west side of the river (the tunnel entrance leading to the Los Angeles River has a concrete decorative Art Deco railing that corresponds with the historical classic styling of the bridge), we are anticipating that this project will include elements that will contribute to the cultural, health and wellness of the community that will host the detrimental impacts of the project for years. For example, Arts District property owners, residents and business have long desired green space. The Viaduct project provides an opportunity within the newly created underside for this green space with elements such as a park/pocket park, dog park, dog run etc. that can be utilized by residents and employees of the local businesses.

Thank you for this opportunity to submit our comments and respectfully request that you take them into consideration in your on-going decisions regarding this project.

Sincerely,

ESTELA LOPEZ
Executive Director

cc: Hon. Gil Cedillo, State Senator
    Hon. John Perez, Assemblyman
    Hon. Jose Huizar, City Councilman
Appendix M Written Comments and Responses on DEIR/EIS

Response to Comment Letter No. 16 – Central City East Association

1. **Viaduct construction could lead to the permanent closure of some area businesses.** Considerable lead time is required to prepare and implement coping measures, including relocation. The City will work with the businesses within the project area to help mitigate the impacts. The relocation assistance program would be part of this process.

2. **Arts District business and live-work stakeholders are a highly connected population, presenting an opportunity to use message distribution networks that communicate with stakeholders directly.** As described in several sections of the EIR/EIS, a Traffic Management Plan (TMP) would be developed to assist local businesses in continuing operation during the construction period. The TMP would identify and provide alternate traffic detour routes, pedestrian routes, and commercial access routes to be used during the construction period. In addition, the City-mandated Work Area Traffic Control Plan (WATCP) would be strictly implemented by the contractor during project construction. The Arts District message distribution network will facilitate interaction and communication with the affected business community during development of the TMP.

3. **The Viaduct project provides an opportunity within the newly created underside for this green space with elements such as a park/pocket park, dog park, dog run, etc. that can be utilized by residents and employees of the local businesses.** While open space in the form of right-of-way (ROW) parcels underneath and adjacent to the viaduct footprint would occur as a result of property acquisition for the preferred alternative, no use of this property has been determined at this time. Interested parties have expressed varying ideas for the disposition of this land, which will be the subject of future planning and community input.
Kochaon, Anne

From: John McShane [john_mc@stoverseed.com]
Sent: Friday, August 14, 2009 11:16 AM
To: wally.stokes@lacity.org
Subject: Comment to Draft EIR

August 14, 2009

TO:
Mr. Wally Stokes
Environmental Coordinator
City of Los Angeles Bureau of Engineering
Wally.stokes@lacity.org

Mr. Carlos Montez
Caltrans District 7
Environmental Planning Department
Carlos.montez@dot.ca.gov

Mr. Sam Wong
Senior Real Estate Officer
City of Los Angeles, Dept of Public Works
1149 S. Broadway, Ste 610
Los Angeles, CA 90015
Sam.wong@lacity.org

FROM:
STOVER SEED COMPANY
Stephen Knutson, CEO
John McShane, President
1415 E. 6th Street
Los Angeles, CA 90021
Stephen_k@stoverseed.com
John_mc@stoverseed.com

Response to Draft EIR/EIS, 6th Street Viaduct Improvement Project.
Parcels 51, 52, 53, 54 corner of 6th Street and Mateo Street and parcel 4 on Willow Street.

Gentlemen:

Stover Seed Company is an 87 year old family business that has been operating at the corner of 6th and Mateo streets since the mid 1950’s. We are a seed blending, packaging and distribution company that services the consumer and commercial markets. Among our customers are the City of Los Angeles, LAUSD and Caltrans. We currently have 19 full-time employees and 19 part-time employees. 15 full-time employees work out of our offices and warehouse on 6th street.
We have reviewed the draft EIR/EIS and participated in several project information meetings concerning this project. Any of the alternatives proposed in the report will have a material impact on the operation of our business.

The various options listed in the report all require that the bridge be widened which would eliminate the 6th street frontage road. The frontage road provides the only access to our parking lot. While there is access to our office and warehouse from the loading dock on Willow Street (parcel 4) the access is not safe for customers nor is there parking available.

The elimination of the 6th Street frontage road will:
1. Eliminate access to our 12 vehicle parking lot.
2. Force employees and customers to find parking on nearby streets that are already at capacity during normal work hours.
3. Render the parking lot space useless and inaccessible.
4. Eliminate customer access to the front door of our offices and create only one exit for office employees in the event of an emergency.
5. Force customers to enter our business through the rear, via Willow Street and enter the offices through the warehouse creating safety and security issues.
6. Eliminate small parcel delivery and flatbed truckload deliveries at our front warehouse doors.
7. Eliminate egress of our fork lift to unload trucks on Willow Street where we store some bulky materials.

Section 5.5 of the draft states that a survey of business operations was done that “identified issues and concerns.” While our firm was visited early in the process and a few, brief questions were asked, there was no mention of the bridge project nor was there any attempt to identify “issues of concern” that such a bridge project would create. Only within the last month have city officials visited our firm to identify and discuss the issues listed above.

We realize that that bridge project needs to go forward and ask that the agencies involved in this project consider the impact on a long standing, small business that is a stable employer and contributes to the city tax base. Stever Seed Company wishes to remain a downtown business. We are available and willing to work with the city to resolve the issues that we face.

Sincerely,

Stephen Knutson, CEO

John McShane, President
Response to Comment Letter No. 17 – Stover Seed Company

See responses next page.

1. **Concern over impacts to business operations.** See response to comment 2. As indicated in the EIR/EIS (Section 3.4.3.1), the one-way service/frontage road north of the viaduct between Mateo Street and Mesquit Street would be removed and relocated for the Replacement Alternative, which would require acquisition/relocation of businesses along this road. This impact cannot be avoided with the Replacement Alternative, and mitigation measures are identified in the EIR/EIS.

2. **Business survey did not ask for issues and concerns.** The purpose of the business survey was to understand the operations of each of the businesses and to use this information to document the potential relocation and access impacts in the EIR/EIS. The survey was completed during the early stages of design. At the time the survey was completed, the preferred alignment was not identified, and the right-of-way (ROW) impact was not established. The potential impacts to ROW were considered during preparation of the draft environmental document. The overview of potential impacts was presented at the public hearings for the Draft EIR/EIS. The City has been meeting owners at their request to discuss these impacts. The intent of the survey was not to discuss these issues.

3. **Understand the project is needed, but still want to remain in Downtown.** We appreciate your understanding of the situation and will work with all affected business owners. For more information, please see Chapter 3.4, “Community Impacts – Relocation and Business Disruptions,” and Appendix D, “Summary of Relocation Benefits.”
August 14, 2009

By E-mail and U.S. Mail

Carlos Montez
Senior Environmental Planner
California Department of Transportation
100 S. Main Street
Los Angeles, CA 90012
Carlos.montez@dot.ca.gov

Wallace E. Stokes III
Bureau of Engineering
Bridge Improvement Project
City of Los Angeles
221 N. Figueroa Street, Suite 350
Los Angeles, CA 90012
wally.stokes@eng.lacity.org

Jim Wu, P.E., Project Manager
City of Los Angeles
Bridge Improvement Program
221 N. Figueroa St., Suite 350
Los Angeles, CA 90012
jim.wu@lacity.org

Re: 6th Street Viaduct Seismic Improvement Project

Our client: Spilo Worldwide, 585 and 589 S. Santa Fe Ave.

Gentlemen:

This firm represents Spilo Worldwide which operates its business at 585 S. Santa Fe Avenue, 589 S. Santa Fe Avenue, and 1435 East Sixth Street (the north side frontage road). This is a follow-up letter to my letter of June 29, 2009. As noted previously, Spilo owns the property on Santa Fe and leases the Sixth Street parcel. The City of Los Angeles has told Spilo that of the various alternatives under consideration, the City and/or State may take Spilo’s property as part of the 6th Street Viaduct Improvement Project. This letter sets forth Spilo’s additional concerns with respect to the impact of the proposed project on its business and Spilo requests that the City and State respond to these issues in the Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS).

First, we believe it is important for the FEIR/FEIS to consider the cumulative effect of other projects in the vicinity. The most significant project, besides the subject project, is the voter-approved high speed rail line. We believe this cumulative impact should be studied.

Second, while various city and state personnel have verbally advised Spilo that it may not need to move, we note that the draft EIR/EIS is replete with references to the anticipated demolition of Spilo’s buildings. For example, Page 2-28 refers to “Demolition of adjacent
Appendix M  Written Comments and Responses on DEIR/EIS

Carlos Montez
Wallace E. Stokes III
Jim Wu, P.E.
August 14, 2009
Page 2

Buildings...west of Los Angeles River," Page 3-3 states that the uses in some buildings located adjacent to the viaduct footprint would need to be relocated, Page 3-17 addresses additional property acquisitions resulting in the loss of industrial buildings, Table 3.4.2 references the full acquisition of the spilo buildings, and Pages 3-20 and 3-21 refer to the conversion of industrial uses to other uses, in conflict with the plans of the City of Los Angeles, would be unavoidable. If Spilo's buildings are to be taken for this public project, Spilo will need ample time to relocate and would prefer to relocate in the immediate vicinity of its current location, to best maintain its substantial business goodwill. This should be a mitigation requirement referenced in the FEIR/FEIS.

We further note that the FEIR/FEIS references the probable lack of access during construction, and this must be addressed as well.

Finally, we reiterate that Spilo is an active and vibrant business, has many employees who depend upon Spilo for the support of themselves and their families, and therefore all efforts should be made to retain the business goodwill and the jobs, particularly in this economy. We urge the FEIR/FEIS to include a mitigation measure providing substantial notice and lead time before any potential acquisition of the property. The minimum ninety (90) day notice to relocate, referenced in the DEIR/DEIS, is woefully inadequate and would result in a total loss of the business. To complete an orderly relocation, Spilo estimates it needs a full eighteen months from the written notice that the project will proceed. Of course, Spilo will also need economic and other assistance from the lead agencies to ensure that an orderly relocation can occur without bankrupting the company.

Some Additional Points.

In addition to the above, Spilo has noted what appear to be errors in the documents, and we will address these in no particular order:

1. 2.3.3.3 Street Design. The second paragraph of Page 2-25 refers to "existing buildings on the north side of the viaduct west of Mateo Street would need to be removed." We believe that "west" is incorrect, and it should state "east" instead of "west."

2. 3.1.4 Resources Resulting in No Impacts. Paragraph 3 of Page 3-3 states: "Based on field observations by the consultant team, no residential dwellings are located in or adjacent to the 6th Street Viaduct footprint. The proposed project would not require the acquisition or displacement of residential housing..." This is incorrect. There is at least one residential dwelling, and perhaps more, on the southerly side of Willow Street, east of Mateo.

We reiterate that Spilo recognizes the importance of this project, but requests that the City and State fully consider the impacts of the project on local businesses, and completely
mitigate those impacts, so that private citizens and businesses are not damaged by this public project.

Please make this letter part of the record of the draft EIR/EIS. Feel free to contact me if you need additional information. Thank you.

Very truly yours,

KEVIN H. BROGAN
OF
HILL, FARRER & BURRILL LLP

cc: Spilo Worldwide

KHB:hjp

HFB 893810.1 56816002
Appendix M  Written Comments and Responses on DEIR/EIS

Response to Comment Letter No. 18 – Hill, Farrar & Burrill LLP (representing Spilo Worldwide)

1. **High speed rail line should be considered as part of cumulative impacts.** A more thorough analysis of cumulative project effects, including the proposed high speed rail, on various environmental resources in the area has been conducted and is presented in Section 3.26 of the FEIR/EIS. It should be noted that the 6th Street Viaduct Seismic Improvement Project is not a capacity-enhancement project; therefore, after completion, it would not contribute to cumulative traffic impacts in the future. The traffic impact of the 6th Street Viaduct replacement would occur during construction, when traffic is diverted to other local streets from 2014 to 2017. It is assumed that the high speed rail project would not be implemented before completion of the 6th Street Viaduct replacement; therefore, there would be no cumulative construction impacts from these projects.

2. **Unsure if the business needs to be relocated.** See response to the previous Spilo Worldwide comment (June 29, 2009, letter) on this matter (Comment Letter No. 1, Response No. 1).

3. **Possible lack of access to nearby businesses during construction.** The design team is carefully evaluating methodologies for demolition and construction to minimize access impacts to local businesses.

4. **The minimum ninety (90) day notice to relocate, referenced in the DEIR/DEIS, is woefully inadequate.** Spilo estimates that it would need a full eighteen months from the written notice that the project will proceed, in addition to other assistance from the lead agencies, to ensure that an orderly relocation can occur without bankrupting the company. The commenter's concerns are noted. The requirement to vacate following issuance of a ninety (90) day notice would be administered in accordance with the Uniform Relocation Act and consistent with Caltrans relocation guidelines 24.203 (c1, c2, c3):

   **Ninety-day notice:**
   1. General. No lawful occupant shall be required to move unless he or she has received at least 90 days advance written notice of the earliest date by which he or she may be required to move.
   2. Timing of Notice. The displacing agency may issue the notice 90 days or earlier before it expects the person to be displaced.
   3. Content of Notice. The 90-day notice shall either state a specific date as the earliest date by which the occupant may be required to move, or state that the occupant will receive a further notice indicating, as least 30 days in advance, the specific date by which he or she must move. If the 90-day notice is issued before a comparable replacement dwelling is made available, the notice must state clearly that the occupant will not have to move earlier than 90 days after such a dwelling is made available.

5. **Noted typographical error.** The error has been corrected in the FEIR/EIS.

6. **DEIR/EIS indicated no residential dwelling located adjacent to the viaduct footprint. The commenter noted that there is at least one residential dwelling located south of Willow Street.** Land use south of Willow Street and east of Mateo Street is designated as industrial/commercial. This area is located farther outside the viaduct footprint. The EIR/EIS does state that many industrial buildings in the project area have been converted to residential use. It is therefore possible that there is some non-conforming residential occupation within
this industrial designated zone; however, based on the consultants’ field observations, there is no residential dwelling located near the viaduct footprint.

7. **Request the City to fully mitigate impacts to local businesses.** Comment is acknowledged. Caltrans and the City are committed to implementing the mitigation and monitoring program stipulated in the EIR/EIS to minimize impacts to area residents and businesses to the extent applicable.

8. **Request that this comment letter be a part of the record.** Comment is acknowledged. This letter is made a part of the administrative record for this EIR/EIS.
August 17, 2009

Mr. Wally Stokes
City of Los Angeles
Department of Public Works, Bureau of Engineering
221 N. Figueroa, Suite 350
Los Angeles, CA 90014-1914
Wally.Stokes@lacity.org

VIA E-MAIL AND CERTIFIED MAIL

RE: 6th Street Bridge Reconstruction Project
Property Address: 2233 Jesse Street, Los Angeles

Dear Mr. Stokes,

We are the owners of a single story cold storage warehouse building with a two-story office area, totaling approximately 145,000 square feet (noted on the attached diagram). The subject property is located on the north side of Jesse Street between Mission Road and Rio Street and directly south of Whittier Boulevard.

After review of the proposed designs and alignment proposal, we believe that Bridge Concept 4 and Alignment 3B would be most suitable for our property.

We are concerned by the proposed bridge reconstruction project as it will have a significant impact on our property and the existing tenants, Glacier Cold Storage and Cal Hono Freight Forwarders. Specifically:

- The existing bridge is directly behind the property and in one area is directly over the building. What efforts and processes will be used to protect our building during demolition and construction?

- A large area adjacent to and under the bridge is used by our tenants for storage/parking and truck access to the property. How much of our property will be impacted due to demolition and construction?

- What will be the specific time frames that our property and adjacent areas will be impacted for demolition and construction?

- What roadway detours will be enacted? What will be the impact of detours from closures to Jesse Street, Rio, and 7th Street? What will be the impact of closures to S. Mission Road? How will we and our tenants be notified? How much advance warning will we receive?
• What compensation will be offered for the use of any areas of our property during demolition and construction?

• What compensation will be provided for the loss of storage/parking below the bridge? Also, our tenant will need to add fencing/gates to existing parking area to accommodate large truck access. How will they be compensated?

• Will the "Laydown Areas" be available to surrounding businesses for parking if needed?

Respectfully,

Robert Neal
Managing Partner

Cc: Karen Priesman
    Diana Olson
Response to Comment Letter No. 19 – Hager Pacific Properties

1. **In support of Bridge Concept 4, Alignment 3B.** Comment is noted.

2. **Concerns on impacts from construction activities to Glacier Cold Storage and Cal Hono Freight Forwarders.** Comment is acknowledged. Responses to concerns raised are provided below.

3. **Measures to minimize impacts during demolition and construction.** Special provisions to protect properties located adjacent to the bridge will be included in the project specifications. Prior to demolition, the contractor will be required to submit the means and methods for demolition for City review and approval. During the demolition period, construction inspectors will ensure that the contractors adhere to the approved plan.
4. **Impacts on the use of area under the bridge.** In discussions between City staff and the property representatives, the owners/tenants stated that they have an existing revocable permit to use the property under the bridge for parking of vehicles. When the City Real Estate Group met with the owners in July 2009, it was made clear that no portion of the property under the bridge would be available for use during demolition of the existing bridge or during construction of the new bridge. The tenant indicated that plans are in the works to relocate from under the bridge to an alternate location. Once the project is completed, the City will evaluate the use of the space under the bridge on a case-by-case basis.

5. **Specific time for demolition and construction.** As described in the EIR/EIS, demolition and construction of Alternative 2 would take approximately 2.5 years and Alternative 3 would require approximately 4 years. The actual construction schedule cannot be accurately predicted until the final design phase is completed.

6. **Request information on detour routes.** Specific traffic detour routes will be developed as part of the Traffic Management Plan (TMP) during the detailed engineering design phase. The TMP will identify specific street closures and alternative access. Input from impacted property owners will be solicited. Please see Figures 3.7-5 and 3.7-6 for the proposed detour routes that were analyzed in the EIR/EIS, and related traffic mitigation measures under EIR/EIS Section 4.9.2.

7. ** Asked about the amount of compensation to be received from the City.** Compensation for the use of the property will be based on the appraised value of the land and the length of time that the property will be used by the City. The impacted property owners/businesses will receive fair market value for any project-required taking regardless of whether they are eligible for relocation benefits. Relocation assistance payments and counseling will be provided to eligible persons and businesses in accordance with the Uniform Relocation Act.

8. **Asked about compensation for the loss of storage and parking below the bridge.** There is no compensation for loss of parking under the bridge; the City will revoke the revocable permit per agreement as stated in the permit. As to the question of fencing, this will be considered on a case-by-case basis and, depending on what fencing will have to be removed for the bridge replacement, compensation will be made accordingly.

9. **Asked if the City would provide space for parking if needed.** It is unlikely that the contractor’s laydown areas would be available for temporary parking for businesses during project construction.
August 17, 2009

Gary Lee Moore
Los Angeles City Engineer
Bureau of Engineering
221 N. Figueroa St. Suite 350
Los Angeles, CA 90012

Dear Mr. Moore:

This letter is written on behalf of the Board of Directors of the Friends of the Los Angeles River, in response to the Request for Comments on the Sixth Street Viaduct Seismic Improvement Project Draft EIR/EIS dated May 2009.

The Friends of the Los Angeles River (FoLAR) supports the vision of a swimmable, fishable, boatable Los Angeles River. We believe that all projects along the Los Angeles River should aid in the process of River restoration, increase open space and improve River access, support community-oriented River use, and promote environmental responsibility.

The Sixth Street Viaduct Seismic Improvement Project offers a critical opportunity to advance all of these goals.

The existing Sixth Street Bridge/Viaduct is one in the unique and iconic set of twelve historic bridges that spans the Los Angeles River downtown. It is a landmark for the Boyle Heights community, for the city as a whole, and for the River itself.

It is unfortunate that the severe deterioration of the bridge through the process of Alkali Silica Reaction (ASR) requires major intervention in order to maintain the bridge’s structural safety and viability. However, we view the “Retrofit Alternative” as put forth in the EIR/EIS as unsupportable. This solution is both a costly and relatively short-term fix, and as proposed would severely compromise the historic character and visual appeal of the bridge.

Although we regret the loss of this beloved structure, we feel the correct option is to replace the Sixth Street Bridge/Viaduct with a new structure also of great aesthetic value and symbolic potential.

The specific "style" of the replacement structure is less important than assuring that the design be appropriate, unique and iconic. Throughout history, bridges such as the Ponte Vecchio, London Bridge and the Brooklyn Bridge have become potent symbols of their metropolises.

570 W. Avenue 26, #250, Los Angeles, CA 90065
323 223-0585 phone 323 223-0585 fax
www.folar.org, mail@folar.org
In the past decade, a new era of artistry and technical sophistication has yielded a new generation of landmark bridges – Bunker Hill Bridge in Boston, the Erasmus Bridge in Rotterdam, and the recent Sundial Bridge in Redding, California, to name only a few. The Sixth Street Viaduct project should seize the opportunity to create just such a structure for Los Angeles.

Unfortunately, none of the design options for replacement structures offered in the Draft EIR/EIS meet the standards of a unique, world-class design. It is our recommendation that the further design of the replacement structure be envisioned by an internationally-recognized design team, selected through a limited competition process, with strong local and national representation. This process will assure the highest level of design quality while also guaranteeing that the final result is appropriate to its setting.

As it moves forward, the design process should be responsive to the concerns of all the project’s stakeholders, including the Boyle Heights community, the Arts District, the downtown development community, and River advocates.

The project also needs to support and advance the goals of the Los Angeles River Revitalization Master Plan (LARRMP). As a part of the “Downtown Industrial Opportunity Area” envisioned by the LARRMP, the Sixth Street Bridge/Viaduct project should address the broader goals of river revitalization put forth by the master plan.

In support of these goals:

The project should incorporate generous, high-quality dedicated bicycle and pedestrian circulation and should create present and future access points to open space along the River for these users. Use of the bridge by bicyclist and pedestrians should be encouraged through the quality of the design experience.

Through its design, the project should enhance the quality of future open space to be created along the River at the base of the bridge, and provide open space along the viaduct support structure to connect the River back into the surrounding neighborhoods on both the east and west sides.

The design should anticipate the eventual elimination or covering of rail lines on both sides of the River in order to increase open space and River access.

The design should incorporate dramatic lighting along its entire length as a way to enhance its value as a landmark to both the neighborhood and the whole of downtown.

The project must be designed to enhance the value of its surrounding neighborhoods for industrial, commercial and residential development. The project can support the goal of industrial development as outlined in the LARRMP but should further catalyze neighborhood improvement to help create a vibrant mixed-use community, one that takes full advantage of its location adjacent to the exceptional resource of the Los Angeles River.
The project, particularly during the extended period of construction, should help promote ecological restoration of habitat along the River, and help protect or enhance water quality in the River.

Finally, the project should serve as a model of enlightened development along the River, and provide inspiration and guidelines for the further enhancement of the River through downtown.

We appreciate the opportunity to provide our perspective on a project that is crucial to the revitalization of the Los Angeles River, and look forward to future involvement in seeing this exciting project realized.

Sincerely,

(Original with signature to be mailed)

Alex Ward, AIA, Board Treasurer
Friends of the Los Angeles River

Enclosures: Bridge Photos

Cc: Mayor Antonio Villaraigosa
    Council President Eric Garcetti
    Councilmember Ed Reyes
    Councilmember Tom LaBonge
    Councilmember Jan Perry
    Councilmember Jose Huizar
Appendix M  Written Comments and Responses on DEIR/EIS

Comment Letter #20 con’d

Bunker Hill Bridge, Boston
Erasmus Bridge, Rotterdam
Sundial Bridge, Redding
Response to Comment Letter No. 20 – Friends of the Los Angeles River

1. **Support projects that provide more open space and improve river access.** Comment is acknowledged.

2. **Recognized that Retrofit Alternative is unsupportable.** Alternative 3, viaduct replacement, has been recommended as the preferred alternative, rather than the retrofit alternative, for the proposed 6th Street Viaduct Seismic Improvement Project (see FEIR/EIS Section 2.4).

3. **Supportive of replacement with a new structure with great aesthetic value and symbolic potential.** As noted in the response to comment 2 above, replacement of the viaduct with a new structure is the preferred alternative. Furthermore, the preferred bridge replacement concept is an iconic extradosed (cable supported) bridge (principle of Bridge Concept 4). This will be a state-of-the-art design for the City of Los Angeles from the stand point of the architectural/structural design. It will be the one of the first extradosed cable stayed bridges constructed in the United States.

4. **The style should be appropriate, unique, and iconic.** See response to comment 3 above.

5. **The proposed bridge concepts presented in the DEIR/EIS do not meet the standard of unique, world-class design. The upcoming design process should be responsive to all project stakeholders.** With the physical constraints on the site, certain bridge types are not appropriate to the setting or feasible to construct, such as a cable-stayed bridge, whereas the three dual-tower extradosed design successfully accommodates these constraints. All of the bridge concepts evaluated were conceived to fit with the family of bridges along the river. The architectural vocabulary of the new bridge could have similar solids and voids to respect the existing bridge massing. If the extradosed is selected, it will be the first of its design in the United States, and it will become a 21st century icon for the City of Los Angeles.

   The architectural vocabulary of the replacement bridges received the support of the surrounding community through many public meetings. The design process has included numerous project stakeholders, including the Boyle Heights community.

6. **The project should support and advance the goals of the Los Angeles River Revitalization Master Plan (LARRMP).** The replacement viaduct will provide roadway shoulders for a high-quality bicycle route and up to 10-foot-wide sidewalks for pedestrians. The segment of the river impacted by the proposed project is concrete lined and flanked by heavy industrial uses devoid of habitat. While the City supports the goal of improving habitat at appropriate locations along the river, use of funds dedicated for the proposed bridge seismic improvement project would be inappropriate because it is not the proposed project’s purpose, nor would the project adversely impact habitat.
Appendix M Written Comments and Responses on DEIR/EIS

Kochaon, Anne

From: Wally Stokes [Wally.Stokes@lacity.org]
Sent: Wednesday, August 19, 2009 5:57 PM
To: carlos_montez@dot.ca.gov; david_lewis@dot.ca.gov; Jim Wu; Linda Moore; Kochaon, Anne; Bingham, Jeffery
Subject: FW: Comments on 6th Street bridge DEIR

Comments of Portia Lee

From: "portia" [mailto:calarchv@sbcglobal.net]
Sent: Wednesday, August 19, 2009 5:38 PM
To: <wally.stokes@lacity.org>
Subject: Comments on 6th Street bridge DEIR

My comments on the Draft DEIR follow. I know it represents much thought and planning by you, your staff and the consultant.

Comments by Portia Lee/California Archives

The Draft EIR expresses the threefold purpose of the undertaking as 1) the preservation of 6th Street as a viable east-west link between Boyle Heights and Downtown Los Angeles; 2) the reduction of the vulnerability of the 6th Street Viaduct in major earthquake events and 3) the resolution of the design deficiencies of the 6th Street Viaduct. The DEIR discusses purposes 1 and 2 effectively. However, the third purpose is somewhat misleading. The bridge has no design deficiencies; it has condition deficiencies brought about by the alkali-silica reaction.

The original bridge design is an example of the work of a legendary group of engineers led by Merrill Butler who headed the Bureau of Engineering during the period of construction of the nine historic bridges over the Los Angeles River. Intended to connect Los Angeles with Boyle heights, the piers were constructed at angles, utilizing a triangular scheme to allow the bridge to curve toward the community. Each column has a different irregular construction; their geometrical design complements the Streamline Moderne decorative elements. The asymmetrical steel-through arches, a most unusual structural scheme, are living documents in the history of bridge engineering.

None of the bridge concepts discussed in the DEIR effectively addresses the problem of the loss of historic integrity that each proposes. Replication, in fact, effects the destruction of the aspects of integrity required for the bridge to keep its National Register designation. Concept 1A, replication of the bridge abutment-to-abutment is only mentioned in the draft document as a possibility.

The bridge is singularly important in the developmental and architectural history of the City of Los Angeles and references the principles of the City Beautiful movement as an important national concept in city planning. It also demonstrates an unusual use of an important concept in bridge engineering theory. Instead of replication, a restoration of the bridge similar to that of the Colorado Street Bridge and the North Broadway Bridge should be extensively considered, with the intention of addressing the question of the alkali-silica problem, either by treatment or using new concrete.

With respect to the cable stay bridge proposed as a replacement, it is an interesting and attractive proposal in itself. However, it should only be considered for the section of the Bridge which is owned by the State of California and never as a substitute for the City of Los Angeles' historic Sixth Street Bridge.

Thank you for your consideration.
Portia Lee  
California Archives  
6047 Metropolitan Plaza  
Los Angeles, California 90036
1. **Disagree that the bridge has design deficiencies.** The bridge has structural design deficiencies as a result of the structural reinforcing steel detailing, lack of reinforcing steel, lack of piles, buckling of steel members, capacity of shear keys, column capacities, and barrier rails not being crash-worthy (see the Bridge Inspection Records Information, Structural Inventory and Appraisal Report, Bridge No. 53C-1880, Caltrans, Structure Maintenance and Investigation, August 2006, for a complete list of structural deficiencies). The alkali silica reaction (ASR) deterioration of the concrete is a material deficiency. The bridge also has design deficiencies, such as lack of roadway shoulders and inadequate stopping sight-distance along the curved length of the roadway.

2. **None of the bridge concepts described in the Draft EIR effectively addresses the problem of loss of historic integrity that each proposes.** As discussed in the EIR/EIS (Section 3.9.3.2, Alternative 3-Replacement), all of the replacement alternatives, including replication, would demolish the 6th Street Viaduct to build a new structure. The existing viaduct would be replaced with one of six bridge concept designs on one of three alternative alignments under consideration. Implementation of Alternative 3 would result in the physical destruction of the historic property, and it would result in a finding of adverse effect pursuant to 36 Code of Federal Regulations (CFR) Part 800 and would presumably result in loss of National Register eligibility. Concept 1A, replication of the bridge abutment-to-abutment, was considered in response to public input. However, it would not constitute an historic reconstruction consistent with the Secretary of Interior’s standards given that modern materials and seismic design would be employed, and the new viaduct would have a greater roadway width (70-foot [ft] curb-to-curb width versus existing 46-ft width) to meet federal funding criteria.

Any restoration of the existing bridge would have significant impacts to the historic features of the viaduct. The partial preservation (retrofit) alternatives considered in the EIR/EIS would provide an additional design life of only 30 years, which is unacceptable from a life-cycle cost standpoint. The viaduct suffers from a condition known as ASR (see EIR/EIS Section 1.5.2), which is essentially a concrete “cancer” that over time weakens the concrete’s strength and limits the ability to retrofit (preserve) the bridge to current seismic safety standards. There are no known methods to reverse or stop the ASR deterioration of the concrete. Laboratory testing indicates that deterioration due to ASR will continue, furthering the structure’s vulnerability to collapse in a seismic event.

3. **Not in support of a cable stay bridge.** Comment is acknowledged.
August 24, 2009

Carlos Monterz
California Department of Transportation
District 7
100 S. Main Street
Los Angeles, CA 90012

Subject: Draft Environmental Impact Statement for the 6th Street Viaduct Seismic Improvement Project (CEQ# 20090226)

Dear Mr. Monterz,

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the 6th Street Viaduct Seismic Improvement Project (Project). Our review is pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

EPA commends the California Department of Transportation (Caltrans) for their efforts to address seismic and safety concerns that prompted the proposal for the Project. EPA also understands that both Alternative 2 (Retrofit) and Alternative 3 (Replacement) could provide a net long-term benefit to the greater Los Angeles region.

EPA has identified areas where additional information or further analysis is needed. EPA’s enclosed detailed comments include a request for broadening the scope of the alternatives analysis, as well as a request for the inclusion of a more rigorous cumulative impacts analysis. Through the enclosed detailed comments, EPA also highlights specific concerns and recommendations regarding: 1) historic and cultural resources, 2) environmental justice, 3) aquatic resources, 4) air quality/construction mitigation, and 5) bike/pedestrian facilities. For these reasons, we have rated the DEIS as Environmental Concerns-Insufficient Information (EC-2). Please see the enclosed “Summary of EPA Rating Definitions”.

We appreciate the opportunity to review this DEIS. When the Final EIS is released for public review, please send one (1) hard copy and one (1) CD-ROM to the
address above (mail code: CED-2). If you have any questions, please feel free to contact Connell Dunning, Transportation Team Leader, at (415) 947-4161, or Jarrett Stoltzfus, the lead reviewer for this Project, at (415) 972-3810.

Sincerely,

Connell Dunning

Kathleen M. Goforth, Manager
Environmental Review Office
Communities and Ecosystems Division

Enclosures:
Detailed Comments
Summary of Rating Definitions

CC: Wally Stokes, City of Los Angeles
    Mark Cohen, US Army Corps of Engineers
    Susan Nakamura, South Coast Air Quality Management District
Appendix M  Written Comments and Responses on DEIR/EIS

US EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE 6th STREET VIADUCT SEISMIC IMPROVEMENT PROJECT, LOS ANGELES COUNTY, CA, AUGUST 24, 2009

Alternatives Analysis

Section 1502.1 of the National Environmental Policy Act (NEPA) states that agencies should “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public.” While EPA appreciates efforts throughout the Draft Environmental Impact Statement (DEIS) to highlight the benefits of Alternative 3 (Replacement), a more rigorous comparison of the merits of each alternative, including the multiple bridge design concepts considered under Alternative 3, better achieves the purposes of NEPA.

Currently, the Staff Analysis Summary section (pg. 2-55), based on input from a workshop on October 8th, 2008, appears to preference Alternative 3 (Replacement) over Alternative 2 (Retrofit) but does not provide the comparative rationale to fully justify the selection of Alternative 3. Section 2.3.4.1, which describes Alternative 2 - Retrofit, only contains reasons why Alternative 2 is not the recommended alternative, such as high life-cycle cost and geometric deficiencies in that particular Alternative. Section 2.3.4.1 does not provide sufficient information to conclude whether there are reasons why Alternative 2 may be preferable to Alternative 3. For instance, the selection of Alternative 2 could result in fewer impacts to air quality and less disruption to local communities as the result of less necessary construction.

Likewise, Section 2.4.3.2, which describes Alternative 3 – Replacement, does not contain reasons why Alternative 3 may not be preferable. Section 2.4.3.2 only contains a ranking system for consideration of the various alignments discussed in Alternative 3, and not advantages or disadvantages to the selection of Alternative 3 itself. The Alternatives Analysis section should reflect a balanced consideration of the advantages and disadvantages of all Alternatives considered, including the No-Build Alternative.

Further, Section 2.4.3.3, which describes Alternative 3 – Replacement: Bridge Concepts states that “the bridge type does not affect the results of the environmental impact analysis, all five bridge types are documented in this Draft EIR/EIS as viable options for the Replacement Alternative.” (pg. 2-56) However, Bridge Concept 1, Concept 4 and Concept 5 appear to build directly in the Los Angeles River, as they include the construction of a new central support pylon, directly impacting the riverbed during and after construction. The remaining concepts (Concept 2 and Concept 3) do not have a central support pylon constructed in the riverbed and the bridge, in those cases, span the river without the same potential for water quality impacts. The Alternative Analysis should clearly define, in comparative form, the environmental impacts across all Bridge Concepts to help inform decision makers and the public.
Finally, the DEIS should fully justify the elimination of any alternatives that would result in fewer environmental impacts than the locally preferred alternative(s). The DEIS must also evaluate the No-Build Alternative as a benchmark against which to compare both the performance and environmental consequences of the other Project alternatives.

Recommendations:
- In the FEIS, expand Section 2.4.3 (Staff Analysis Summary) to reflect a balanced consideration of the advantages and disadvantages of both Alternative 2 and Alternative 3. For example, include a table indicating side-by-side the advantages and disadvantages of each alternative analyzed. This comparison could include life-cycle cost, impact to viaduct footprint, or traffic impacts.
- Assess the environmental impacts of each of the proposed Bridge Concepts and incorporate the results into the analysis of Alternatives Analysis.
- Fully justify the elimination of any alternatives that would result in fewer environmental impacts than the locally preferred alternative(s).

Cumulative Impacts

The cumulative impact analysis provided in the DEIS does not fully assess and quantify cumulative impacts associated with the Project, and does not link the Project's effects to the health of the affected resources. Cumulative impacts are defined in the Council on Environmental Quality's NEPA regulations as "the impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such actions" (40 CFR 1508.7). These actions include both transportation and non-transportation activities. The cumulative impact analysis should consider transportation and non-transportation projects such as large-scale industrial or commercial developments and approved urban and transportation planning projects that are reasonably foreseeable and identified within city and county planning documents.

EPA is aware of a number of potential forthcoming projects in the general area over the next few years (e.g. expansion of the I-710 corridor), which, if implemented, could lead to substantial cumulative impacts to air quality, historical resources, etc. in an already highly impacted area.

The recently adopted Los Angeles River Revitalization Plan (pg. 1-8) designated the area covering the 6th Street Viaduct and its surrounding area as the "Downtown Industrial Opportunity area", and makes note of a number of forthcoming projects. The purpose of the plan was to guide the revitalization of the Los Angeles River, which can include changes in land use and development. Likewise, the Central Industrial Redevelopment Project Area Plan (pg. 3-12), which is to the west of the proposed Project, and the Adelante Eastside Redevelopment Project Area (pg. 3-13), which is to
the east of the proposed Project, also are areas where development is proposed and/or planned.

However, the DEIS does not account for the cumulative impact of simultaneous development projects overlapping with the proposed Project. Likewise, the DEIS does not mention the impact of other public or private construction projects in the greater downtown/Boyle Heights area during the 6th Street Viaduct construction period, which combined, could lead to even greater issues with traffic circulation and community and environmental impacts.

The high volume of proposed projects combined with a highly urbanized setting, with low-income and minority communities in an already highly impacted area, demands a thorough cumulative impacts assessment with appropriate mitigation. Specifically, all feasible mitigation should be proposed and committed to along with timeframes for implementation.

While the DEIS acknowledges that the proposed Project does not include capacity addition or changes in traffic patterns (pg. 3-201), it does not include a full, comprehensive report on cumulative effects generated during the construction period. The Traffic Study referenced accounts for general traffic growth and foreseeable projects in the vicinity of the Project after project completion (pg. 3-105), but does not include foreseeable projects and resulting cumulative impacts during the extensive construction period.

Given the extensive cumulative impacts to air and water quality from past major infrastructure projects in the vicinity of the proposed Project, EPA recommends a more comprehensive analysis of cumulative impacts to resources of concern. The Final EIS (FEIS) should include a more robust cumulative impact assessment that effectively discloses: 1) a defined study area for each resource; 2) the health or status of the resource and the historical extent of losses and/or impacts to the resource; 3) the trends associated with those losses and/or impacts; 4) how reasonably foreseeable actions may impact those resources; 5) the Project's contributions to these cumulative effects; and 6) a mitigation strategy and timeframe of implementation to reduce impacts.

Recommendations:
- Include a more robust cumulative impact analysis that includes impacts to resources as well as transportation circulation in the FEIS. EPA recommends Caltrans follow the June 2005 Guidance for Preparers of Cumulative Impact Analysis prepared jointly by Caltrans, Federal Highway Administration, and the EPA for this additional analysis. The guidance is a useful reference and is available on-line at http://www.dot.ca.gov/ser/cumulative_guidance/erasure.htm
- Include information on cumulative traffic impacts generated during the construction period, both by the 6th Street Viaduct project and other area projects that could affect circulation in the general area as well.
• Include a mitigation strategy to reduce impacts from the proposed project and include timeframes for implementation of all proposed mitigation.

Cultural and Historical Resources

Both Alternatives 2 and 3 would have a permanent, adverse impact on the aspects that characterize the 6th Street Viaduct as a historic resource (pg. 4-8). The DEIS indicates that Alternative 2 would result in the alteration of the Viaduct in a manner not consistent with the Secretary’s Standards for the Treatment of Historic Properties, as the bridge is so structurally deficient that it cannot be rehabilitated to meet minimum seismic requirements without adversely affecting the Viaduct’s historic integrity (pg. B-28). Alternative 3 involves the complete removal and replacement of the Viaduct (pg. B-29), and as such, would result in a permanent, irreversible effect on the historic integrity of the bridge.

The DEIS indicates that a Memorandum of Agreement (MOA) will be developed as part of the Section 106 consultation process with the State Historic Preservation Officer (SHPO). EPA recommends that Caltrans and the City of Los Angeles include in the FEIS results of formal consultation with SHPO and any additional comments from agencies with such expertise. Further, Caltrans and the City should ensure that appropriate steps are taken (pgs. 3-148 and 3-149) to preserve as much of the existing viaduct as possible through various means (such as through print or film) before actual alteration or demolition, as well as continue to pursue appropriate mitigation measures with the SHPO as referenced on page 3-148.

Recommendations:
• If Alternative 2 is chosen, EPA urges that as many historically relevant features from the original bridge should be retained as possible without compromising the structural retrofit of the bridge itself.
• If Alternative 3 is chosen, it will not be possible to preserve any aspects of the original bridge. However, as the actual design of the bridge (Bridge Concept) is yet to be selected by the Los Angeles City Council, and the choice of final Bridge Concept is independent of potential alignments, EPA urges the selection of a Bridge Concept that embraces many of the same qualities that raised the original value of the 6th Street Viaduct as a historical and cultural resource for the City of Los Angeles.
• Mitigation measures, as well as the complete Section 106 MOA, should be included in the FEIS.

Environmental Justice

According to Executive Order 12898, “To the greatest extent practicable and permitted by law, ... each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on
minority populations and low-income populations. Consistent with this Executive Order, an EIS should fully analyze the environmental effects of the proposed Federal action on low-income or minority populations, and present opportunities for affected communities to provide input into the NEPA process. Guidance issued by the Council on Environmental Quality (CEQ) states that mitigation in impact statements “should reflect the needs and preferences of affected low-income populations (and) minority populations to the extent practicable” (Environmental Justice Under the National Environmental Policy Act, CEQ 1997).

The DEIS is thorough in the scope of its treatment of community and environmental justice impacts, as well as community outreach to minimize these impacts, but the scope of the analysis should be broadened with respect to anticipated benefits. Specifically, EPA recommends additional analysis of impacts on commuters, the local workforce and transit.

Local/Commuter Benefits and Impacts

EPA has concerns that the Project disproportionately impacts the local population, which is low-income and minority, when compared to the substantial benefits received from commuters outside of the area, which may not have a similar demographic distribution.

Recommendation:
- Quantify, to the extent possible, the demographics of commuters moving through the project area and include this information in the environmental justice evaluation in the FEIS. The traffic analysis in Section 3.7 noted a strong tendency for directional traffic during peak commute periods, with the dominant flow westbound in the morning and eastbound in the afternoon. The analysis, such as Tables 3.7-1 and 3.7-2, also provided data on where traffic in the corridor originates and departs. This suggests that the facility serves both a local and regional need, and will continue to do so in the future (Figure 3.7-3).

Workforce Issues

While Alternative 3 does not include residential relocation, it does include impacts to area businesses. The DEIS notes that while no local business owners are identified as minority (pg. 3-39), the relocation of existing businesses could cause low-income and likely predominately minority workers to lose their jobs (pg. 3-59). The DEIS goes on to note that the affected business owners would be offered relocation benefits to the extent allowed by law in accordance with the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. The DEIS then notes that “loss of employment would be partially offset by unemployment insurance”, but then recognizes that workers would have difficulty finding new jobs due to the economic downturn (pg. 3-59).
Appendix M  Written Comments and Responses on DEIR/EIS

Recommendation:
- The FEIS should include a survey of the racial/ethnic and income characteristics of the workforce of businesses that would be relocated under the proposed action (Alternative 3), as well as relief measures that can be taken to preserve or generate new employment for local workers displaced by the Project.

**Transit**

The Los Angeles Metropolitan Transportation Authority (LACMTA) operates two bus lines on the 6th Street Viaduct: Route 18 and MetroRapid Route 720. As Route 720 serves one of the heaviest ridden corridors in the LACMTA system, and LACMTA ridership in general consists of many captive riders and those with low incomes, the projected closure of the 6th Street Viaduct for several years under Alternative 3 - Replacement will result in potentially significant delays for a significant number of bus riders that utilize that particular line. (pg. 3-104)

**Recommendations:**
- The FEIS should include information from the Traffic Management Plan (pg. 4-27) regarding transit impacts, and should quantify the disproportionate impact to low income, minority transit riders as a result of the closing of the viaduct.
- Include descriptions of proposed alternative transit routes and measures to be taken to limit disruptions to current service.

**Aquatic Resources**

**Jurisdictional Waters**

The Project may involve the discharge of dredged or fill material into jurisdictional wetlands and waterways. Discharges of dredged or fill material into waters of the U.S. require authorization by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA). The Federal Guidelines at 40 CFR Part 230 promulgated under CWA Section 404 (b)(1) provide substantive environmental criteria that must be met to permit such discharges into waters of the United States. These criteria require a permitted discharge to: (1) be the least environmentally damaging practicable alternative (LEDPA); (2) avoid causing or contributing to a violation of a State water quality standard; (3) avoid jeopardizing a federally listed species or adversely modifying designated critical habitat for a federally listed species; (4) avoid causing or contributing to significant degradation of the waters of the United States; and (5) mitigate for unavoidable impacts to waters. A fully integrated DEIS that adequately addresses these criteria would facilitate the CWA Section 404 permit review process. EPA recommends integrating NEPA and CWA Section 404 requirements in the development of the DEIS.
A jurisdictional determination by USACE is needed prior to publication of the FEIS in order to provide a determination of potential significant impacts and identify mitigation and avoidance measures in the design of the Project. While Section 3.11 Water Quality and Stormwater Runoff discusses water quality, the DEIS does not address the status of consultation with USACE. The DEIS also does not disclose proposed permanent fill to waters of the United States from a numerical perspective nor does it sufficiently describe the activities proposed relevant to these waters and what functions would be affected with each alternative.

Recommendations:

- The FEIS should confirm whether a jurisdictional determination by USACE is needed prior to publication of the FEIS in order to provide a determination of potential significant impacts and identify mitigation and avoidance measures in the design of the Project.
- The FEIS should include an evaluation of the project alternatives in order to demonstrate the project’s compliance with the 404(b) (1) Guidelines and authorization of the Least Environmentally Damaging Practicable Alternative (LEDPA). The alternatives analysis should include a reasonable range of alternatives that meet the Project purpose while avoiding and minimizing damage to waters. If, under the proposed project, dredged or fill material would be discharged into waters of the U.S., the FEIS should discuss alternatives to avoid those discharges.
- The FEIS should disclose for each Alternative:
  - the acreage of waters impacted,
  - the effect to aquatic resource function from the proposed activity. This should be summarized both in the text and in a table format for reader clarity.

Avoidance and mitigation of aquatic resources is integral to the future 404 Clean Water Act permit process, yet is not discussed in the DEIS. The DEIS is an appropriate vehicle for the Project proponent to demonstrate compliance with future permit requirements, and EPA advocates that the avoidance and minimization be addressed to the extent practicable in the FEIS.

Recommendations:

- Include information provided in the FEIS so that estimated impacts are provided in acreage estimates. The FEIS should include estimates of acreages of direct and indirect impacts to waters.
- Differentiate between permanent and temporary impacts to aquatic resources.
- The FEIS should include a summary of avoidance and minimization measures for impacts to waters of the United States. This should include a summary of which Bridge Concepts will avoid impacts to aquatic resources. This will be particularly important for proposed impacts to soft bottomed waterways (i.e. turning soft bottom into concrete).
• If a discharge is permitted, the FEIS should discuss how potential impacts would be minimized and mitigated. This discussion should include: (a) acreage and habitat type of waters of the U.S. that would be created, restored, or preserved; (b) water sources to maintain the mitigation area; (c) a revegetation plan utilizing native plants; (d) maintenance and monitoring plans, including performance standards to determine mitigation success; (e) an Adaptive Management Plan; (f) the parties that would be ultimately responsible for the plan’s success; and (g) contingency plans that would be enacted if the original plan fails. Mitigation should be implemented in advance of the impacts to avoid habitat losses due to the lag time between the occurrence of the impact and successful mitigation.

On March 31, 2008, EPA and the Corps issued new regulations ("Mitigation Rule") governing compensatory mitigation to promote no net loss of aquatic resources by improving restoration and protection policies, increasing the effective use of mitigation banks, and strengthening the requirements for the use of in-lieu fee mitigation. These new compensatory mitigation standards emphasize best available science, promote innovation, and focus on results. This rule follows the recommendations of the National Research Council by establishing equivalent, effective standards for all forms of wetland replacement projects under the Clean Water Act. We emphasize that mitigation for impacts to waters of the United States proposed in the FEIS must be consistent with the new rule.

Recommendation:
• The FEIS should reflect the new mitigation rule and how the requirements of the new rule will be met by the proposed Project.

Stormwater Pollution Prevention

The proposed action occurs over an impaired section of the Los Angeles River for nitrate, pH and scum.(pg. 3-162). As such, the DEIS mentions that a Stormwater Pollution Prevention Plan (SWPPP) will be prepared and implemented, as a significant amount of construction will occur directly over the Los Angeles waterway. The SWPPP will include a number of Best Management Practices (BMPs) for implementation (at pgs. 3-164 and 3-165), and the DEIS indicates that no additional mitigation will be required.

Recommendations:
• In the FEIS, include specific short and long-term commitments outlined and identified in the SWPPP.
• Provide clarification as to the exact structural and non-structural BMPs to be implemented, as well as any remaining impacts to water quality despite mitigation measures.
Include information in the FEIS on the long-term maintenance plans for permanent structural BMPs in order to ensure long-term utility of the devices on the 6th Street Viaduct.

Air Quality/Construction Mitigation

The South Coast Air Basin (SCAB) is currently classified as a non-attainment area for ozone (O₃) and fine particulates PM₁₀ and PM₂.₅ (pg. 3-200). The SCAB has the worst 8-hour ozone, PM₁₀ and PM₂.₅ problems in the nation, and attainment of these NAAQS will require massive reductions from mobile sources, given the rapid growth in this emissions category and the long lifespan of diesel engines. Because of the air basin’s non-attainment status, it is important to reduce emissions of ozone precursors, mobile source air toxics (MSAT) and particulate matter from this project to the maximum extent.

The DEIS indicates that the implementation of either Alternative 2 (Retrofit) or Alternative 3 (Replacement) does not project any additional air quality impacts after construction, as vehicle throughput remains the same. The DEIS states that “the project is not a new facility, and does not include the addition of traffic lanes; therefore, no capacity enhancement or change in traffic pattern is anticipated”. (pg. 3-201)

While no additional capacity or traffic pattern changes are planned as a result of the Project, EPA has concerns pertaining to the direct and indirect air quality impacts as a result of the construction required for the Project.

Construction Emissions

The DEIS states that estimates of localized direct and indirect emissions do not exceed air quality standards at sensitive receptors (pg. 3-216). We commend the construction mitigation measures detailed on Table 4-6 on page 4-29, based on the lead agency’s estimate that peak daily construction emissions with mitigation would exceed the South Coast Air Quality Management District (SCAQMD) daily significance threshold for NOₓ. In addition to this issue, and due to the extremely poor quality in the immediate vicinity of the Project, EPA recommends that Caltrans commit to all applicable state and local requirements and the measures listed below in the FEIS and ROD in order to reduce impacts associated with emissions of PM and other toxics from construction-related activities.

Recommendations:

Fugitive Dust Source Controls:
- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to
both inactive and active sites, during workdays, weekends, holidays, and windy conditions.

- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

**Mobile and Stationary Source Controls:**

- Reduce use, trips, and unnecessary idling from heavy equipment.
- Maintain and tune engines per manufacturer’s specifications to perform at EPA certification, where applicable, levels and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. The California Air Resources Board has a number of mobile source anti-idling requirements which could be employed. See their website at: [http://www.arb.ca.gov/msprog/truck-idline/truck-idling.htm](http://www.arb.ca.gov/msprog/truck-idline/truck-idling.htm)
- Prohibit any tampering with engines and require continuing adherence to manufacturer’s recommendations.
- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards. Because of Project impacts to currently impaired air quality in the Project area and South Coast Air Basin (SCAB), Caltrans should commit to using Tier 4 standards when they become available, and ensuring the use of best available emission control technology for construction equipment that is used prior to Tier 4 standard availability. Utilize EPA-registered particulate traps and other appropriate controls where suitable to reduce emissions of particulate matter and other pollutants at the construction site.

**Administrative controls:**

- Identify all commitments to reduce construction emissions and update the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.
- Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.) Meet EPA diesel fuel requirements for off-road and on-highway, and where appropriate use alternative fuels such as natural gas and electric.
• Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
• Identify sensitive receptors in the project area, such as children, elderly, and infirm, and specify the means by which you will minimize impacts to these populations. For example, locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.

Mobile Source Air Toxics (MSATs)

EPA recommends an analysis of MSATs should be undertaken for the Project and disagrees with the conclusion in the statement that “FHWA has determined that this project will generate minimal air quality impacts for CAA criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs” (pg. 3-218). For Alternative 3 (Replacement), adverse impacts due to MSATs may occur to the surrounding community due to the traffic generated by a several-year detour in addition to multiple years of construction equipment emissions.

A large number of recent studies have examined the association between living near major roads and various adverse health endpoints. Several well-conducted epidemiologic studies have shown associations with cardiovascular effects, premature adult mortality, and adverse birth outcomes, including low birth weight and size. Traffic-related pollutants have been repeatedly associated with increased prevalence of asthma-related respiratory symptoms in children. Also, based on toxicological and occupational epidemiologic literature, several of the MSATs, including benzene, 1,3-butadiene, and diesel exhaust, are classified as known and likely human carcinogens. Thus, cancer risk, including childhood leukemia, is a potential concern in near roadway environments.

For additional information on MSATs, please see EPA’s MSAT website http://www.epa.gov/otaq/toxics.htm. MSAT analysis is further described in the March 2007 report entitled “Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the NEPA Process” conducted for the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on the Environment and funded by the Transportation Research Board (http://www.trb.org/NotesDocs/25-25(18)_FR.pdf). Procedures for toxicity-weighting, which EPA has found to be especially useful for the targeting of mitigation, are described in EPA’s Air Toxics Risk Assessment Reference Library (Volume 3, Appendix B, beginning on page B-4, http://epa.gov/ttn/ferra/data/risk/vol_3/Apps_B_April_2006.pdf).

These recommendations, and the recommendations included in the report for AASHTO referenced above, differ substantially from the FHWA interim guidance (February 2006) on MSAT analysis for transportation projects under NEPA. While there are positive elements to this guidance, especially the willingness to acknowledge potential MSAT concerns, EPA continues to disagree with major elements of this approach nationally.
Recommendations:

- In the FEIS, identify homes and sensitive receptors located within at least 200 meters from possible alternatives where there would be increases in truck and construction traffic/idling, increased roadway and rail traffic, construction activities, and staging area activity, and compare these numbers between alternatives. If the project would result in high average daily traffic (10,000 average daily traffic (ADT), for example), then the FEIS should at least identify the total tons per year anticipated for the six most significant MSATs, namely diesel particulate matter (DPM), acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene, for each alternative.
- Include an assessment of diesel emissions and provide plans for improving air quality through reducing diesel emissions.
- Identify design alternatives and options to further minimize MSAT impacts including indoor air quality improvements for all sensitive receptors within the project area.

Bike/Pedestrian Facilities

As Alternative 2 (Retrofit) does not change the width of the viaduct or address viaduct design, Alternative 2 does not cause a loss for bicycling and pedestrian access, but similarly does not provide new mobility opportunities.

However, in Alternative 3 (Replacement), the complete replacement of the bridge creates an opportunity for providing additional bicycle and pedestrian capacity on the bridge, as the new bridge includes wide shoulders as well as a new pedestrian walkway on each side of the bridge.

In all viaducts and Bridge Concepts proposed under Alternative 3, 8 foot wide shoulders are currently planned to be designated as a bicycle routes under the City of Los Angeles Bicycle Plan Policy. In the DEIS, the roadway shoulder appears to be shared use between motorists and bicyclists. As the Bicycle Plan Policy states that any bridge reconstruction or replacement should be designed with adequate roadway to accommodate a bicycle facility (pg. 3-19), Caltrans and the City should ensure that bicyclists are given appropriate, secure access on the replacement viaduct instead of a shared-use facility that could potentially compromise their safety.

In addition, while all the Bridge Concepts under consideration are functionally equivalent for the purposes of motorized travel, and the bridge type does not affect the results of the environmental impact analysis (pg. 2-56), the pedestrian experience can vary greatly based on the bridge configuration. Bridge Concept 2 (Cast-in-place Box Girder with Steel Tied Arch Pedestrian Ways) is the only option that provides a significantly separated corridor for pedestrians on the bridge itself, and none of the concepts or viaduct designs appear to provide a pedestrian walkway that is separated from the roadway by a physical barrier, presenting a potentially serious safety issue.
Finally, there appears to be no mention of frequency or intensity of light fixtures on the viaduct. If the viaduct is to be increasingly used as a bicycle and pedestrian corridor, improved lighting facilities are critical — especially at night — for pedestrian and bicyclist safety.

Recommendations:

- If Alternative 3 is chosen, EPA recommends that final bridge concepts include formal eastbound and westbound bicycle routes that are clearly defined, signed and marked, as well as completely separated if possible.
- EPA also urges that the final bridge concept chosen provide appropriate and separated pedestrian accommodations in order to heighten both safety, as well as the aesthetic experience for pedestrians, such as the efforts made in Bridge Concept 2. In addition, the FEIS should include information on the number, location and intensity of light fixtures on the viaduct.
SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

1. **The Staff Analysis Section of the Draft EIR/EIS does not provide the comparative rationale to fully justify the selection of Alternative 3.** The alternative development process described in Appendix N of the FEIR/EIS provides a summary of the alternative evaluation results, which are presented in Table 3 (for Retrofit Alternatives) and Table 4 (for Replacement Alternatives). The full minutes of meetings and ranking comparisons are available on file for review upon request. A preferred alternative evaluation workshop was conducted on September 29, 2009 to evaluate the various alternatives and identify a preferred alternative, taking into account the results of environmental analysis and the input received during the DEIS/EIR public review period; the preferred alternative evaluation criteria included the factors identified by EPA in these DEIR/EIS comments. The FEIR/EIS provides the result of alternative evaluation in detail as recommended by EPA (see Appendix N).

2. **Include a more robust cumulative impact analysis that includes impacts to resources, as well as transportation circulation, in the FEIS.** An expanded analysis of cumulative impacts on relevant environmental resources resulting from the proposed action in combination with other projects was prepared and is presented in Section 3.26 of the FEIR/EIS. The expanded analysis was prepared following the 2005 Guidance for Preparers of the Cumulative Impact Analysis prepared jointly by Caltrans, FHWA, and EPA.

3. **Results of formal consultation with SHPO should be included in the FEIR/EIS.** As stated in the Draft Section 4(f) Evaluation (Draft EIR/EIS, Appendix B, Section 4.9.1), “A Memorandum of Agreement (MOA) will be prepared by Caltrans and submitted to FHWA and the SHPO for comment. … Once FHWA and SHPO agree on the terms and conditions of the MOA, it will be executed and Caltrans will concur. The conclusions of this analysis will be presented in the Final Section 4(f) Evaluation that will be circulated with the Final EIR/EIS.” (See discussion in the Response to Comment Letter No. 11, Response 10.) As described in the EIR/EIS and Section 4(f) Evaluation, the MOA stipulation(s) include preserving a record of the viaduct through large-format photography and film/video documentation prior to alteration or demolition.

The executed MOA is incorporated into the FEIR/EIS.

Concerning retention of historically relevant features, the City is receptive to retaining some character-defining features of the existing bridge in the replacement viaduct during the final design and construction phase of project development, as appropriate, based on the bridge type selected. The City is also receptive to relocating architectural elements of the existing bridge to a new location in a public setting, depending on concurrence by the SHPO. This will be stipulated in the Record of Decision (ROD) approved by Caltrans as a designee of the Federal Highway Administration (FHWA).

4. **Local/commuter benefits and impacts.** U.S. Census records show that within a 3-mile radius of the project area, the demographic composition is 80.9 percent Hispanic/Latino and 19.2 percent Others. These residential areas are located east of the Los Angeles River. Analysis of a 3-mile stretch of residential areas along 6th Street and Whittier Boulevard bounded by 4th Street and 7th Street, using trip generation codes published by the Institution of Transportation Engineers, determined that local trips utilizing the 6th Street Viaduct total approximately 11,500 vehicles per day (out of the daily average of 13,260), and they were predominantly
passenger cars. The following table summarizes the approximate demographic composition of traffic on the 6th Street Viaduct, based on the estimated percentage of local traffic from the eastside:

<table>
<thead>
<tr>
<th>Traffic Type</th>
<th>Volume (Vehicle per day)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Daily Traffic</td>
<td>13,260</td>
<td></td>
</tr>
<tr>
<td>Through Traffic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck</td>
<td>790</td>
<td>6</td>
</tr>
<tr>
<td>Passenger Car</td>
<td>990</td>
<td>7</td>
</tr>
<tr>
<td>Local Passenger Car</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>9,290</td>
<td>70</td>
</tr>
<tr>
<td>Others</td>
<td>2,190</td>
<td>17</td>
</tr>
</tbody>
</table>

Based on the above information, it can be concluded that 6th Street serves the local population more than regional commuters.

5. **Workforce issue.** EPA recommended that the FEIS should include a survey of the racial/ethnic and income characteristics of the workforce of affected businesses. A business survey was conducted during preparation of the DEIR/EIS. All potentially affected businesses were interviewed and asked to provide the information about their businesses, relocation issues, number of employees, and average distance employees live from work. (See the survey questions in Figure 3.4-1 of the EIR/EIS). Out of the 40 businesses interviewed, only a few provided information about their employees. Based on the experience of the original survey, an additional survey to collect specific data on racial/ethnic and income characteristics of the workforce of affected businesses would be unlikely to yield these results. Based on the socioeconomic characteristics of the study area, the environmental justice section of the EIR/EIS has assumed that most workers within the affected area are of low income and predominantly minority. The EIR/EIS also concluded that the proposed project would result in disproportionately high adverse effects on minority and/or low-income populations within the area, which include the workforce. With this conclusion, the City and Caltrans do not believe that the new survey on racial/ethnic and income characteristics of the workforce of affected businesses would change the environmental justice current analysis findings in the EIR/EIS and supporting studies.

It should also be noted that the City staff and PDT have had discussions with many of the business owners within the potentially affected area during the public review period of the Draft EIR/EIS and most of them expressed the interest to remain within the Downtown area; therefore, the workers would have potential to continue their employment with these affected businesses once they are settled into new locations.

6. **Transit.** The FEIS should include information from the Traffic Management Plan (page 4-27) regarding transit impacts, and should quantify the disproportionate impact to low income, minority transit riders as a result of the closing of the viaduct. The FEIS should include descriptions of proposed alternative transit routes and measures to be taken to limit disruptions to current service. See response to comment 4 for local traffic/demographic composition. Based on this information, it appears that the transit routes along the 6th Street
Viaduct serve primarily a minority population, which is presumed to be low income based on available data analyzed. The EIR/EIS identifies 7th Street as a detour route for Transit Route 18 and MetroRapid Route 720. The EIR/EIS estimated that there would be approximately 0.4-mile of additional travel distance, which would add 5 to 10 minutes of travel time depending on traffic conditions. The City would implement a public outreach program to keep transit riders aware of the construction schedule and the designated detour routes. The City would implement the TMP throughout the construction period to minimize traffic impacts.

7. **A jurisdictional determination by U.S. Army Corps of Engineers (USACE) is needed for the FEIS in order to provide a determination of potential significant impacts and identify mitigation and avoidance measures.** The project potentially involves placement of fill in the Los Angeles River, which is a jurisdictional waterway of the USACE (confirmed via consultation with Ken Wong, USACE Regulatory Division, Los Angeles District, September 2009). The nature of the fill is placement of viaduct piers within the waterway. A USACE Section 404 permit will be obtained during the final design phase.

A summary of the permanent direct impacts, resulting from the fill associated with the viaduct piers, is provided in the table below. Note that some alternatives involve the removal of the existing viaduct’s center pier in the river. For the two alternatives in which the existing viaduct pier is not retrofitted or removed, this is shown as zero in the third column of the table below. The areas shown are of the cross sections of the viaduct piers (impact to waterway). The net new impact would be the increased footprint area, as compared to the existing footprint area.

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Alternative Viaduct Pier Footprint (acres)</th>
<th>Existing Viaduct Pier Footprint (acres)</th>
<th>Net New Impact to LA River (acres)</th>
<th>Impacted Area of the Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – No Action (Leave Existing Viaduct)</td>
<td>0.048</td>
<td>0.048</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>2 – Retrofit</td>
<td>0.048</td>
<td>0.048</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>3 – Concept 1</td>
<td>0.089</td>
<td>0.048</td>
<td>+0.041</td>
<td>Water Column, Concrete Bottom</td>
</tr>
<tr>
<td>3 – Concept 2</td>
<td>0</td>
<td>0.048</td>
<td>-0.048</td>
<td>N/A</td>
</tr>
<tr>
<td>3 – Concept 3</td>
<td>0</td>
<td>0.048</td>
<td>-0.048</td>
<td>N/A</td>
</tr>
<tr>
<td>3 – Concept 4</td>
<td>0.045</td>
<td>0.048</td>
<td>-0.003</td>
<td>N/A</td>
</tr>
<tr>
<td>3 – Concept 5</td>
<td>0.021</td>
<td>0.048</td>
<td>-0.027</td>
<td>N/A</td>
</tr>
<tr>
<td>3 – Concept 4A</td>
<td>0.049</td>
<td>0.048</td>
<td>+0.001</td>
<td>N/A</td>
</tr>
</tbody>
</table>

As is evident in the table above, a reasonable range of alternatives has been developed to meet the proposed project purpose while avoiding and minimizing impact to the waterway. Based on the table above, most alternatives would have no or negligible net impact to the Los Angeles River waterway (i.e., they avoid placement of fill in U.S. waters) except for Alternative 3 – Concept 1 which would result in an additional impact. Alternative 3 with the principle of Concept 4 has been identified as the preferred alternative, and it would not place additional fill in U.S. waters. The Los Angeles River in this area is concrete-lined channel, so there would be no soft bottom habitat impact. Because no natural conditions or native vegetation types are present in this portion of the channel or in the immediate vicinity, it does not provide suitable habitat for any special-status plant or wildlife species. The site also does
not contain any federally designated critical habitat areas. Due to the extremely limited biological value of the concrete-lined waterway, the minimal amount of fill is not expected to degrade any local species habitats or other biological resources, and the impact would be considered less than significant. No mitigation would be required beyond the standard conditions that may be included in the Section 404 permit to be issued by USACE. Further discussion regarding the biological resources within the project impact area is provided in Section 3.19.

8. **Impacts to aquatic resources.** The estimated acreages of direct impacts to the Los Angeles channel are provided in the response to comment 7 above. The only potential indirect impact to waters would be the shadowing of the water underneath the viaduct; however, because no significant aquatic/wetlands vegetation exists underneath any of the proposed viaduct alignments, there would be no indirect impacts to aquatic resources from any of the alternatives. This is further discussed in Section 3.19 of the FEIR/EIS.

Permanent impacts to aquatic resources (water column) are those caused by the fill associated with construction of the viaduct piers. As discussed above, because this is a concrete bottom, the only impacts are to the water column/freshwater aquatic habitat.

Temporary impacts to aquatic resources (water column) are those caused during construction, and they would be associated with temporary installation of falsework within the Los Angeles River channel during the construction period. However, construction would be constrained to occur only during the dry season (April 16 to October 14), and the water level within the river would be low; therefore, temporary impacts to waters would be insignificant.

There are no impacts to soft-bottomed waterways because this is already a concrete-lined channel. Alternatives 1, 2, and 3 – Concepts 2, 3, 4, 4A, and 5 avoid impacts to the channel. Only Alternative 3 – Concept 1 has a net fill impact and thus potential impacts to aquatic resources. In general, impact avoidance and minimization measures would be to select an alternative that has no or lesser impact to the waters. Because Alternative 3 with the principle of Bridge Concept 4 has been identified as the preferred alternative, it is anticipated that the project will have no or lesser net impact to waters, and it is assumed that no mitigation will be required.

9. **New mitigation rule pertaining to aquatic resources mitigation should be included in the FEIS.** As stated in response to comment 7, no mitigation would be required beyond the standard conditions that may be included in the Section 404 permit to be issued by USACE.

10. **Stormwater pollution prevention.** Temporary (short-term) mitigation measures to treat storm runoff throughout the demolition and construction processes will be implemented and incorporated into a Stormwater Pollution Prevention Plan (SWPPP), which details the placement, staging, and monitoring of best management practices (BMPs) required for project construction. These BMPs are designed to control discharges of pollutants from regulated construction projects and pollutants from stormwater and non-stormwater discharges. Potential BMPs include limiting construction to the dry season; using non-shattering methods; placing platforms under/adjacent to the viaduct to collect debris; providing watertight curbs or toeboards on the viaduct to contain spills and prevent materials, tools, and debris from falling from the viaduct; stockpiling accumulated debris and waste generated from demolition away from the channel; and directing water from concrete curing and finishing operations away
from inlets and water courses to collection areas for dewatering, etc. The SWPPP will be prepared by the construction contractor during preparation of the contract documents.

The new viaduct would be designed to capture all of the anticipated runoff for treatment at the permanent BMPs that would be installed within the vicinity of the viaduct prior to discharging to the Los Angeles River. Permanent treatment BMPs considered for the project include detention basins, biofiltration swales, and storm drain inserts (specifically vortex separators). These BMPs would be sized and installed to meet County and City of Los Angeles guidelines. With the BMPs in place, no adverse impacts to surface water quality because of stormwater runoff are anticipated.

Permanent BMPs will be maintained by the Bureau of Sanitation, Los Angeles City Department of Public Works. Maintenance will be performed according to plans and requirements specified in the Los Angeles County Department of Public Works Standard Urban Stormwater Mitigation Plans (SUSMP) for those selected BMPS, which include erosion control measures and cleaning of biofiltration swales, detention basins inspection and vortex cleaning post significant storm events, etc.

11. **Construction emissions.** Most recommendations are included in Section 3.15.4 of the FEIR/EIS.

12. **Mobile Source Air Toxics (MSATs).** The FEIS should identify homes and sensitive receptors located within at least 200 meters (600 ft) from possible alternatives where there would be increases in truck and construction traffic. The six most significant MSATs should be analyzed. Figure 3.15-1 of the EIR/EIS presents the sensitive receptors within proximity of the 6th Street Viaduct Seismic Improvement Project. The closest sensitive receptors (residences) are located approximately 600 feet (less than 200 meters) northeast of the viaduct from the east end. Figures 3.7-5 and 3.7-6 of the EIR/EIS show the detour routes where traffic volumes would increase during construction of Alternative 3 as a result of the viaduct closure (note that Alternative 2 would not require the traffic detour). Residents and business owners residing near the detour routes are located less than 200 meters (656 feet) from the roadway. Emissions of the six most significant MSATs at the locations along the detour routes were quantified, as shown in Table 4-3. Results of the analysis show higher levels of MSATs at certain locations along the detour route and lower levels at locations near the viaduct during the construction period. The proposed project would not result in an increase in MSATs over the long-term because the project does not increase roadway capacity; therefore, it would not result in an increase in traffic through the project area.

13. **Provision of bicycle routes.** The proposed new viaduct would be compatible with the City of Los Angeles newly adopted 2010 Bicycle Plan. The proposed new viaduct design would meet the requirements of the secondary highway standards. It should be noted that the roadways connecting the 6th Street Viaduct east and west of the river contain no bike lanes. It is not the Los Angeles Department of Transportation’s (LADOT) policy to stripe bike lanes on a short roadway segment, such as a bridge, that does not connect to adjacent lanes on either end; however, this could be done in the future if the roadways at both ends of the bridge were ever widened to full secondary highway standards (i.e., 70 ft curb to curb) so that bike lanes could be added and a continuous bike facility could be established.
14. **Difference in pedestrian experience on varying bridge types proposed in the Draft EIR/EIS.** Only Bridge Concept 2 would provide a significantly separated corridor for pedestrians on the bridge. The City standards for secondary highways include the following section that is applied to all of the replacement bridge types:

- 11-ft-wide inside lanes, and up to 19-ft-wide outside lanes and 10-ft-wide sidewalks
- Up to 10-ft-wide median

The sidewalks are elevated with a standard curb between the traveled way and sidewalk. The sidewalks would be provided along the entire viaduct length and are approximately 3,440 ft in length for all the bridge types.

Along the viaduct length, belvederes could be provided for Bridge Concepts 1, 2, 3, 4, and 4A. These belvederes would be for pedestrians and are located outbound of the sidewalks away from the traveled way for comfort to the pedestrian and for viewing at the middle of the river or along the river banks. Across the river spans, Bridge Concepts 1, 2, and 3 also provide crash barriers between the traveled ways, protecting the steel arches from vehicular impact, but they also provide additional separation between the traveled way and sidewalks. In addition, Bridge Concept 2 uses steel tie arches for the pedestrian ways across the river spans, creating a unique pedestrian experience while crossing the river, being separated by a few feet from the viaduct roadway. Bridge Concepts 4 and 4A also provide crash barriers between the traveled ways, protecting the cable stays from vehicular impact, and also providing additional separation between the traveled ways and sidewalks. These barriers extend over the river spans and along the entire cable-supported spans.

This information is provided in Section 3.7.3.2 of the FEIR/EIS.

15. **Information on frequency or intensity of light fixtures was not provided.** This will be determined in the final design. The preliminary cost estimates include light fixtures in accordance with the City of Los Angeles Bureau of Street Lighting standards.

16. **Under Alternative 3, a separate bike route should be included in the final design.** See response to comment 13.

17. **Under Alternative 3, a separate pedestrian way should be included in the final design.** See response to comment 14.
Mr. Carlos Montez
Senior Environmental Planner
California Department of Transportation
100 South Main Street
Los Angeles, California 90012
Carlos.montez@dot.ca.gov

Dear Mr. Montez:

The Department of the Interior (Department) reviewed the Draft Environmental Impact Statement (EIS) and Draft Section 4(f) Evaluation for the proposed 6th Street Viaduct Seismic Improvement Project, Los Angeles County, California. The California Department of Transportation (Caltrans) and City of Los Angeles (City) propose to retrofit or replace an existing historic 1932 bridge to reduce seismic vulnerability, correct design deficiencies, and maintain connectivity between Boyle Heights and downtown Los Angeles.

**Section 4(f) of the Department of Transportation (DOT) Act**

Under Section 4(f) of the Department of Transportation Act, Federal Highway Administration and other DOT agencies shall not approve the "use" of publicly-owned parks, recreational areas, wildlife and waterfowl refuges, and/or historical sites unless there is no prudent and feasible alternative, and unless all possible planning to minimize harm to the property has occurred.

The bridge is protected under Section 106 of the National Historic Preservation Act and Section 4(f). The Department defers to the State Historic Preservation Officer for Section 4(f) mitigation concerning the bridge. Execution of the Memorandum of Agreement (MOA) should be evidenced in the Final EIS, as is currently planned by Caltrans and the City.

The proposed mitigation measures identified for the Retrofit Alternative under Section 6.1 and the Replacement Alternative under Section 6.2 on pages B-36 through B-37 should be included in the MOA, though the Department does not suggest that mitigation
measures be limited to only these in the MOA. The mitigation measures discussed in the Draft EIS are as follows:

**For the Retrofit Alternative:**

- Incorporation of all applicable Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R. Part 68) into the design of retrofitting components.
- Installation of two new freestanding informative permanent metal plaques or signage at both ends of the bridge at public locations that provide a brief history of the bridge, its engineering features and characteristics, and the reasons it was replaced. Additionally, installation of two Cultural Heritage plaques at the ends of the bridge would occur on the interior bridge rails in accordance with the City's Cultural Heritage Monument program.
- While the 6th Street Viaduct was previously recorded as part of the Historical American Engineering Record (HAER) program in 1996, contact with the National Park Service (NPS) Historic American Building Survey (HABS)/HAER program would occur prior to any viaduct demolition or construction activities.

**For the Replacement Alternative:**

- As with the Retrofit Alternative, installation of two new freestanding informative permanent metal plaques or signage at both ends of the bridge and two Cultural Heritage plaques at both ends of the bridge on the interior.
- As with the Retrofit Alternative, consultation with the NPS HABS/HAER program prior to demolition.
- Production of a documentary (motion picture or video) that addresses the history of the Los Angeles River Monument bridges, and their importance and use within the history of the City of Los Angeles. The motion picture or video would be of broadcast quality, of sufficient length for a standard 2-hour program, and would be made available to local broadcast stations, public access channels in the local cable systems, and requesting schools/libraries. One copy would be submitted to the Caltrans Transportation Library in Sacramento.
- Production and publication of a book on the Historic Los Angeles River bridges that addresses the history of the monumental concrete bridges of Los Angeles and the place of the subject bridge in that history. The book would include high-quality black-and-white photos of the Los Angeles River Bridges, historic photographs or drawings, as appropriate, and text describing each bridge's location, year built, builder, bridge type, significant character-defining features, and its historical significance.

For questions concerning Section 4(f), please contact Ms. Kelly Powell, Environmental Compliance Reviewer, National Park Service, 168 South Jackson Street, 2nd Floor, Seattle, Washington 98104-2853; telephone (206) 220-4106; kelly_powell@nps.gov.
Thank you for the opportunity to provide these comments.

Sincerely,

Willie R. Taylor
Director, Office of Environmental Policy and Compliance

cc:
Mr. Wallace E. Stokes III
Environmental Coordinator
City of Los Angeles
221 North Figueroa Street, Suite 350
Los Angeles, CA 90012
wally.stokes@eng.lacity.org
Response to Comment Letter No. 23 – U.S. Department of the Interior

1. **Execution of the MOA should be evidenced in the FEIS.** The executed MOA is presented in Appendix O of the FEIS.

2. **Mitigation measures presented in the Draft EIR/EIS should be included in the MOA.** Some of the mitigation measures presented in the Draft EIR/EIS have been included in the executed MOA, as well as new ones, and in the Mitigation monitoring and Reporting Program.
Wally Stokes  
City of Los Angeles Department of Public Works  
221 N. Figueroa, Suite 330  
Los Angeles, CA 90014-1914

Subject: 6th Street Viaduct Improvement Project  
SCH#: 2007081005

Dear Wally Stokes:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on August 15, 2009, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan  
Acting Director, State Clearinghouse

1600 10th Street  P.O. Box 3044  Sacramento, California 95812-3044  
(916) 445-0613  FAX (916) 323-3018  www.opr.ca.gov
Appendix M  Written Comments and Responses on DEIR/EIS

### Document Details Report
**State Clearinghouse Data Base**

<table>
<thead>
<tr>
<th>SCH#</th>
<th>2007081008</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Title</strong></td>
<td>6th Street Viaduct Improvement Project</td>
</tr>
<tr>
<td><strong>Lead Agency</strong></td>
<td>Los Angeles, City of</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Type</strong></th>
<th>EIR Draft EIR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>NOTE: Review Per Lead The City of Los Angeles, in cooperation with Caltrans, is proposing to make improvements to the 6th Street Viaduct to improve this critical Los Angeles River crossing to an acceptable standard during a seismic event by either retrofitting the existing structure or replacing it entirely. The 3,500 ft long 6th Street Viaduct was built in 1932. Over the past 75 years, the concrete elements of the viaduct have been degraded by an ongoing chemical reaction, known as Alkaline Silica Reaction, which has led to significant deterioration of the structure and loss of its seismic integrity, despite continuing efforts to arrest or limit its effect.</td>
</tr>
</tbody>
</table>

### Lead Agency Contact

<table>
<thead>
<tr>
<th>Name</th>
<th>Wally Stokes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agency</strong></td>
<td>City of Los Angeles Department of Public Works</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>(213) 202-5580</td>
</tr>
<tr>
<td><strong>Fax</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Email</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td>221 N. Figueroa, Suite 350</td>
</tr>
<tr>
<td><strong>City</strong></td>
<td>Los Angeles</td>
</tr>
<tr>
<td><strong>State</strong></td>
<td>CA</td>
</tr>
<tr>
<td><strong>Zip</strong></td>
<td>90014-1914</td>
</tr>
</tbody>
</table>

### Project Location

| **County** | Los Angeles |
| **City** | Los Angeles, City of |
| **Region** | |
| **Lat / Long** | |
| **Cross Streets** | Mill St and east of southbound I-5 |
| **Parcel No.** | |
| **Township** | 1S |
| **Range** | 13W |
| **Section** | 34 |
| **Base** | SBB&M |

### Proximity to:

- **Highways**: 101, I-5
- **Airports**: No
- **Railways**: BN&SF, UPRR
- **Waterways**: Los Angeles River
- **Schools**: Soto SIES, Bishop Mora Salesian, Metropolitan HS, Para Los Ninos, Chater
- **Land Use**: PLU: developed, heavy-light industrial 2: heavy industrial, public facilities, light industrial GP: heavy industrial, public facilities, light Industrial
- **Project Issues**: Aesthetic/Visual; Air Quality; Archaeological-Historic; Wildlife; Growth Inducing; Toxic/Hazardous; Traffic/Circulation; Vegetation; Flood Plain/Flooding; Geologic/Seismic; Landuse; Cumulative Effects; Noise; Economics/Jobs; Water Quality; Solid Waste; Public Services

### Reviewing Agencies

- Resources Agency; Department of Fish and Game, Region 5; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Office of Emergency Services; California Highway Patrol; Caltrans, District 7; Integrated Waste Management Board; Regional Water Quality Control Board, Region 4; Department of Toxic Substances Control; Native American Heritage Commission; Public Utilities Commission; State Lands Commission; Other Agency(ies)

### Date Received

**09/12/2009**  **Start of Review** **09/12/2009**  **End of Review** **09/15/2009**

Note: Blanks in data fields result from insufficient information provided by lead agency.
Response to Comment Letter No. 24 – Governor’s Office of Planning and Research

No comments from state agencies were received. Information is acknowledged.
GABRIELEÑO BAND OF MISSION INDIES
A HISTORIC & PREHISTORIC TONGVA INDIAN TRIBE
NATIVES OF CALIFORNIA FOR OVER 6,000 YEARS

October 30, 2009

Mr. Carlos Montez, Senior Environmental Planner
Caltrans District 7
100 S. Main Street
Los Angeles, CA 90012
Tel: (213) 897-3818
Fax: (213) 897-0685

Re: Environmental Impact Report/NA Monitoring
6th Street Viaduct Seismic Improvement Project

Dear Mr. Montez,

This letter is in response to the Environmental Impact Report for above referenced project. Due to the fact that the proposed project is within the traditional tribal territory of the Gabrieleño Band of Mission Indians it is my responsibility to inform you of our concern for the identification, protection and proper disposition of our cultural resources.

Since the EIR report states the potential impact to archaeological resources, paleontological resources and human remains it is our recommendation that a Native American monitor be on site at all times during any excavation or ground disturbances. The monitoring service shall be provided through our tribal office.

I can be reached at 626-926-4131 or by email at Gabrielenoindians@yahoo.com should you have any questions or comments regarding this matter; please do not hesitate in contacting our office.

I look forward to assisting all parties with the preservation of our cultural resources.

Sincerely,

Andrew Salas
Chairman

GabrielenoIndians@yahoo.com  P.O. Box 393 Covina, Ca 91723  (523) 335-8798

2138808181
Response to Comment Letter No. 25 – Gabrieleno Band of Mission Indians

Native American monitor should be on site during excavation activity. Comment is noted and the City will provide the monitor during excavation.
July 28, 2010

To Whom It May Concern:

Portions of the 6th Street Viaduct project are located within the Amended Adelante Eastside Redevelopment Project Area (Project Area) of the Community Redevelopment Agency of the City of Los Angeles (CRA/LA). The CRA/LA wishes to express concerns regarding a possible orientation change in the bridge in addition to comments submitted on June 4, 2008. A Project Area Historic Survey (Historic Survey) was finalized on July 22, 2010. Included in the Historic Survey is an industrial district that is located along the 500 and 600 blocks of Anderson Street (Historic District). It appears that the 6th Street Viaduct project being considered may have substantial impacts to this Historic District.

It has come to the attention of CRA/LA Staff that any change in the orientation of the bridge from the bridge’s existing orientation would result in the partial, if not total, destruction of this Historic District. This would cause a substantial adverse change in the significance of a historic resource as defined by the State CEQA guidelines, thus, resulting in a significant environmental impact.

Further, potential destruction of the Historic District is contrary to the Project Area Redevelopment Plan goals and objectives. This conflict with the regulation of an agency with jurisdiction over the area would also create a potentially significant environmental impact.

Both the Cultural Resources and Land Use and Planning potentially significant impacts that are now being brought to your attention in relation to the Historic District must be included in your analysis in order for the full environmental impact of the 6th Street Viaduct project to be considered. I am available to answer any questions regarding this matter.

Sincerely,

Julia Stewart
CRA/LA City Planner
Fig 1: Attachment to CRA/ALA Letter (July 28, 2010); Map dated 9/3/2008
Fig 2: Map excerpted from Intensive Historic Resources Survey Report, Oct 2008
CRA/LA finalized the Adelante Eastside Redevelopment Area Historic Survey on July 22, 2010. Included in the Historic Survey is the Anderson Street Historic District. It appears that the 6th Street Viaduct Project may have substantial impacts to the Anderson Historic District.

The letter from the CRA/LA indicated that the historic survey of the Adelante Eastside Redevelopment Area was finalized on July 22, 2010. A map of the proposed “Historic District – Anderson Street (dated September 2008)” attached to the CRA/LA letter shows one building on the potentially affected property list of the 6th Street Viaduct Seismic Improvement Project (proposed project) being classified as “contributor” to the proposed Anderson District (Building No. 17 in Figure 1). This building was determined to be not eligible for the National Register of Historic Places (NRHP) by Caltrans based on the 2007 Historic Resources Evaluation Report (HRER) prepared for proposed project as part of the Section 106 consultation process.

In response to the CRA/LA request, the Project Development Team (PDT) contacted CRA/LA staff to obtain detailed information about the survey and any planned local nomination/certification process for the proposed district. The CRA/LA provided a copy of a section of the report entitled “Intensive Historic Resources Survey, Adelante Eastside Redevelopment Area, July 2008” in January 2011. Per the City’s request, the CRA/LA later provide a copy of the full report in May 2011.

The text of the report indicated the two buildings within the proposed project potentially affected property list (14 and 17) are in the proposed Anderson District. The Potential District map in Attachment D of the report, (see Figure 2) shows these two buildings as individually eligible, not as district contributors. The report does not include any Department of Parks and Recreation (DPR) forms for these two buildings that can be used as a basis to conclude that they are individually eligible. Further, the report does not include the DPR form that documents the potential district. However, the DPR form was sent to the PDT with the partial report in January 2011; it showed only the district evaluation, not individual buildings. Based on the cultural resource records search conducted by the PDT in February 2011, none of the properties referenced in the “Intensive Historic Resources Survey, Adelante Eastside Redevelopment Area, July 2008” were filed with the Information Center. Based on review of the available documents associated with the potential Anderson District mentioned above, there appear to be several inconsistencies and errors that require correction and finalization.

The PDT also understands that the Historic Survey report was submitted to Survey L.A. for inclusion in Phase 3, which will not begin until next year. Ms. Janet Hanson of Survey L. A. stated that she had reviewed the draft report and had noted errors and discrepancies to be corrected, but had not received any update as of May 2011.

It is the PDT’s understanding that the historic survey was prepared as a planning tool for CRA/LA. The methodology employed looked at a large number of properties at a reconnaissance level and made recommendations based on broad patterns of significance. The intent and use of a planning tool is to provide planners with an indication as to the potential presence or absence of potentially significant historic properties. However, this
document does not provide sufficient data to make a determination of significance for the NRHP for the purposes of Section 106 of the National Historic Preservation Act (NHPA) or for CEQA.

CEQA states that a property is presumed to be historically significant unless a preponderance of evidence demonstrates otherwise. In the case of the 6th Street Viaduct Project, the properties that have the potential to be affected by the proposed undertaking were identified and evaluated at an intensive level (research and evaluation on individual buildings as opposed to looking at large bodies of buildings at a cursory level). Section 106 only considers properties as “historic properties” when they meet the criteria for the NRHP. Therefore, Caltrans prepared sufficient evidence to demonstrate that the subject properties are not historic properties for the purposes of Section 106 or historical resources for the purposes of CEQA.

Based on the result of the cultural resources intensive evaluation of the proposed project under Section 106 consultation process, the City and Caltrans concluded that the proposed project would not result in substantial impact to other historic resources in addition to the 6th Street Viaduct itself, which has been evaluated and documented in this EIR/EIS.

2. Change in the orientation of the 6th Street Viaduct from the existing orientation would result in the partial, if not all, destruction of the Historic District, which would cause a substantial adverse change in the significance of a historic resource as defined by the State CEQA guidelines, thus, resulting in a significant environmental impact.

Please refer to response to comment #1 above.

3. Potential destruction of the Historic District would be in conflict with the goals and objective of the Adelante Eastside Redevelopment Plan, creating a potentially significant environmental impact.

The EIR/EIS documented that the loss of some industrial buildings within the CRA/LA project areas would be inconsistent with the goals and objectives of the two redevelopment projects administered by CRA/LA. However, based on Response #1 above, the proposed project would not create a potentially significant impact to any historic resources in addition to the 6th Street Viaduct itself; thus, it would not be in conflict with the goals and objectives of the Adelante Eastside Redevelopment Plan in this regard.

4. Cultural Resources and Land Use and Planning potentially significant impacts in relation to the Historic District must be included in the environmental analysis.

The Final EIR/EIS documented the potential Anderson Historic District raised by CRA/LA and the conclusion made by the City and Caltrans (see Section 3.9.2).
Appendix N
Alternative Development Process
Appendix N  Alternative Development Process

Based on the project’s purpose and need, several alternatives were developed and evaluated during the draft environmental document preparation phase. Interested agencies and the public were given opportunities to provide input and direction to the development and selection of alternatives through the public scoping process, cooperating agency coordination, citizen advisory committee meetings, and expert panel evaluation. The following subsections describe the alternative development activities that occurred during the project development phases.

1. Seismic Retrofit Alternatives Evaluation

Following the material testing of the 6th Street Viaduct in 2002, the City prepared a Seismic Retrofit Pre-Strategy Report summarizing its findings. In the retrofit pre-strategy phase, linear and nonlinear analyses were conducted to determine seismic demands and capacities of the as-built approach spans of the structure. Seismic deficiencies of the as-built structure were determined from the analytical results. The as-built analyses showed that the structure could collapse under the maximum credible earthquake (MCE). This is evidenced by the high displacement demand-to-capacity (D/C) ratios of the structure under such loading. The analyses also showed that some columns of the existing structure could suffer shear failure under the MCE event due to concrete degradation. A seismic vulnerability study, which was also conducted in the retrofit pre-strategy phase, showed a high probability of collapse.

Five retrofit alternatives were studied and evaluated in the Final Seismic Retrofit Strategy Report, as described in the following paragraphs. The goal of retrofit Alternatives 1 through 4 was to seismically retrofit the existing structure to meet current public safety requirements. These retrofit alternatives accounted for the structure’s material degradation, but they did not provide any measures to arrest future degradation; moreover, each of these alternatives would require future seismic retrofits. The goal of Alternative 5 would be to seismically retrofit the existing structure, taking into account future ASR deterioration of approximately 66 percent of the existing columns over a period of time (approximately 30 years); however, none of the retrofit alternatives accounted for future ASR deterioration in the footings, 33 percent of the existing columns, bent caps, superstructure diaphragms, or bridge deck. These elements, although not necessary to prevent a collapse of the viaduct, would continue to deteriorate from the ASR.

---

In addition to the five retrofit alternatives mentioned above, the Replacement with Historic Replica (Modified Retrofit) and Substructure Alternative were studied in response to suggestions from the preservationists to consider other partial preservation alternatives.

1.1 Retrofit Alternative 1: Infill Wall Construction
This retrofit alternative consists of construction of infill walls between columns at 17 bents, and construction of 6 grade beams and 2 footings. The retrofit design also includes restrainers at the West and East River Piers and concrete-filled steel pipes at the west abutment to enhance the capacity of shear keys under seismic forces. The alternative was designed by the City of Los Angeles Bureau of Engineering (LABOE) in 1995 and approved by the County of Los Angeles and Caltrans in 1998. The City requested, and subsequently received, an authorization for construction from Caltrans in 2000 in the amount of $18.2 million. Because this alternative did not address the ASR, the City did not proceed with construction.

1.2 Retrofit Alternative 2: Infill Wall with Steel Casing Construction
This alternative is an enhancement to Retrofit Alternative 1 by adding steel casings to columns in the bents with infill shear walls, in addition to other columns at some of the bents with no infill walls. The steel casings would enhance confinement, ductility, and shear strength of the existing columns. The steel casings would also improve shear force transfer capacity between the infill walls and the deteriorated columns. The major component of Retrofit Alternative 2 proposes construction of infill shear walls at 14 bents in addition to the use of steel plates to provide encasement to 29 columns. Since ductility and displacement capacity of the retrofitted columns would be enhanced, it would be necessary to increase flexural strength of some of the bent caps to assure that plastic hinges would not form in the bent caps after retrofitting of the columns, but that plastic hinges would rather form in the columns. This is because of limited ductility capacity of the bent caps due to the lack of continuous bottom reinforcement and inadequate top reinforcement in the cap beams at locations of the columns.

The infill shear walls would reduce seismic transverse displacements in the existing structure. Under this alternative, two expansion joints in the superstructure would be closed, and new grade beams would be constructed to reduce seismic longitudinal displacements. The as-built analyses showed that stability problems may be encountered in the existing structure because of the small-size footings. Thus, new footings are also proposed to reduce displacements and enhance stability of the structure since the existing footings were, according to literature, sized to resist gravity plus 0.10g lateral loads. Also, retrofitting of the existing footings would be necessary because of degradation due to ASR.
Despite the confinement proposed under this alternative, ASR would continue. In addition, the seismic risk would still remain and would require a significant subsequent retrofit in approximately 10 years to maintain the seismic and operational safety of the structure.

1.3 Retrofit Alternative 3: Catcher Wall Construction
The objective of this retrofit design would increase seismic safety by preventing the collapse of the viaduct during an earthquake. The design would consist of constructing catcher walls at locations of all bents, except Bent 12. This bent would be excluded because of the restricted room available for construction imposed by the proximity of active railroad tracks. These catcher walls would provide a secondary support system to the viaduct to supplement the existing columns and foundations in the event of column collapse.

This alternative would increase seismic safety by preventing structural collapse, but it would not improve seismic performance of the existing structure, resulting in a high likelihood of destructive damage with few, if any, repair options available following a large seismic event. Life expectancy of the structure under this alternative would be approximately 10 years.

1.4 Retrofit Alternative 4: Concrete Casing Construction
This alternative would utilize concrete column casings to increase the ductility and stiffness of the existing structure. Retrofit Alternative 4 is similar to Retrofit Alternative 2 in that the existing columns would be encased to provide additional confinement to resist lateral dilation of the core. Retrofit Alternative 4 proposes retrofitting all columns and bent caps and construction of new foundations at bents with “Moderate-Severe” to “Severe” concrete column degradation based on results of the material sampling and testing study. No infill shear walls are proposed with this alternative since the concrete column casings and the bent cap retrofit would increase the stiffness of the structure and consequently reduce seismic displacements. The new foundations would also be designed to reduce seismic displacements. Bent 12 would be excluded from retrofitting because of the restricted room available for retrofit construction to take place at this location.

Retrofit Alternative 4 has similar shortcomings to Retrofit Alternative 2. Design of the concrete encasement would not provide sufficient strength to withstand the high internal pressure from continuing ASR activity. Construction of the concrete encasement would take place with rigorous water and moisture control of the existing concrete to prevent trapped moisture inside the encased sections of columns. Life expectancy of the structure under this alternative would be approximately 20 years before the next major retrofit would be required.
1.5 Retrofit Alternative 5: Shear Wall, Steel Casing, and ASR Protection Construction

Retrofit Alternative 5 is similar to Alternative 2 in that columns would be retrofitted by steel casings, and infill walls would be constructed at more column and bents. Compared to Retrofit Alternative 2, Retrofit Alternative 5 proposed to encase all columns that were identified with “Moderate-Severe” to “Severe” damage ratings (refer to Figure 1-6 in Chapter 1) to reduce the possibility of further deterioration. Additionally, the steel casings would be designed to withstand the high level of internal pressure due to ASR-induced lateral dilation of the encased column. Bent 12 would be excluded from retrofitting because of the limited room available for construction of the column encasement due to the proximity of railroad tracks. Under this retrofit alternative, 76 columns would be encased, of which 26 would have 7/8-inch plates and 50 would have 5/8-inch steel plates. The exposed plates, channels, and bars would be concealed by a 6-inch layer of architectural mortar. All exterior columns with “Light” or “Moderate” damage ratings (refer to Figure 1-6 in Chapter 1) would also be encased to account for future concrete degradation due to ASR. Encasing all exterior columns would also maintain visual balance and consistency for the retrofitted structure. In addition to the above-mentioned columns, the interior columns in Bents 1, 4, and 5 would be encased to enhance their shear strengths.

Note that the steel casing and carbon and fiberglass rehabilitation schemes do not provide a solution to treat the concrete expansion problems within other concrete structural elements, including the railings, deck, girders, and foundations. It is expected that future retrofitting to maintain seismic and operational safety of the structure may not be required for at least 30 years after the retrofitting is completed.

1.6 Replacement with Historic Replica (Modified Retrofit)

This retrofit scheme was developed and evaluated in response to suggestions from the public to consider partial retrofit and partial replacement. It is essentially a replacement of the existing viaduct structure with a new structure that maintains the historic appearance of the existing 6th Street Viaduct with a reuse of some existing viaduct components for preservation purposes.

Under this scheme, the new structure would be constructed on the same footprint of the existing viaduct and retain the same vertical profile while making adjustment for current code requirements. All of the viaduct features would be replicated to the maximum extent feasible consistent with arriving at a roadway design that meets current AASHTO standards.

---

8 The damage rating was based upon visual observation of the degree of concrete cracking and deterioration during the materials testing program (see Figure 1-6 in Chapter 1).
Based on the preliminary design concept, the new replacement structure would have 7 spans on the west approach between the west abutment and the west river pier. The east approach would consist of 14 spans between the east river pier and Bent 37. Span length would vary between 80 ft and 156 ft, with an average span length of 130 ft to 140 ft. The superstructure would be constructed with cast-in-place (CIP) concrete multi-cell box girder. The box girder would have a parabolic soffit with a variable girder depth between 4.5 ft and 6.5 ft in a typical span. Depth of the box girder may reach up to 8 ft at some of the bents. The parabolic soffit of the superstructure would simulate the visual appearance of the existing structure. The bent cap overhang would be constructed with similar details to those of the existing structure. Concrete barrier rails Type T-80 would be used to replace the existing railing and sidewalk. In addition, the new deck would have a 65.5-ft curb-to-curb width in addition to 5-ft-wide sidewalks; thus, the total width of the new structure would be 75.5 ft, and the total width of the deck slab would be 77.5 ft. However, the current design standard for 10-ft-wide sidewalks would need to be approved for an exception.

The steel arches over the Los Angeles River would be preserved in the new replacement structure. The superstructure over the Los Angeles River would consist of a CIP box girder, as described above; however, the steel arches would be moved and reset on the exterior sides of the new superstructure to maintain the visual appearance of the existing viaduct. The steel arches would not participate in load-carrying capacity of the new viaduct portion over the Los Angeles River. With this scheme, the steel arches would carry only their self weight, as well as self weights of the vertical hangers and bracing members.

The new structure would be constructed with circular columns with diameters ranging from 6 ft to 7 ft. The circular columns would be covered by 6-inch-thick architectural precast concrete casings that have a similar exterior shape as that of the existing columns. The objective of the architectural concrete casing would be to maintain the visual appearance of the existing columns, and it would not carry any load of the columns. The columns and the architectural casings would be supported on pile foundations.

This replacement alternative would eliminate the ASR problem. The life expectancy of the new structure would be an estimated 75 years. This scheme would provide a wider roadway width that meets the goal of removing the structure from the FHWA Eligible Bridge List (EBL). Although the existing viaduct elements would be replicated to the extent practicable, the new structure would not have exactly the same visual appearance or historical aesthetics of the existing bridge.
1.7 **Substructure Replacement**

This retrofit scheme would be designed to meet current seismic demands by replacing all ASR-affected concrete in the substructure elements with new concrete. By replacing the substructure elements rather than using traditional strengthening retrofit solutions, the viaduct’s aesthetics and historic nature could be preserved by utilizing architectural features similar to the existing members. Columns would be designed according to current seismic design criteria, including displacement and ductility capacity requirements.

This retrofit scheme would replace all substructure elements, including piles, footings, grade beams, columns, and bent caps, to provide additional strength required to accommodate the anticipated seismic demands (see Figure 1). The design would include substructure replacement for the length of the entire structure, including the west approach spans, main spans, and east approach spans. In addition, this retrofit scheme would replace the existing substandard concrete barrier with a crash-tested Type 80 modified barrier consistent with current Caltrans specifications. The new barrier would mimic the aesthetics of the existing barrier. As part of the barrier replacement, all existing cobra-head luminaires and arms would be replaced with new fabricated ornamental lanterns and pendants replicating the original 1930s design.

---

**Figure 1 Substructure Replacement Concept**

---

The existing concrete approach spans are supported primarily on multi-column bents with spread footing foundations. Existing spread footings lack top mat reinforcement, which is required to resist seismic damage. This retrofit scheme would replace all foundations with combined pile-supported footings featuring increased footing thickness and current seismic detailing to provide the necessary strength to resist anticipated seismic demands. The increased strength in the foundations would provide a fixed connection to the columns, which would reduce the seismic displacement demands.

Columns would be designed to provide sufficient displacement capacity to ensure that a ductile plastic hinge forms in the column elements. Aesthetically, the retrofit design would match the geometric features of the existing concrete columns.

The piers supporting the main span have also been determined to be seismically deficient. As part of this alternative, the River Bank Piers and the Center River Pier would be replaced. The new main-span supports would attempt to aesthetically match the existing supports. Due to the size of the main-span supports, the piers would be comprised of hollow reinforced concrete elements.

As previously discussed, bent caps would be designed to provide sufficient capacity to ensure that plastic hinging is limited to the column members. A review of as-built drawings indicated that the existing bent caps lack sufficient strength to form plastic hinges in the column members; therefore, all bent caps would be removed and replaced. Existing superstructure reinforcement that is continuous through the bent cap would need to be maintained and integrated with the new bent cap reinforcement to provide the required continuity of the superstructure.

This retrofit scheme would specifically address the ASR in the substructure by removing ASR-compromised material and replacing it with new materials, but it would not address the ASR in the superstructure; therefore, the design life of the substructure would be 75 years, while the superstructure would continue to be vulnerable to earthquakes. Closure of the viaduct after a design earthquake event would likely be required due to superstructure damage.

Construction of this retrofit scheme would be difficult due to the following constraints:

- Limited access to the site from the sides and limited vertical clearances for placement of shoring
- Proximity of bridge to existing operational railroad
- Proximity of bridge to existing building foundations

---

10 Ibid.
11 Ibid.
- Size and weight of superstructure elements to be supported during removal and replacement of substructure
- Difficult concrete removal work at the bent caps
- Questionable force transfer between the new bent caps and existing superstructure may require large-scale proof testing
- Substandard horizontal clearances between columns and railroad facilities would cause difficulty in obtaining approval from railroad companies

1.8 Lithium Treatment
In March 2007, FHWA published the report *The Use of Lithium to Prevent or Mitigate Alkali-Silica Reaction in Concrete Pavements and Structures*. Lithium treatment for the 6th Street Viaduct was thoroughly evaluated and rejected for the following reasons:

1. The FHWA report states “Lithium treatment will not repair any damage that has already occurred.” Significant ASR damage has already occurred within the 6th Street Viaduct concrete elements; thus, lithium treatment would not be effective.
2. Data from the FHWA report indicate that application of lithium to existing structures can only penetrate approximately an inch below the surface of the concrete member. The structural elements of the 6th Street Viaduct are many feet thick. The most severe ASR damage is within the core of the thick concrete members.
3. In regards to usage of lithium to treat existing ASR-affected structures, the report states “Typically, such studies have used laboratory-sized specimens with relatively small cross-sections and it has not yet been demonstrated that lithium treatment is effective with larger specimens that are more representative of elements of concrete structures.” In addition, if the large members of the viaduct could be treated, the treatment still would not correct the damages that have occurred.

1.9 Carbon Fiber Wrap Technology
Similar to steel casings, carbon and fiberglass-reinforced polymer rehabilitation schemes do not reverse or stop the ASR deterioration throughout the structural elements. The *Final Seismic Retrofit Strategy Report* did not evaluate this option in depth because of its cost being much higher relative to steel casing and its unknown long-term durability beyond approximately 20 years.

1.10 Replace ASR-Damaged Concrete within the Existing Viaduct Structure
This scheme was evaluated in response to suggestions from the public to consider preserving the general appearance of the existing viaduct by replacing the concrete elements that have deteriorated due to the ASR effect. Results of the evaluation indicated that there is no practical
method to differentiate and isolate the ASR-compromised concrete from sound material. Many of the cores, which were extracted as part of the previously discussed materials testing program, exhibited a healthy surface appearance but highly distressed interiors (see Figure 1-5); therefore, it was determined that there was no practical way to replace bad concrete with new material without replacing all of the concrete. Implementation of this scheme would essentially require replacement of the entire viaduct. Another sub-option was to replace the foundations, columns, bent caps, and guardrails, along with strengthening the existing arch ribs. The superstructure between bent caps would not be replaced. After approximately 30 years, the superstructure would have to be replaced.

Out of the 10 schemes, 8 were not carried forward for further evaluation based on the reasons summarized in Table 1.

2. Retrofit Alternative Screening

Two retrofit alternatives out of the above 10 alternatives considered including Infill Wall and Heavy Steel Casing and Substructure Replacement, were evaluated as part of the alternative screening exercise during the project development phase. As part of the screening exercise, a set of criteria was developed, as presented in Table 2. The screening results for the retrofit alternatives evaluated are summarized in Table 3.

Although the substructure replacement scheme received a slightly higher score, the Project Development Team (PDT) members chose the Infill Wall and Heavy Steel Casing scheme as the retrofit scheme to be evaluated in the environmental document because it would involve much less cost for similar results for the same design life.
Table 1
Retrofit Alternatives Considered but Eliminated

<table>
<thead>
<tr>
<th>Retrofit Alternative</th>
<th>Seismic Deficiencies</th>
<th>Material Deficiencies</th>
<th>Operational Deficiencies</th>
<th>Historic Preservation</th>
<th>Traffic Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infill wall construction</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Infill walls with steel casing construction</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Catcher wall construction</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Concrete casing construction</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Replacement with historic replica</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes, but non-load carrying</td>
</tr>
<tr>
<td>Lithium treatment</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Composite materials (carbon/fiberglass)</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Replace concrete damaged by ASR and add reinforcing steel</td>
<td>Yes</td>
<td>Yes</td>
<td>unknown</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Table 2
Criteria Used for Retrofit and Alignment Alternatives Screening Exercise

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Explanation</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meet Purpose and Need</td>
<td><strong>Purpose:</strong> Reduce vulnerability of the viaduct during a major earthquake.</td>
<td>0 to 5, with “0” assigned to the alternative that does not meet the purpose and need and “5” assigned to the alternative that fully meets the purpose and need.</td>
</tr>
<tr>
<td></td>
<td>Preserve 6th Street as a viable east-to-west link.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eliminate design deficiencies of the viaduct.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Need:</strong> ASR has deteriorated the structural integrity of the concrete, making the 6th Street Viaduct vulnerable to earthquake events.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bridge railings are damaged and cracked and do not meet crash standards.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roadway width is substandard.</td>
<td></td>
</tr>
<tr>
<td>Constructability</td>
<td>Consideration was given to: Ease of construction.</td>
<td>5 to 1, with “5” assigned to the alternative that would require standard construction and “1” to the alternative that would be very difficult to construct.</td>
</tr>
<tr>
<td></td>
<td>Minimum impacts to railroads.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No impacts to transmission towers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Need for specialized construction techniques.</td>
<td></td>
</tr>
<tr>
<td>Life Span of Facility</td>
<td>A new structure would have a design life span of 75 years, while the retrofitted structure would have a design life span of 30 years.</td>
<td>5 to 1, with “5” assigned to the alternative that has up to a 75-year life expectancy and “1” to the alternative that has a low life expectancy.</td>
</tr>
<tr>
<td>Construction Cost</td>
<td>Consideration is given to the following costs: Right-of-way acquisition.</td>
<td>5 to 1, with “5” assigned to the alternative with a low construction cost and “1” to the alternative with a high construction cost.</td>
</tr>
<tr>
<td></td>
<td>Railroad impacts.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Business relocation.</td>
<td></td>
</tr>
<tr>
<td>Maintenance Cost</td>
<td>New structure usually requires less maintenance compared to the retrofitted structure.</td>
<td>All replacement alternatives received a score of 5, while retrofit alternative received a lower score.</td>
</tr>
<tr>
<td>Community Disruption</td>
<td>Degree of businesses being disrupted due to access or displacement and the number of businesses impacted.</td>
<td>5 to 1, with “5” assigned to the alternative with a high number of potentially affected properties and “1” to the alternative with a low number of potentially affected properties.</td>
</tr>
<tr>
<td>Structural Safety</td>
<td>New structure is less vulnerable to collapse and would incorporate required safety features.</td>
<td>5 to 1, with “5” assigned to the alternative with all required safety features incorporated and “1” to the alternative that does not contain the required safety features.</td>
</tr>
<tr>
<td>Operational Safety</td>
<td>Evaluation is based on consideration of the opportunity that the proposed project would: Eliminate sight distance restrictions.</td>
<td>5 to 1, with “5” assigned to the alternative that meets all required operational safety components and “1” to the alternative that does not meet the requirements.</td>
</tr>
<tr>
<td></td>
<td>Correct substandard lane widths and sidewalks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide median buffer for opposing lane.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replace substandard railing.</td>
<td></td>
</tr>
<tr>
<td>Historic Preservation</td>
<td>Evaluation is based on consideration of the opportunity and/or ability to preserve historical resources of the community.</td>
<td>5 to 1, with “5” assigned to the alternative that would preserve the historic features and appearance of the bridge and “1” to the alternative that does otherwise.</td>
</tr>
<tr>
<td>Other Improvement Opportunities/ Benefits</td>
<td>Evaluation is based on consideration of the opportunities to improve the surrounding area of the viaduct to benefit the community. Key issues and opportunities to be considered include, but are not limited to, design, destination, recreation, safety, and traffic.</td>
<td>5 to 1, with “5” assigned to the alternative that would provide open space for area improvement opportunities echoed by the public and “1” to the alternative that does not provide such opportunities.</td>
</tr>
</tbody>
</table>
### Table 3
Retrofit Alternative Screening Results

<table>
<thead>
<tr>
<th>Retrofit Alternative</th>
<th>Evaluation Criteria</th>
<th>Total Score</th>
<th>Carried Forward for Detailed Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infill Wall and Heavy Steel Casing</td>
<td></td>
<td>23</td>
<td>Yes</td>
</tr>
<tr>
<td>Substructure Replacement</td>
<td></td>
<td>25</td>
<td>No</td>
</tr>
</tbody>
</table>

**3. Replacement Alternatives Evaluation**

**3.1 Alignment Screening**

A screening process was conducted to evaluate and select viable alignments for further design consideration. Based on preliminary engineering investigation and public input, the PDT initially identified more than 20 alignment scenarios for consideration. These alignment scenarios were then refined and integrated into 10 alignment alternatives (Figure 2). A workshop was conducted to screen down the proposed alignment alternatives. This workshop resulted in the alternatives being reduced to three alignments for the purpose of evaluation in the environmental document. Representatives from LABOE, Caltrans, and a team of engineering and planning consultants participated in the screening workshop. The evaluation criteria used in the screening exercise are summarized in Table 2. Each criterion was given an equal weight.

Table 4 summarizes the results of the alignment alternatives evaluation based on the criteria presented earlier in Table 2.

---

10 Alternatives considered during the workshop included the “No Action” and two “Retrofit Options.” The retrofit options were presented in Section 2.4.1 of this Draft EIR/EIS.
Alignment 1
Remove existing viaduct and construct a new viaduct that replicates existing viaduct on existing alignment. The new viaduct width and profile would be the same as the existing structure. No median or shoulders would be provided.

Alignment 2
Remove existing viaduct and construct a new viaduct on a new horizontal alignment. The new viaduct would be designed to have wider traffic lanes, median, shoulders, and sidewalks. To accommodate the widened viaduct, the north side of the viaduct footprint would extend to the north, while the south side of the footprint would remain at the same location except for the segment of the alignment that spans over the Los Angeles River, which would be shifted slightly south to improve the existing horizontal curve radius (2500 ft) and provide better design speeds and stopping sight distance.

Alignment 3
Remove existing viaduct and construct a new viaduct. It would have a wider cross section as in Alternative 2. The new structure would be built on a horizontal straight line alignment for the segment from Mateo Street to the west bank of the Los Angeles River, allowing more bridge type options. The alignment under this option would swing to the north approximately 150 ft from the existing alignment, eliminating the existing radius at the east end and providing the best design speeds compared to the other alignment options under consideration.

Alignment 4
Remove existing viaduct and construct a new viaduct. It would have a wider cross section as in Alternative 2. The alignment under this option is similar to that described under Alternative 4, except that the radius (6,000 ft) east of the river is much larger, resulting in less extension of the viaduct footprint to the north. The alignment under this option would swing to the north approximately 85 ft from the existing alignment, eliminating the existing radius at the east end.

Figure 2 Replacement Alignment Alternatives – Sheet 1
<table>
<thead>
<tr>
<th>Alignment Corridor Description</th>
<th>Plan View</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alignment 6</strong></td>
<td>![Alignment 6 Plan View]</td>
</tr>
<tr>
<td>Remove existing viaduct and construct a new viaduct on a new horizontal alignment. It would have a wider cross section as in Alternative 2. The north side of the viaduct footprint would extend to the north, while the south side of the viaduct footprint would remain at the same location.</td>
<td></td>
</tr>
<tr>
<td><strong>Alignment 7</strong></td>
<td>![Alignment 7 Plan View]</td>
</tr>
<tr>
<td>Remove existing viaduct and construct a new viaduct on a new horizontal alignment. It would have a wider cross section as in Alternative 2. To accommodate the widened viaduct, the footprint of the viaduct would be widened on both the north and south sides.</td>
<td></td>
</tr>
<tr>
<td><strong>Alignment 8</strong></td>
<td>![Alignment 8 Plan View]</td>
</tr>
<tr>
<td>Construct a new viaduct parallel to the existing viaduct on the north side adjacent to the existing viaduct. It would have a wider cross section as in Alternative 2. Reinforce the existing viaduct for public safety.</td>
<td></td>
</tr>
<tr>
<td><strong>Alignment 9</strong></td>
<td>![Alignment 9 Plan View]</td>
</tr>
<tr>
<td>Construct a new viaduct parallel to the existing viaduct on the south side of the existing viaduct. It would have a wider cross section as in Alternative 2. Reinforce the existing viaduct for public safety.</td>
<td></td>
</tr>
<tr>
<td><strong>Alignment 10</strong></td>
<td>![Alignment 10 Plan View]</td>
</tr>
<tr>
<td>Remove existing viaduct and construct a new viaduct on a new horizontal alignment. It would have a wider cross section as in Alternative 2. To accommodate the widened viaduct, the footprint of the viaduct would be wider on the north and south sides, except for the area between Montes Street and Maquay Street, which would only be wider to the north. The segment that extends from the river to the east would be constructed as a counterfort structure to minimize right-of-way impacts.</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2 Replacement Alignment Alternatives – Sheet 2**
Table 4
Alignments Screening Results

<table>
<thead>
<tr>
<th>Alignment</th>
<th>Meets Purpose and Need</th>
<th>Constructability</th>
<th>Life Span of Facilties</th>
<th>Construction Cost</th>
<th>Maintenance Cost</th>
<th>Community Disruption</th>
<th>Structural Safety</th>
<th>Operational Safety</th>
<th>Historic Preservation</th>
<th>Other Improvement Opportunities</th>
<th>Total Score</th>
<th>Carried Forward for Detailed Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>33</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>40</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>39</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>41</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>41</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>34</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>38</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>38</td>
<td>No</td>
</tr>
<tr>
<td>9</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>38</td>
<td>No</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>40</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Based on the results of the screening analysis, alignments 2 (total score of 40), 5 (total score of 41), and 10 (total score of 40) were chosen to carry forward for analysis in the environmental document. Alignments 3, 4, and 5 were very similar, with the variation of the viaduct radius east of the river. Alignment 3 would swing the least to the north, followed by Alignments 5 and 4, respectively. Alignment 3 would be more difficult to construct than Alignments 5 and 4. In addition, Alignments 5 and 4 would provide room for other potential uses. Because Alignment 5 would result in less ROW impacts than Alignment 4, it was selected for further consideration.

### 3.2 Bridge Concept Alternative Screening

Screening of potential replacement bridge concepts was conducted for various beam, arch, and cable-supported bridge systems using steel and concrete materials. The purpose of this screening was to identify which bridge concepts would be developed further during the advanced planning phase of project development leading to bridge concept selection, thus narrowing the number of potential bridge concepts for staff’s recommendations during the bridge concept selection phase.

The structure type screening process consisted of the following steps:

1. Develop bridge concept alternatives
2. Develop evaluation criteria
3. Obtain public input on the proposed alternatives
4. Evaluate and rank the alternatives
5. Recommend alternatives to be developed during the advanced planning phase, with five concepts moving forward for future development.

3.2.1 Bridge Concept Alternative Development

Bridge engineers and architects first developed 15 different concept plans (16, including the existing structure concept), as listed in Table 5. The concept plans depicted the alternatives with sufficient detail for the screening process. Further refinement of the selected alternatives is anticipated during the advance planning phase.

The east and west approaches to the main span were considered but were not developed to the same level of detail as the main spans. It is assumed at this stage that the approaches would be beam-type structures (concrete box girders) compatible with the architectural vocabulary of the main span.

3.2.2 Evaluation Criteria

Evaluation criteria were developed to identify the relative strengths and weaknesses of each bridge concept and help determine those most suitable for the site. Each bridge concept was assigned a value from 1 to 10 based on application of the evaluation criteria. A value of 10 was considered excellent, 7 good, 4 fair, and 1 poor. The total score for each bridge concept was then obtained by summing the individual attribute values for that concept. Construction cost was not considered as a selection factor. The evaluation criteria are described in Table 6.

<table>
<thead>
<tr>
<th>Alt. No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1R</td>
<td>Replication of Main Span</td>
</tr>
<tr>
<td>2R</td>
<td>Haunched CIP prestressed concrete box girder (segmental or built on falsework)</td>
</tr>
<tr>
<td>3R</td>
<td>Haunched steel box girder</td>
</tr>
<tr>
<td>4R</td>
<td>Concrete slant leg frame</td>
</tr>
<tr>
<td>5R</td>
<td>Concrete deck arch</td>
</tr>
<tr>
<td>6R</td>
<td>Steel tied arch with top lateral bracing (3 spans of arches)</td>
</tr>
<tr>
<td>7R</td>
<td>Steel tied arch without top lateral bracing (1 span of arches)</td>
</tr>
<tr>
<td>8R</td>
<td>CIP box girder with steel tied arch pedestrian ways</td>
</tr>
<tr>
<td>9R</td>
<td>Steel half-through arch CIP girder approaches</td>
</tr>
<tr>
<td>10R</td>
<td>Concrete half-through arch with “Y” piers</td>
</tr>
<tr>
<td>11R</td>
<td>Extradosed concrete box girder with dual pylons</td>
</tr>
<tr>
<td>12R</td>
<td>Extradosed concrete box girder with single pylons</td>
</tr>
<tr>
<td>13R</td>
<td>Cable stay with single pylon</td>
</tr>
<tr>
<td>14R</td>
<td>Cable stay with 4-legged pylon</td>
</tr>
<tr>
<td>15R</td>
<td>Self anchored suspension</td>
</tr>
</tbody>
</table>

Table 5
Bridge Concept Alternatives for the Main Span

Source: 6th Street Viaduct Improvement Project Bridge Type Selection Structure Type Screening Phase, David Evans and Associates, October 2007.
### Table 6
Criteria Used for Bridge Concept Evaluation

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seismic Performance</strong></td>
<td>What is the seismic performance in terms of repairable damage after a maximum design seismic event, considering the structural system and materials? Will it be difficult to perform construction work after a seismic event, considering availability of materials and different structural elements? Considering the load redundancy of the structural system, are there multiple load paths? Are long frames resulting in minimal expansion joints and hinges possible? Are structural elements capable of sustaining large displacement/deformations while still maintaining load? Are structural elements ductile and/or compact?</td>
</tr>
<tr>
<td><strong>Geometric Flexibility</strong></td>
<td>During the design period, will changes in roadway vertical and horizontal alignments be possible without requiring a major modification to the bridge concept? Can the bridge concept accommodate curved horizontal alignments without adding significant costs? Can the bridge support system accommodate high skews along the railroad corridors and local streets below the structure without adding significant cost? Can the bridge supports be located to avoid conflicts with the existing access tunnel, sanitary sewer siphon, and towers for the overhead power lines?</td>
</tr>
<tr>
<td><strong>Roadway and Pedestrian Safety</strong></td>
<td>Will crash barriers be required along the sidewalks to protect structural elements such as arch ribs and cable systems? Will crash barriers be required along the median to protect structural elements such as arch ribs and cable systems? Is sight distance reduced by structural elements projecting above the roadway surface along the curved alignment?</td>
</tr>
<tr>
<td><strong>Accessibility to Ground Level from Bridge Deck</strong></td>
<td>Are piers located so access can be provided from the deck to the ground level along the river bank? Can access be provided along the span to the ground level along the river bank? How will the future access look from an aesthetics view point, blending with the existing structure?</td>
</tr>
<tr>
<td><strong>Aesthetics</strong></td>
<td>Should the bridge be a more dominant (large landmark) or more visually recessive (quiet) type structure? Does the bridge demonstrate the setting of a world-class city? Does the bridge fit into the natural and built setting? Should its architectural style include standard and accepted elements of bridge design, reflect the historic elements of the existing bridge, or should it push the current style envelope in an expression of technological, structural, and aesthetic daring? How important is the view of the bridge from below or from the deck? Should the bridge provide motorists a definite experience of a crossing? Is it appropriate for the bridge to evoke emotions of awe and wonder or community pride and signature?</td>
</tr>
<tr>
<td><strong>Historical Compatibility</strong></td>
<td>Do structural elements retain the architectural vocabulary of the historical bridge? Are similar materials being used that reflect the existing bridge’s character, using state-of-the-art technology and construction methods? Does the bridge architecture invoke a renaissance of the downtown area?</td>
</tr>
<tr>
<td><strong>Design Schedule</strong></td>
<td>Will the structural system require component testing, wind studies, and indicator pile programs that will prolong the design period? Will the design period extend beyond 18 months? Will nonlinear analysis be necessary to model geometric nonlinearity and material nonlinearity?</td>
</tr>
<tr>
<td><strong>Hydraulic Impacts</strong></td>
<td>Will the pier layout and shape adversely affect the hydraulic grade within the Los Angeles River?</td>
</tr>
<tr>
<td><strong>Environmental Impacts</strong></td>
<td>Can foundation systems be constructed that minimize the need for excavation? Can foundation systems be installed that minimize noise during construction? Will the bridge design or construction cause disruption to adjacent property owners? Will the bridge scheme require additional right-of-way purchases?</td>
</tr>
<tr>
<td><strong>Utility Impacts</strong></td>
<td>Will the bridge concept require relocation of major utilities such as power transmission lines, fiber-optic lines, water line, sanitary sewer lines, and other wet and dry utilities? Can proposed or future utilities be supported within or on the superstructure?</td>
</tr>
<tr>
<td><strong>Railroad Impacts</strong></td>
<td>Will the bridge concept require foundation and bent column construction within the railroad right-of-way? Will the bridge concept minimize the time period of construction over the railroad right-of-way? Can the bridge concept provide adequate vertical clearance during construction over the railroad right-of-way? Can the bridge concept and material avoid or minimize maintenance requirements over the railroad right-of-way?</td>
</tr>
<tr>
<td><strong>Construction Cost</strong></td>
<td>Is the initial construction cost high relative to other bridge concepts? Will the structural components be manufactured locally? Does the price of material supplies fluctuate on a monthly basis? Note that the construction cost was evaluated, but it was not added to the total score for screening purpose.</td>
</tr>
<tr>
<td><strong>Construction Schedule</strong></td>
<td>Can the bridge be constructed within a 36-month period? Can the material supply be delayed by consequential causes such as labor strikes?</td>
</tr>
</tbody>
</table>
### Table 6
Criteria Used for Bridge Concept Evaluation

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Risk</td>
<td>Has this concept of bridge been built before, and what were past experiences regarding claims? Are construction claims normally high for this concept of construction? Do contractors have the demonstrated skill and experience to build this concept of bridge? Is the structural system “seismically tough” during construction phases? Are construction materials readily available? Do construction material costs fluctuate over the short term?</td>
</tr>
<tr>
<td>Constructability</td>
<td>Is the construction scheme clear and uncomplicated? Are the details difficult to construct? Are extensive temporary supports and works or specialized equipment required for construction?</td>
</tr>
<tr>
<td>Maintenance/Serviceability</td>
<td>Are components accessible for inspection? Will special equipment, such as a snooper, be required to inspect components? Can components be removed and replaced without requiring temporary support of adjacent components or the bridge? Is routine maintenance difficult or costly? Are components durable?</td>
</tr>
</tbody>
</table>

#### 3.2.3 Public Input

On August 28, 2007, the PDT presented the preliminary sketches of 15 bridge concepts to the Community Advisory Committee (CAC), which was formed to enhance public involvement in the project development and environmental review process. During a workshop meeting, the CAC expressed their preferences for bridge concepts. Results of the votes received from the CAC members are presented in Figure 3, with the existing bridge concept or abutment to abutment replication (Through Arches Category) receiving the highest number of votes at 16 and the extradosed concrete box girder (Cable Type Category) receiving 8 votes. The bridge concepts that received the third highest votes at 6 are steel half-through arch CIP girder approaches (Through Arches Category) and concrete slant leg frame concept (Deck Arches Category).

#### 3.2.4 Bridge Concept Evaluation

A technical screening meeting was held on September 14, 2007, and involved a panel of nine bridge experts tasked to evaluate and rank the bridge concepts and to recommend five alternatives to be further developed during the advance planning phase. In addition eight discipline leads from the team of consultants, City staff, and Caltrans staff were in observance of the screening workshop. The expert panel reviewed the 15 bridge concepts and screened them down to eight, taking into consideration the preferences expressed by the CAC at their previous workshop. The eight concepts were further evaluated using the criteria listed in Table 6. The results of the final screening are shown in Table 7. Based on the screening results, five bridge concepts were carried forward for detailed study.

---

13 Bridge Type Selection Structure Type Screening Phase. October 2007.
**Figure 3** Results of Public Input on Preliminary Sketches of Bridge Concept Alternatives

<table>
<thead>
<tr>
<th>BEAM TYPE BRIDGES</th>
<th>ARCH TYPE BRIDGES</th>
<th>CABLE TYPE BRIDGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECK ARCHES</td>
<td>TIED ARCHES</td>
<td>THROUGH ARCHES</td>
</tr>
<tr>
<td>1B - 1 Vote</td>
<td>4A - 0 Votes</td>
<td>11A (This is the existing bridge) - 16 Votes</td>
</tr>
<tr>
<td>6B - 1 Vote</td>
<td>7A - 0 Votes</td>
<td>14A - 6 Votes</td>
</tr>
<tr>
<td>14R</td>
<td>10A - 5 Votes</td>
<td>10A - 5 Votes</td>
</tr>
</tbody>
</table>

Corresponding bridge names shown on Table 2-7.
Figure 4
Preliminary Sketches of Bridge Concepts Short-listed by Expert Panel for Evaluation
# Table 7
## Bridge Concept Screening Results

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1R – Replication</td>
<td>10</td>
</tr>
<tr>
<td>2R – CIP prestressed concrete box girder</td>
<td>10</td>
</tr>
<tr>
<td>4R – Concrete slant leg frame</td>
<td>10</td>
</tr>
<tr>
<td>5R – Concrete deck arch</td>
<td>10</td>
</tr>
<tr>
<td>8R – CIP box girder with steel tied arch pedestrian ways</td>
<td>10</td>
</tr>
<tr>
<td>9R – Steel half-through arch CIP box girder approaches</td>
<td>10</td>
</tr>
<tr>
<td>11R – Extradosed concrete box girder with dual pylons</td>
<td>10</td>
</tr>
<tr>
<td>12 R – Extradosed concrete box girder with single pylons</td>
<td>10</td>
</tr>
</tbody>
</table>
Figure 5
Preliminary Sketches of bridge Concepts
Carried Forward for Detailed Study
3.3 Alternative Evaluation Workshop

Nineteen (19) members of the PDT, which includes representatives from the City of Los Angeles Bureau of Engineering’s Bridge Improvement Program and Environmental Management Group, LADOT, Caltrans’ Environmental Division, and a team of consultants from various disciplines, held a workshop on October 8, 2008. The purpose of the workshop was three-fold:

1. Determine the feasibility of retrofit concepts
2. Identify the highest ranked project alignment from three proposed alignments
3. Identify the highest ranked bridge concept from five design concepts

The criteria used in ranking the alternatives, roadway alignments, and bridge concepts had been developed over the previous 2-year public involvement, preliminary engineering, and environmental review phase. The project team once again reviewed results of extensive previous research to revalidate each of the evaluation criteria, including the value engineering and ASR workshop exercises conducted as part of the project development, and then scored and ranked the alignment alternatives and bridge design concepts.

3.3.1 Retrofit

At the workshop, staff reviewed the previous screening results comparing the retrofit and replacement alternatives (see Table 8) and confirmed that the three replacement alternatives carried forward have marked advantages over the retrofit schemes considered.

Although the Retrofit Alternative would have lower construction costs and is higher rated from a historic preservation point of view, staff reached a consensus that the Retrofit Alternative is not the recommended alternative because of the following reasons:

- There are no known methods to stop, reverse, or mitigate the ASR deterioration.
- The Retrofit Alternative would have the highest life-cycle cost.
- The Retrofit Alternative would not correct the geometric deficiencies of the existing viaduct.
- Retrofit Alternative construction would require reduction of the railroad horizontal clearances, which does not meet requirements of the railroad agencies.
- Because of access restrictions, column encasement at Bent 12 is infeasible.
- Retrofitting would adversely affect this historic resource.
- The Retrofit Alternative would only meet a “no collapse” standard; significant damage could occur in a design seismic event.

Based on the above reasons, the staff recommended bridge replacement over the Retrofit Alternative.
### Table 8
Retrofit and Replacement Alignments Screening Results

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Retrofit Alternative</th>
<th>Replacement Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alignment</td>
<td>Alignment Alternative 2 (Alignment 3A)</td>
</tr>
<tr>
<td>Meet Purpose and Need</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Constructability</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Life Span of Facilities</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Construction Cost</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Maintenance Cost</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Community Disruption</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Structural Safety</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Operational Safety</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Historic Preservation</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other Improvement Opportunities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total Score</td>
<td>23</td>
<td>40</td>
</tr>
</tbody>
</table>

#### 3.3.2 Replacement Alignments

For the Replacement Alternative, the following criteria were used in ranking the three proposed alignments:

- Geometric design
- ROW impacts to parcels within the proposed new viaduct footprint
- ROW impacts to remaining parcels adjacent to the construction site
- Construction impacts
- Capacity to avoid LADWP transmission towers
- Impacts to utilities
- Adequate access to perform future maintenance
- Geometric capability to accommodate various bridge concepts under consideration
- Future compatibility with the Greening Concept
- Accommodating local plans
- Overall environmental impacts

Following deliberation, Alignment Alternative 2 (later renamed to Alignment B) had the highest score and ranking, followed by Alignment Alternatives 5 and 10 (later renamed to Alignments A and C (Table 8). Alignment B had the highest ranking because it met the geometric specifications required by LADOT; however, Alignment B would result in the greatest ROW
impacts. To minimize ROW impact, staff recommended that Alignment B be refined during the final design stage.

3.3.3 Replacement Bridge Concepts

Based on the results of the ranking evaluation for five bridge concepts shown on Figure 5, Bridge Concept 4 (Dual Tower Extradosed [cable supported] with CIP Box Girder Approaches) received the highest score; however, since the bridge concept does not affect the results of the environmental impact analysis, all five bridge concepts would be evaluated in the EIR/EIS as viable options for the Replacement Alternative.

In spring 2009, refinement of Bridge Concepts 1 and 4 were added as a result of public and agency input. Bridge Concepts 1A and 4A were developed for consideration during the public review period of the Draft EIR/EIS, and they were introduced at the CAC meeting in April 2009 and during the public hearings for the Draft EIR/EIS held in July 2009. Each of the six bridge concepts, including refined Concepts 1A and 4A, could be constructed on any of the viaduct replacement alignments (i.e., A, B, or C). The City will elaborate and refine the final design enhancements for the bridge replacement, as a means of ensuring that both an architecturally distinctive and cost-effective design is selected for construction.

4. Preferred Alternative Identification

The PDT held a workshop on September 29, 2009, after the close of the Draft EIR/EIS public comment period, to identify a preferred alternative based on the highest ranked replacement alignment and bridge concept. Three alignments and seven bridge design concepts were considered. Twenty (20) members of the PDT, including representatives from the City of Los Angeles Bureau of Engineering’s Bridge Improvement Program, Environmental Management Group, and Real Estate Division; LADOT; Caltrans’ Environmental Division and Caltrans Engineering Services Division; and a team of consultants from various disciplines, participated in the workshop. In addition, the City Engineer and representatives from City of Los Angeles and City Administrative Officer (CAO) observed the workshop. Greg Kolle from FHWA participated over the phone. The names, affiliations, and areas of expertise of the participants are presented in Table 9.

**Table 9**

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Area of Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steve Thoman, P.E., S.E.</td>
<td>Consultant</td>
<td>Bridge Engineer</td>
</tr>
<tr>
<td>John Koo, P.E., S.E.</td>
<td>City of Los Angeles BOE</td>
<td>Bridge/Structural Engineer</td>
</tr>
<tr>
<td>Yoga Chandran, Ph.D., P.E., G.E.</td>
<td>Consultant</td>
<td>Geotechnical Engineer</td>
</tr>
<tr>
<td>Donald McDonald, FAIA</td>
<td>Consultant</td>
<td>Bridge Architect</td>
</tr>
</tbody>
</table>
Table 9
Preferred Alternative Evaluation Workshop Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Area of Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suhash Patel, P.E.</td>
<td>Consultant</td>
<td>Civil/Structural Engineer</td>
</tr>
<tr>
<td>Kent Cordtz, P.E., S.E.</td>
<td>Consultant</td>
<td>Bridge Engineer</td>
</tr>
<tr>
<td>Jim Wu, P.E, S.E.</td>
<td>City of Los Angeles BOE</td>
<td>Bridge/Structural Engineer</td>
</tr>
<tr>
<td>Jeffery Bingham</td>
<td>Consultant</td>
<td>Environmental Planner</td>
</tr>
<tr>
<td>Linda Moore</td>
<td>City of Los Angeles BOE</td>
<td>Environmental Planner</td>
</tr>
<tr>
<td>David Lewis</td>
<td>Caltrans</td>
<td>Environmental Planner</td>
</tr>
<tr>
<td>Scott Straub, P.E.</td>
<td>Caltrans</td>
<td>Bridge/Structural Engineer</td>
</tr>
<tr>
<td>Bearj Sarkis, Ph.D., P.E, T.E. PTOE</td>
<td>City of Los Angeles DOT</td>
<td>Transportation Engineer</td>
</tr>
<tr>
<td>Nick Schilling, P.E.</td>
<td>Consultant</td>
<td>Roadway Engineer</td>
</tr>
<tr>
<td>Jim Wright</td>
<td>Caltrans</td>
<td>ROW Agent</td>
</tr>
<tr>
<td>Anne Kochaon, QEP</td>
<td>Consultant</td>
<td>Environmental Planner</td>
</tr>
<tr>
<td>Uri Jimenez</td>
<td>City of Los Angeles BOE, Real Estate Division</td>
<td>Property Manager</td>
</tr>
<tr>
<td>Wally Stokes</td>
<td>Consultant</td>
<td>Environmental Planner</td>
</tr>
<tr>
<td>Shafi Sharifan, Ph.D., P.E.</td>
<td>Consultant</td>
<td>Bridge Engineer</td>
</tr>
<tr>
<td>Carlos Montes</td>
<td>Caltrans</td>
<td>Environmental Planner</td>
</tr>
<tr>
<td>Phil Richardson, P.E.</td>
<td>City of Los Angeles BOE</td>
<td>Civil/Bridge Engineer</td>
</tr>
<tr>
<td>Walt Quesada, P.E.</td>
<td>Consultant</td>
<td>Roadway Engineer</td>
</tr>
<tr>
<td>Greg Kolle, P.E.</td>
<td>Federal Highway Administration</td>
<td>Bridge Engineer</td>
</tr>
</tbody>
</table>

The criteria used in ranking the alternative roadway alignments and bridge concepts during the Draft EIR/EIS preparation were updated to include additional criteria suggested by the PDT and based on public and agency comments received during circulation of the Draft EIR/EIS. Each bridge concept and alignment under consideration was assigned a value from 1 to 10 based on the application of the evaluation criteria. A total score for each alternative was obtained, based on equal weighting of each criterion. Criteria and scoring used in ranking the alternatives are as follows:

<table>
<thead>
<tr>
<th>Score</th>
<th>Rating</th>
<th>Expectation Level Compared to Baseline Criteria</th>
<th>Analogical Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Excellent</td>
<td>Exceeds expectations</td>
<td>Superior to established baseline Bridge Concept (2) or Alignment (3B)</td>
</tr>
<tr>
<td>8</td>
<td>Good</td>
<td>Above expectations</td>
<td>Better compared to established baseline Bridge Concept or Alignment</td>
</tr>
<tr>
<td>5</td>
<td>Acceptable</td>
<td>Meets expectations</td>
<td>Equal to established baseline Bridge Concept or Alignment</td>
</tr>
<tr>
<td>3</td>
<td>Fair</td>
<td>Below expectations</td>
<td>Worse than established baseline Bridge Concept or Alignment</td>
</tr>
<tr>
<td>1</td>
<td>Poor</td>
<td>Does not meet expectations</td>
<td>Inferior to established baseline Bridge Concept or Alignment</td>
</tr>
</tbody>
</table>
### 4.1 Bridge Structure Evaluation

Table 10 summarizes the criteria used in ranking the seven bridge concepts. These criteria were developed to also consider compatibility with the community plans and public input. The PDT scoring results, by total score applying equal weighting factors, are shown in Table 11. Bridge Concept 4A (Extradosed Concrete Box Girder with Three Dual Pylons) received the highest score, with Bridge Concept 2 (Cast-In-Place Box Girder with Steel Arch Pedestrian Ways) being second highest with only one point difference. Bridge Concepts 1A and 1 (Replication from Abutment to Abutment and Main Span Replication) received the lowest scores by the PDT members. The PDT also ranked alternatives based on the number of criteria with highest scores (Table 11). Based on this consideration, Bridge Concept 2 received the highest score in 10 out of 18 criteria considered. Bridge Concepts 4A and 5 were second, receiving the highest scores in 7 out of 18 criteria considered. Bridge Concepts 1 and 1A are at the bottom of the list, receiving the highest scores in 2 and 1 out of 18 criteria considered, respectively.

Based on the results of the evaluation presented above, Bridge Concept 4A was identified as the consensus preferred alternative.

#### Table 10

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seismic Performance</td>
<td>What is the seismic performance in terms of repairable damage after a maximum design seismic event, considering the structural system and materials? Will it be difficult to perform construction work after a seismic event, considering availability of materials and different structural elements? Considering the load redundancy of the structural system, are there multiple load paths? Are long frames resulting in minimal expansion joints and hinges possible? Are structural elements capable of sustaining large displacement/deformations while still maintaining load? Are structural elements ductile and/or compact?</td>
</tr>
<tr>
<td>Geometric Flexibility</td>
<td>During the design period, will changes in roadway vertical and horizontal alignments be possible without requiring a major modification to the bridge concept? Can the bridge concept accommodate curved horizontal alignments without adding significant costs? Can the bridge support system accommodate high skews along the railroad corridors and local streets below the structure without adding significant cost? Can the bridge supports be located to avoid conflicts with the existing access tunnel, sanitary sewer siphon, and towers for the overhead power lines? Is steel framing and/or reinforcing of structural members difficult with skewed and curved alignments? Can support cables be constructed along a skew and or curve, and does the cable interfere with driver sight distance?</td>
</tr>
<tr>
<td>Roadway and Pedestrian Safety</td>
<td>All concepts use a raised sidewalk (standard). Will crash barriers be required along the sidewalks to protect structural elements such as arch ribs and cable systems? Will crash barriers be required along the median to protect structural elements such as arch ribs and cable systems? Is sight distance reduced by structural elements projecting above the roadway surface along the curved alignment?</td>
</tr>
<tr>
<td>Accessibility to Ground Level from Bridge Deck</td>
<td>Will vertical access be precluded from the bridge deck to the ground below? Are piers located so access can be provided from the deck to the ground level along the river bank? Are belvederes provided at the top of the river bank to act as a future landing? Can access be provided along the span to the ground level along the river bank? How will the future access look from an aesthetics viewpoint, blending with the existing structure?</td>
</tr>
<tr>
<td>Historical Compatibility</td>
<td>Do structural elements retain the architectural vocabulary of the historical bridge? Does the concept have the same look as the existing bridge? Are similar materials being used that reflect the existing bridge’s character?</td>
</tr>
<tr>
<td>Public Support</td>
<td>Based upon written comments or public testimony at public hearings, which bridge concepts received support?</td>
</tr>
</tbody>
</table>

---

27
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iconic Value (visually unique)</td>
<td>Will the bridge be a signature design? Will the bridge be of “post card” quality, representing the City of Los Angeles? Does the bridge architecture invoke a renaissance of the downtown area? Is the bridge visually unique? Will the bridge evoke public interest and community pride?</td>
</tr>
<tr>
<td>Impacts to Local Traffic During Construction</td>
<td>Impacts to local traffic during construction will result from foundation and column construction adjacent to local roads and sidewalks, and from narrow falsework openings across roadways and sidewalks. Does the bridge layout avoid foundation construction adjacent to roadways and sidewalks? Can longer falsework be used to span beyond roadways and sidewalks to reduce impacts to traffic?</td>
</tr>
<tr>
<td>Hydraulic Impacts to River</td>
<td>Does the bridge completely span the river and its banks? Are piers located at the top of the river banks? Are piers located in the middle section of the river? Are pier shapes within the river designed to maintain (or reduce) the existing hydraulic grade? Will the pier layout and shape adversely affect the hydraulic grade within the Los Angeles River?</td>
</tr>
<tr>
<td>Environmental Impacts (water quality/aquatic)</td>
<td>Does the bridge completely span the river and its banks? Can foundation systems be constructed that minimize the need for excavation within the waterway?</td>
</tr>
<tr>
<td>Compatibility with Los Angeles River Revitalization Master Plan (LARRMP)</td>
<td>Are longer and fewer spans being used for the layout, providing greater opportunity for greening (open space) below the viaduct? Are piers being located away from the top of the river bank and railroad corridors?</td>
</tr>
<tr>
<td>Utility Impacts</td>
<td>Will the bridge concept require relocation of major utilities such as power transmission lines, fiber-optic lines, water line, sanitary sewer lines, and other wet and dry utilities? Can proposed or future utilities be supported within or on the superstructure?</td>
</tr>
<tr>
<td>Potential Impacts to California High Speed Rail</td>
<td>Are proposed piers/columns in conflict with the planned High Speed Rail tracks? Are piers/columns adjacent to the High Speed Rail tracks that might interfere with train operations?</td>
</tr>
<tr>
<td>Railroad Impacts</td>
<td>Will the bridge concept require foundation and bent column construction within the railroad ROW? Will the bridge concept minimize the time period of construction over the railroad ROW? Will additional railroad ROW or track realignment be necessary? Can the bridge concept provide adequate vertical clearance during construction over the railroad ROW? Can the bridge concept and material avoid or minimize maintenance requirements over the railroad ROW?</td>
</tr>
<tr>
<td>Construction Schedule</td>
<td>What is the period of construction for the bridge? Can the material supply be delayed by consequential causes such as labor strikes? Does the bridge construction method have risks that will potentially delay construction?</td>
</tr>
<tr>
<td>Construction Cost and Constructability</td>
<td>Is the initial construction cost high relative to other bridge concepts? Will the structural components be manufactured locally? Does the price of material supplies fluctuate on a quarterly basis? Is the construction scheme clear and uncomplicated? Are the details difficult to construct? Are extensive temporary supports and works or specialized equipment required for construction?</td>
</tr>
<tr>
<td>Maintenance/Serviceability</td>
<td>Will painting be required? Will cables/sockets or steel members require special inspection? Are components accessible for inspection? Will special equipment, such as a snooper, be required to inspect components? Can components be removed and replaced without requiring temporary support of adjacent components or the bridge? Is routine maintenance difficult or costly? Are components durable?</td>
</tr>
</tbody>
</table>
Table 11
Bridge Structure Ranking Results

<table>
<thead>
<tr>
<th>Seismic Performance</th>
<th>Geometric Flexibility</th>
<th>Roadway and Pedestrian Safety</th>
<th>Future River Access from Deck Level</th>
<th>Historical Compatibility</th>
<th>Public Support</th>
<th>Iconic Value</th>
<th>Impacts to Local Traffic During Construction</th>
<th>Hydraulic Impacts to the River</th>
<th>Environmental Impacts (water quality/aquatic)</th>
<th>Future Greening Opportunities</th>
<th>Utility Impacts</th>
<th>Potential Impacts to Future High Speed Rail Project</th>
<th>Railroad Impacts</th>
<th>ROW Impact to Properties</th>
<th>Cost &amp; Constructability</th>
<th>Maintenance/Serviceability</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranked by Total Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concept 1</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>103</td>
<td>6</td>
</tr>
<tr>
<td>Concept 1A</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>9</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>84</td>
<td>7</td>
</tr>
<tr>
<td>Concept 2</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>117</td>
<td>2</td>
</tr>
<tr>
<td>Concept 3</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>109</td>
<td>5</td>
</tr>
<tr>
<td>Concept 4</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>112</td>
<td>3</td>
</tr>
<tr>
<td>Concept 4A</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>118</td>
<td>1</td>
</tr>
<tr>
<td>Concept 5</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>110</td>
<td>4</td>
</tr>
<tr>
<td>Ranked by Number of Highest Scoring Criteria</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concept 1</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Concept 1A</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>9</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Concept 2</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Concept 3</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Concept 4</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Concept 4A</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Concept 5</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>
4.2 Alignment Alternative Evaluation

The criteria used in ranking the three alignment alternatives are summarized in Table 12. Based on the scoring results shown in Table 13, Alignment 3B received the highest score and Alignment 3C received the lowest score.

Table 12
Alignment Evaluation Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Explanation</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational Safety</td>
<td>Consideration is given to the following:</td>
<td>Scoring range was from 1 to 10, with “5” given to the alignment that is acceptable and “8” to the one that is above expectations. Alignment 3B has the largest radius over the river and eliminates the “kink” over US 101. Alignment 3B received the highest score of “8” because it provides better geometry, followed by 3A, and 3C.</td>
</tr>
<tr>
<td>Accessibility to Ground Level from Bridge Deck</td>
<td>Consideration is given to the following:</td>
<td>All of the proposed alignments equally meet the criterion. Each of the alignments was ranked “6” for meeting the criterion.</td>
</tr>
<tr>
<td>Impacts to Local Traffic during Construction</td>
<td>Will the alignment take into account commuter traffic traveling on 6th Street across the viaduct, as well as traffic adjacent to or in the vicinity of the bridge?</td>
<td>Scoring range was from 1 to 10, with the highest score given to the alignment that results in the least traffic impacts to adjacent businesses and provides opportunities for temporary parking. All of the alternatives were similar in terms of impacts to traffic across the viaduct. Alignment 3B received the highest score of “8” because the alignment swings to the north and provides additional work and access area once the existing bridge is removed. Alignment 3C had the lowest score of “4” because it impacts businesses on both sides of the existing bridge, plus it does not provide additional open space that can be used by the contractor or adjacent businesses.</td>
</tr>
<tr>
<td>Hydraulic Impacts during Construction</td>
<td>Consideration is given to the effect of each alignment on the river hydraulics.</td>
<td>None of the proposed alignments affect the river hydraulics; therefore, they all received the same ranking of “6” for meeting the criteria.</td>
</tr>
<tr>
<td>Environmental Impacts</td>
<td>Consideration is given to the impacts to the following environmental resources: water quality and habitat, community impacts such as environmental justice and business disruptions, visual/aesthetics, land use (industrial and planning), cultural resources, hazardous waste, air quality, and noise.</td>
<td>Scoring range was from 1 to 10, with the highest score given to the alignment that has the least impacts to land use and community impacts because the other factors are relatively similar among all of the alignments. Alignment 3A received the highest score of “7” because it had the least impacts to land use and businesses, followed by 3B at “6” and 3C at “4.”</td>
</tr>
<tr>
<td>Compatibility with LARRMP</td>
<td>Consideration is given to the following:</td>
<td>Scoring range was from 1 to 10, with the highest score given to the alignment that creates more open space. Alignment 3B received the highest score of “8” because it allows for most of the existing bridge footprint to become open space that can be used for future greening and/or redevelopment. Alignment 3C was ranked the lowest at “3” because it does not create open space.</td>
</tr>
<tr>
<td>Utility Impacts</td>
<td>Consideration is given to the impacts to</td>
<td>Scoring range was from 1 to 10, with the highest score given</td>
</tr>
</tbody>
</table>
### Table 12  
**Alignment Evaluation Criteria**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Explanation</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>major utilities such as the U.S. Army Corps of Engineers tunnel, Department of Water and Power (DWP) transmission lines, sewer siphon, and other utilities.</td>
<td>to the alignments that minimize impacts to utilities. All of the proposed alignments avoid all major utilities. Alignment 3C received the lowest score of “5,” in comparison to a “6” for the other alignments. All of the alignments meet DWP’s clearance requirement, except for Alignment 3C, which meets the bare minimum.</td>
<td></td>
</tr>
</tbody>
</table>
| Railroad Impacts        | Consideration is given to the following:  
• Will the alignment maintain existing vertical clearance?  
• Will the alignment be compatible with the high speed rail project?  
• Will the alignment minimize aerial easements?  
• Will the alignment reduce operational impacts? | Scoring range was from 1 to 10, with the highest score given to the alignment that minimizes aerial easements. All of the other criteria are the same for all of the proposed alignments. It is assumed that the City will own the easement over the railroad for the existing bridge footprint. Any portions outside this footprint will have to be acquired by the City. Under this scenario, Alignment 3C will require the least amount of additional aerial easement; therefore, it was scored highest at “7,” the other alignments were given a “6.” |             |
| ROW Impacts to Properties | Consideration is given to the following:  
• Will the alignment minimize impacts to businesses?  
• Will the alignment minimize impacts to properties? | Scoring range was from 1 to 10, with the highest score given to the alignment that has the lowest ROW costs/impacts. Alignments 3A was scored the highest at “7” based on the lowest ROW cost/impact. Alignment 3B had the highest ROW cost/impact, receiving a score of “4.” Alignment 3C also received a low score of “4” because of the risks involved during construction and because it impacted the largest number of parcels. |             |
| Construction Schedule   | Two scheduling scenarios were considered:  
• Combined demolition and construction.  
• Two separate contracts: demolition and construction. | Scoring range was from 1 to 10, with the highest score given to the alignments that have the shortest construction schedule under both scenarios. Alignments 3A and 3B scored the highest at “6” because the total construction duration was very similar under both scenarios. Alignment 3C scored a “4” because of the longer construction time frames under both scenarios. This is due to the proximity of the buildings on the south side of the bridge and east of the river. |             |
| Construction Cost and Constructability | This category considers construction costs and constructability of each alignment. | Scoring range was from 1 to 10, with the highest score given to the alignment that is easier to construct because all four proposed alignments have similar costs. Alignment 3C scored the lowest at “5” because of the risks involved with working in close proximity to the buildings on the south side of the alignment east of the river. The other alignments scored a “7.” |             |
| Maintenance              | This category considers if the alignment provides adequate space, preferably 15 feet, for maintenance on both sides of the bridge. | Scoring range was from 1 to 10, with the highest score given to the alignment that provides the most space to perform maintenance operations. Alignments 3B and 3B Modified provide 15 feet of space on both sides; therefore, they received the highest score at “7.” Alignment 3C received the lowest score at “3” because it does not provide any space on the south side of the segment east of the river. |             |
| Industrial Preservation   | This category considers if the alignment promotes preservation of industrial land uses. | Scoring range was from 1 to 10, with the highest score given to the alignment that promotes the most industrial land use preservation. Alignment 3A received a slightly lower score of “6” because they widen to the north, creating lesser opportunities for preservation of existing industries. Alignment 3B received a “5” because it widens the farthest to the north, impacting a larger number of industrial businesses. |             |
4.3 Summary

Based on the results of the analysis, the PDT members identified bridge concept 4A on alignment 3B as the preferred alternative. The City will go through a process to elaborate and refine the final design for the bridge replacement, as a means of ensuring that both an architecturally distinctive and cost-effective design is selected for construction. Design details of the preferred cable-supported bridge concept (4A) could evolve into different engineering and architectural expressions of this concept, in terms of tower and cable connection form for example, in addition to aesthetic elements of colors, textures, lighting, railings and gateway elements.

In order to provide design flexibility, the PDT subsequently recommended that the design principal of Bridge Concept 4, cable supported river spans with one central pier that clears the railroad tracks and avoids the overhead 230 kV powerlines, be the preferred alternative. A range of design expressions of this principle, including Concept 4A as one example, could be considered during final design.

---

### Table 13
Alignment Ranking Results

<table>
<thead>
<tr>
<th></th>
<th>Operational Safety</th>
<th>Future River Access</th>
<th>Impacts to Local Traffic During Construction</th>
<th>Hydraulic Impacts to River</th>
<th>Environmental Impacts</th>
<th>Future Greening Opportunities</th>
<th>Utility Impacts</th>
<th>Railroad Impacts</th>
<th>ROW Impacts to Properties</th>
<th>Construction Schedule</th>
<th>Cost &amp; Constructability</th>
<th>Maintenance</th>
<th>Industrial Preservation</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Development Team (Rank by Total Score)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alignment 3A</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>79</td>
<td>3</td>
</tr>
<tr>
<td>Alignment 3B</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>83</td>
<td>1</td>
</tr>
<tr>
<td>Alignment 3BM</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>83</td>
<td>1</td>
</tr>
<tr>
<td>Alignment 3C</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>7</td>
<td>66</td>
<td>4</td>
</tr>
</tbody>
</table>

| Project Development Team (Rank by Number of Highest Scoring Criteria) |
| **Weight**          | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | # of Highest Scores |
| Alignment 3A        | 6      | 6      | 6      | 6      | 7      | 5      | 6      | 6      | 7      | 6      | 7      | 5      | 6      | 7         | 2     |
| Alignment 3B        | 8      | 6      | 8      | 6      | 6      | 8      | 6      | 6      | 4      | 6      | 7      | 7      | 5      | 9         | 1     |
| Alignment 3BM       | 7      | 6      | 7      | 6      | 5      | 7      | 6      | 6      | 7      | 6      | 7      | 7      | 6      | 7         | 2     |
| Alignment 3C        | 5      | 6      | 4      | 6      | 4      | 3      | 5      | 7      | 4      | 4      | 5      | 3      | 7      | 4         | 4     |

---

| 32 |
Appendix O
Memorandum of Agreement (pursuant to Section 106 of the National Historic Preservation Act of 1966)
MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE 6th STREET VIADUCT SEISMIC IMPROVEMENT
PROJECT
LOS ANGELES, LOS ANGELES COUNTY, CALIFORNIA

WHEREAS, the Federal Highways Administration (FHWA) has assigned and the
California Department of Transportation (Caltrans) has assumed FHWA responsibility
for environmental review, consultation, and coordination under the provisions of the
Memorandum of Understanding (MOU) between the Federal Highway Administration
and the California Department of Transportation Concerning the State of California’s
Participation in the Surface Transportation Project Delivery Pilot Program, which
became effective on July 1, 2007, and applies to this project; and

WHEREAS, Caltrans has determined that the proposed replacement of the 6th Street
Viaduct (Bridge No. 53C-1880 and 53-0595) crossing the Los Angeles River, will have
an adverse effect on the 6th Street Viaduct, a property determined to be eligible for the
National Register of Historic Places (NRHP); and

WHEREAS, Caltrans has consulted with the California State Historic Preservation Officer
(SHPO) pursuant to Stipulations X.C., and X.I. of the January 2004, Programmatic
Agreement among the Federal Highway Administration, the Advisory Council on
Historic Preservation, the California State Historic Preservation Officer, and the
California Department of Transportation Regarding Compliance with Section 106 of the
National Historic Preservation Act, as it pertains to the Administration of the Federal-
Aid Highway Program in California (PA), and where the PA so directs, in accordance
with 36 CFR Part 800, the regulations implementing Section 106 of the National Historic
Preservation Act (NHPA) (16 USC Section 470f), as amended, regarding the
Undertaking’s effects on historic properties and has notified the Advisory Council on
Historic Preservation (ACHP) of the adverse effect finding pursuant to pursuant to 36 CFR
§ 800.6(a)(1); and

WHEREAS, Caltrans has thoroughly considered alternatives to the Undertaking, has
determined that the statutory and regulatory constraints on the design of the Undertaking
preclude the possibility of avoiding adverse effects to the historic property during the
Undertaking’s implementation, and has further determined that it will resolve adverse
effects of the Undertaking on the subject historic property through the execution and
implementation of this Memorandum of Agreement (MOA); and

WHEREAS, Caltrans District 7 (District 7) and the City of Los Angeles (City), have
participated in the consultation process and have been invited to concur in this MOA; and

WHEREAS, Caltrans shall ensure that the following stipulations are implemented; and
NOW, THEREFORE, Caltrans and the SHPO agree that, upon Caltrans’ decision to proceed with the Undertaking, Caltrans shall ensure that the Undertaking is implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on the historic property, and further agrees that these stipulations shall govern the Undertaking and all of its parts until this MOA expires or is terminated.

STIPULATIONS

Caltrans shall ensure the following stipulations are implemented:

I. AREA OF POTENTIAL EFFECTS

   A. The Area of Potential Effects (APE) for the Undertaking was established to include all areas within the vicinity of the Sixth Street Viaduct that may contain historic properties that would be directly or indirectly affected by the Undertaking. The APE included the maximum existing and proposed right-of-way, project construction easements, staging areas, and temporary or permanent changes in access. The APE is depicted as Exhibit 3 of Attachment A of this MOA.

   B. If modification of the Undertaking, subsequent to the execution of this MOA, necessitates the revision of the APE, Caltrans will consult with the City and the SHPO to facilitate mutual agreement on the subject revisions. If Caltrans, the City, and the SHPO cannot reach such agreement, then the parties to this MOA shall resolve the dispute in accordance with stipulation III.D below. If Caltrans and the SHPO reach mutual agreement on the proposed revisions, the City and Caltrans will submit a final map of the revisions, consistent with attachment 3 of the PA, no later than 30 days following such agreement.

II. TREATMENT OF HISTORIC PROPERTIES

   A. Prior to the start of any work that could adversely affect any characteristics that qualify the 6th Street Viaduct (Bridge No. 53C-1880 and 53-0595) as a historic property, the City shall contact the National Park Service Western Region Office (NPS) in Oakland, California, to determine if additional recordation is required for the historic property beyond that provided in “Historic American Engineering Record, 6th Street Bridge, HAER No. CA-176,” dated May 7, 1996. The City shall provide NPS 30 days to respond to their additional recordation determination request. If additional documentation is required, Caltrans shall ensure that the additional documentation is completed and accepted by NPS before the Viaduct is altered and/or demolished. The City shall prepare draft and final reports to be reviewed by Caltrans and NPS.

   B. Upon completion, copies of the documentation prescribed in subsection A of this stipulation, consisting of an acid-free xerographic copy of the report, prepared on standard 8 ½ X 11 paper, shall be retained by District 7, deposited in the Caltrans Transportation History Library in Sacramento, and offered by the City to, at a
minimum, the Los Angeles Public Library, Los Angeles Conservancy, Los Angeles City Historical Society, Historical Society of Southern California, City of Los Angeles Office of Historical Resources, and the California Office of Historic Preservation.

C. The City shall work with the Los Angeles Public Library to place the historical information from the HABS/HAER report 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 will also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on their website.

D. The City shall 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.

E. The City shall 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. City shall post an electronic version of the booklet 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. City shall maintain the camera-ready master booklet and produce additional copies if there is demand.

F. The City shall install two new freestanding informative permanent metal plaques or signage at both ends of the bridge at public locations that provide a brief history of the bridge, its engineering features and characteristics, and the reasons it was replaced.

G. The City shall offer artifacts removed from the Viaduct during demolition to local museums, or other suitable facilities to be determined by the City. The accepting institutions shall arrange their own transportation to deliver the artifacts to designated locations.
III. PROJECT DOCUMENTS CRITERIA AND REVIEW

A. The City shall submit to the SHPO for review and comment Design Development Drawings, and 30%, 60%, and 90% Construction Documents for work on the 6th Street Viaduct.

B. SHPO will review the project documents included in each consultation package submitted by the City to determine whether the Project Documents conform to the criteria cited in paragraph A of this stipulation. SHPO will provide comments on each submittal to the City within 30 calendar days of receipt. If the SHPO does not comment within the time provided, the City may assume that the SHPO concurs that the package conforms with the criteria cited.

C. The City will incorporate SHPO comments into the Project Documents to the fullest extent. If the City revises the Project Documents in response to the SHPO comments, then no further review is required for that submittal. The City will promptly notify SHPO in writing that it has revised the Project Documents in accordance with SHPO comments.

D. Should the City object to incorporating any SHPO comments into the Project Documents, the City will provide SHPO with written explanation of its objection. Promptly after receiving a written objection from the City, the City and SHPO shall consult to resolve the objection. If the objection is not resolve, provision of stipulation IV.C. shall be implemented.

IV. ADMINISTRATIVE PROVISIONS

A. Definitions.

The definitions provided at 36 CFR § 800.16 are applicable throughout this MOA.

B. Professional Qualifications and Standards

Caltrans will ensure that only individuals meeting the Secretary of the Interior’s Professional Qualification Standards (48 FR 44738-39) in the relevant field of study carry out or review appropriateness and quality of the actions and products required by Stipulations II. A-F in this MOA.

C. Discoveries and Unanticipated Effects

If Caltrans determines after construction of the Undertaking has commenced, that the Undertaking will affect a previously unidentified property that may be eligible for listing in the National Register, or affect a known historic property in an unanticipated manner, Caltrans will address the discovery or unanticipated effect in accordance with 36 CFR § 800.13(b)(3). Caltrans at its discretion may hereunder
assume any discovered property to be eligible for inclusion in the National Register in accordance with 36 CFR § 800.13 (c).

D. Resolving Objections

1. Should any party to this MOA object at any time in writing to the manner in which the terms of this MOA are implemented, to any action carried out or proposed with respect to implementation of the MOA, or to any document prepared in accordance with and subject to the terms of the MOA, Caltrans shall immediately notify the other parties of the objection, request their comments on the objection within 15 days following receipt of Caltrans’ notification, and proceed to consult with the objecting party for no more than 30 days to resolve the objection. Caltrans will honor the request of the other parties to participate in the consultation and will take any comments provided by those parties into account.

2. If the objection is resolved during the 30-day consultation period, Caltrans may proceed with the disputed action in accordance with the terms of such resolution.

3. If at the end of the 30 day consultation period, Caltrans determines that the objection cannot be resolved through such consultation, then Caltrans shall forward all documentation relevant to the objection to the ACHP, including Caltrans’ proposed response to the objection, with the expectation that the ACHP will, within thirty (30) days after receipt of such documentation:

   a. Advise Caltrans that the ACHP concurs in Caltrans’ proposed response to the objection, whereupon Caltrans will respond to the objection accordingly. The objection shall thereby be resolved; or

   b. Provide Caltrans with recommendations, which Caltrans will take into account in reaching a final decision regarding its response to the objection. The objection shall thereby be resolved; or

   c. Notify Caltrans that the objection will be referred for comment pursuant to 36 CFR § 800.7(c), and proceed to refer the objection and comment. Caltrans shall take the resulting comments into account in accordance with 36 CFR § 800.7(c)(4) and Section 110(1) of the NHPA. The objection shall thereby be resolved.

4. Should the ACHP not exercise one of the above options within 30 days after receipt of all pertinent documentation, Caltrans may assume the ACHP’s concurrence in its proposed response to the objection and proceed to implement that response. The objection shall thereby be resolved.

5. Caltrans shall take into account any of the ACHP’s recommendations or comments provided in accordance with this stipulation with reference only to the subject of the objection. Caltrans’ responsibility to carry out all other
actions under this MOA that are not the subject of the objection shall remain unchanged.

6. At any time during implementation of the measures stipulated in this MOA, should a member of the public raise an objection in writing pertaining to such implementation to any signatory party to this MOA, that signatory party shall immediately notify Caltrans. Caltrans shall immediately notify the other signatory parties in writing of the objection. Any signatory party may choose to comment in writing on the objection to Caltrans. Caltrans shall establish a reasonable time frame for this comment period. Caltrans shall consider the objection, and in reaching its decision, Caltrans will take all comments from the other signatory parties into account. Within 15 days following closure of the comment period, Caltrans will render a decision regarding the objection and respond to the objecting party. Caltrans will promptly notify the other signatory parties of its decision in writing, including a copy of the response to the objecting party. Caltrans’ decision regarding resolution of the objection will be final. Following issuance of its final decision, Caltrans may authorize the action subject to dispute hereunder to proceed in accordance with the terms of that decision.

7. Caltrans shall provide all parties to this MOA, and the ACHP, if the ACHP has commented, and any parties that have objected pursuant to section D.6 of this stipulation, with a copy of its final written decision regarding any objection addressed pursuant to this stipulation.

8. Caltrans may authorize any action subject to objection under this stipulation to proceed after the objection has been resolved in accordance with the terms of this stipulation.

E. Amendments

Any signatory party to this MOA may propose that this MOA be amended, whereupon all signatory parties shall consult to consider such an amendment. The amendment will be effective on the date that a copy is signed by all of the original signatories. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation III.F, below.

F. Termination

1. If this MOA is not amended as provided for in Stipulation III.E, or if either signatory proposes termination of this MOA for other reasons, the signatory party proposing termination shall, in writing, notify the other MOA parties, explain the reasons for proposing termination, and consult with the other parties for at least 30 days to seek alternatives to termination. Such consultation shall not be required if Caltrans proposes termination because the Undertaking no longer meets the definition set forth in 36 CFR § 800.16(y).
SIGNATORY PARTIES

California Department of Transportation

By: Jay Norvell, Chief Division of Environmental Analysis

Date: 5/6/10

California State Historic Preservation Officer

By: Milford Wayne Donaldson, FAIA State Historic Preservation Officer

Date: 10 MAY 2010

CONCURRING PARTIES

California Department of Transportation

By: Michael Miles, District Director District 7, Los Angeles

Date: 5/25/2010

City of Los Angeles

By: Cynthia Ruiz, President Board of Public Works

Date: 5/19/10
Attachment A: APE MAPPING

The APE Map is being kept on file with the City of Los Angeles and Caltrans.
Appendix P
Air Quality Conformity Concurrence by FHWA
Doug Failing, District Director
California Department of Transportation
District 7
100 South Main Street, Suite 100
Los Angeles, CA 90012-3606

Attention: Andrew Yoon, Senior Transportation Engineer

Dear Mr. Yoon:

SUBJECT: Project-Level Conformity Determination for the 6th Street Viaduct Seismic Improvement Project, City of Los Angeles

On November 25, 2009, the California Department of Transportation (Caltrans) submitted to the Federal Highway Administration (FHWA) a request for the project-level conformity determination for the 6th Street Viaduct Seismic Improvement Project in the City of Los Angeles pursuant to 23 U.S.C. 327(a)(2)(B)(i)(I). The project is in an area that is designated nonattainment or maintenance for ozone, coarse particulate matter (PM10), fine particulate matter (PM2.5), carbon monoxide (CO), and nitrogen dioxide (NO2).

The project-level conformity analysis submitted by Caltrans indicates that the project-level transportation conformity requirements of 40 C.F.R. Part 93 have been met. The project is included in the Southern California Association of Government’s (SCAG) currently conforming 2008 Regional Transportation Plan (RTP), and the 2008 Regional Transportation Improvement Program (RTIP). The current conformity determinations for the RTP and RTIP were approved by FHWA and the Federal Transit Administration (FTA) on January 14, 2009. The design concept and scope of the preferred alternative have not changed significantly from those assumed in the regional emissions analysis.

Based on the information provided, FHWA finds that the 6th Street Viaduct Seismic Improvement Project conforms to the State Implementation Plan (SIP) in accordance with 40 C.F.R. Part 93.
If you have any questions pertaining to this conformity finding, please contact Stew Sonnenberg, FHWA Air Quality Specialist, at (916) 498-5889.

Sincerely,

[Signature]

For
Walter C. Weidelich, Jr.
Division Administrator